

REVIEW

A systematic review of reflective writing in the pharmacy curriculum: Impact on patient-centred communication skills or cultural competence

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Keywords

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Abstract

Background: This review aims to identify and evaluate the impact of reflective writing in pharmacy curriculum on student's patient-centred communication (PCC) skills or cultural competence. **Methods:** Electronic databases of PubMed, Embase, Scopus, ERIC, CINAHL and PsychInfo were systematically searched without restricting study designs. **Results:** Six articles were included in this review. For PCC skills, reflective writing improves pharmacy students' motivational interviewing and shared decision-making skills, in managing patients' treatment plans. However, reflective writing only improves pharmacy students' ability to build rapport but not to recognise and respond to their patients' emotions, in reassuring their patients. Lastly, conflicting results are seen for its effects on cultural competence, due to differences in the measurement instruments and cultural academic assignments complementary to reflective writing. **Conclusion:** Reflective writing positively impacted pharmacy students' PCC skills in managing treatment plans but had limited impact on reassurance. Furthermore, the impact of reflective writing on pharmacy students' cultural competence is inconclusive.

Introduction

In the twenty-first century, healthcare providers face the issue of the growing complexity of the healthcare sector. This complexity is due to the increasing wealth of knowledge required of healthcare providers and the growing responsibilities they have to take on (Institute of Medicine Committee on Quality of Health Care in, 2001). Thus, training healthcare professionals to hone their skills to function within this ever-evolving landscape is a challenge (Mann, Gordon, & MacLeod, 2009). To address this situation, the Accreditation Council for Pharmacy Education (ACPE) has integrated the continuing professional development (CPD) model into the pre-existing pharmacy continuing education (CE) system (Wheeler & Chisholm-Burns, 2018). The CPD model requires reflection skills to examine one's knowledge, proficiency, and thoughts; they serve as barriers or facilitators to their performance and advancement (Janke & Tofade, 2015). This reflective practice allows pharmacists to establish new insights, prospects and options (Janke & Tofade, 2015).

To promote reflective practice, numerous educators within the health profession educational setting have adopted reflective writing in their curricula (Janke & Tofade, 2015). Reflective writing is the act of penning down details, opinions, emotions, and responses to the experience to enhance self-awareness, gain clarity, add meaning to, and learn from experiences (Shapiro & Ast, 2013; Coleman & Willis, 2015). The act of writing down one's thoughts and experiences is useful in aiding reflection (Black, 2006) as it encourages students to think, feel, and improve their knowledge of a subject (DiVall *et al.*, 2014). Numerous studies have cited the benefits of reflective writing when used in educational settings for healthcare professionals. For instance, reflective writing develops the ability to cope with emotional challenges at work (Rees, 2013; Mantzourani *et al.*, 2019).

There are some studies within the pharmacy curriculum which used reflective writing and measured changes in patient-centred communication (PCC) skills or cultural competence (Roche *et al.*, 2007; LaDisa, Bartelme, & Bellone, 2018). Patient-centred communication (PCC)

skills are defined as looking at the patient as a whole, eliciting and understanding the patients' views and issues regarding their medical conditions, and arriving at a common agreement on a treatment option acceptable to their patient (A. King & Hoppe, 2013; Naughton, 2018). Cultural competence is defined as comprehending the significance of social and cultural factors such as culture, ethnicity, religion, race, and sexual orientation on a patient's health condition (O'Connell *et al.*, 2007; Pearson *et al.*, 2007; Cooper, Vellurattil, & Quiñones-Boex, 2014). These factors are then taken into account when respectfully responding to concerns and providing healthcare services to patients (Betancourt *et al.*, 2003; Beach *et al.*, 2005; O'Connell *et al.*, 2007).

Cultural competence and PCC skills are essential skills for a healthcare provider (A. King & Hoppe, 2013; Kaihlanen, Hietapakka, & Heponiemi, 2019), so students should hone these skills during their academic years to prepare themselves for future practice. Since these skills and reflective writing are both garnering attention in healthcare education, delving into the impact reflective writing has on enhancing these skill sets in pharmacy students is an area of interest. The information obtained from this exploration would give pharmacy schools that are ambivalent about implementing reflective writing a clearer understanding of the usefulness of reflective writing in the pharmacy setting.

To date, there has been no systematic evaluation and review of the literature on the impact reflective writing has on fostering pharmacy students' PCC skills or cultural competence. Hence, this critical review aims to identify and evaluate the impact of reflective writing in a pharmacy curriculum on the student's PCC skills or cultural competence, with suggestions for future implementation.

Methods

Information sources and search strategy

The relevant electronic databases such as PubMed, Embase, Scopus, ERIC, CINAHL and PsychInfo were searched from the date of inception until the fourteenth of August 2020. The search strategy (Appendix 1) was applied across the six databases. Mesh terms, Emtree terms and thesaurus terms were added to the search strategy when searching in PubMed, Embase, and ERIC, respectively. Controlled vocabulary was inserted into the search strategy when searching in the CINAHL and PsychInfo databases.

Eligibility criteria

The articles that met the inclusion criteria utilised written reflection as an individual component or a subcomponent within the course discussed either the pharmacy undergraduate or graduate curriculum and measured changes in PCC skills or cultural competency. The inclusion criteria also consist of papers that listed the reflection guiding questions or fulfilled all of the following requirements: (1) More than one reflection entry was completed by the students, (2) general direction for reflection was mentioned, and (3) the platform used for reflection was mentioned. These criteria were set to ensure that the articles included in this study had a proper description of the reflection intervention and allowed for replication by the readers. The articles that did not analyze or describe a written reflective component, did not measure outcomes of changes or were written in languages other than English were excluded. Further, conference and review papers were excluded. There were no restrictions applied to the type of study designs to be included in the review.

Outcomes definition

There were four subcategories that were looked into for PCC skills. These were building rapport, active listening, recognising and responding to emotions, shared decision-making, and motivational interviewing (MI) (McCormack *et al.*, 2011; Elwyn *et al.*, 2014; Jahromi *et al.*, 2016; Hashim, 2017). Rapport building encompasses acknowledging the patient as a whole person and fostering connections with patients to build a therapeutic relationship to reassure patients that they are committed to serving and treating them (McCormack *et al.*, 2011). Active listening is another subcategory which refers to listening with complete attention while also giving appropriate signals to the patient, such as stating back their feelings and the content of the message (Jahromi *et al.*, 2016). Correspondingly, recognising and responding to emotions refer to the verbal aspects of identifying and supporting the feelings expressed by patients or non-verbal aspects of appropriate physical contact with patients (Hashim, 2017). In addition, shared decision-making is defined as sharing treatment options in a manner that does not overwhelm the patients while also accounting for the patient's values and goals when deciding on the treatment options (Hashim, 2017). Finally, MI entails guiding behavioural changes in patients who are uncertain about their current lifestyle choices and medication compliance (Elwyn *et al.*, 2014).

Cultural competency, on the other hand, had a total of five subcategories that were looked into in this review which were cultural desires, encounters, awareness,

knowledge and skills. Cultural desires refer to the interest to learn about and interact with diverse cultural backgrounds and raise one's cultural knowledge, skills, and awareness (Alizadeh & Chavan, 2016). Equally important, cultural encounters comprise direct interactions with people of different cultural backgrounds (Alizadeh & Chavan, 2016). Cultural awareness involves becoming aware of one's preconceptions, biases and prejudiced beliefs. Cultural skills involve delivering healthcare and responding respectfully. Cultural knowledge includes learning more about others. All of this requires an understanding of a patient's culture, ethnicity, religion, race and sexual orientation (Alizadeh & Chavan, 2016).

Data collection process and data items

A single reviewer was involved in screening the title/abstract field of the articles that were identified using the search strategy and the full texts of the papers that passed the title/abstract screening process. During the title/abstract screening phase, a substantial number of articles were removed as the abstracts did not mention outcomes related to PCC or cultural competence. In the full-text screening phase, articles were mainly excluded as they did not meet the reflective writing requirements.

A single reviewer was also responsible for extracting the relevant data. Each article included in this critical review was analysed to collate data such as reflective writing complementary measures, frequency of entries, questions provided and measurements of PCC skills or cultural competence.

Risk of bias in individual studies

The finalised list of articles included in this review consists mainly of quasi-experimental studies with a control group and single cohort studies with no control groups. For the single cohort studies with no control group, an 18-criteria checklist for case series quality appraisal, developed using the modified Delphi technique, was used to analyse their risk of bias (Moga *et al.*, 2012). On the other hand, the quasi-experimental studies with a control group were assessed using the Risk of Bias In Non-randomised Studies - of Interventions (ROBINS-I) tool.

Synthesis of results and summary measures

This qualitative review consists of both qualitative and quantitative results of PCC skills and cultural competence. A descriptive analysis was applied to observe common patterns across the studies and examine the studies in closer detail for changes in PCC skills and cultural competence.

Results

As shown in Figure one below, out of the 1605 studies identified by the search strategy, 900 studies were eliminated during the title/abstract screening, and the full texts of the remaining 41 articles were screened. A total of six articles were found to have met the inclusion criteria, and all six articles were studies carried out in the United States of America and consisted of doctor of pharmacy students (Poirier *et al.*, 2009; Goggin *et al.*, 2010; Lonie & Rahim, 2010; Martin *et al.*, 2012; A. E. King, Joseph, & Umland, 2017; Skoy & Werremeyer, 2020). The studies introduced reflective writing to students of different academic years. One of the studies used reflective writing for three continuous academic years for the same cohort of students (A. E. King *et al.*, 2017), and another introduced reflective writing to two groups of students who were from different academic years (Goggin *et al.*, 2010). The other four studies introduced reflective writing to students from a single academic year (Poirier *et al.*, 2009; Lonie & Rahim, 2010; Martin *et al.*, 2012; Skoy & Werremeyer, 2020). Comparing the duration of the studies, most studies were conducted over the course of at least one academic semester, with the exception of the sixth study, which had the shortest duration, as it was an immersion programme overseas.

All six studies required their students to accomplish a disparate number of reflections, as shown in Table I. One study gave their students only three reflective paper assignments (Lonie & Rahim, 2010), whereas the other studies required at least seven reflective writing entries (Poirier *et al.*, 2009; Goggin *et al.*, 2010; Martin *et al.*, 2012; A. E. King *et al.*, 2017). Only one study allowed their students to decide on the number of reflections they wanted to write, ranging from a minimum of two to a maximum of 27 entries (Skoy & Werremeyer, 2020). The Accreditation Council for Pharmacy Education (ACPE) Standard four encourages students to examine, reflect, and self-assess their knowledge, skills, attitudes, and values for personal and professional growth in order to develop personal learning plans and maintenance of student portfolios. However, they make no specific recommendations for the number of entries required to meet the learning outcomes (Burkhardt *et al.*, 2019). The educational methods complementary to reflective writing across the six studies (Table I) were also different from one another. Among the four studies that measured cultural competence (Poirier *et al.*, 2009; Martin *et al.*, 2012; A. E. King *et al.*, 2017; Skoy & Werremeyer, 2020), there were distinct variations in the complementary measures used with reflective writing.

Only two studies provided students with materials (Poirier *et al.*, 2009) or assignments (Werremeyer &

Skoy, 2012; Skoy & Werremeyer, 2020) to expose them to different cultures within the classroom setting.

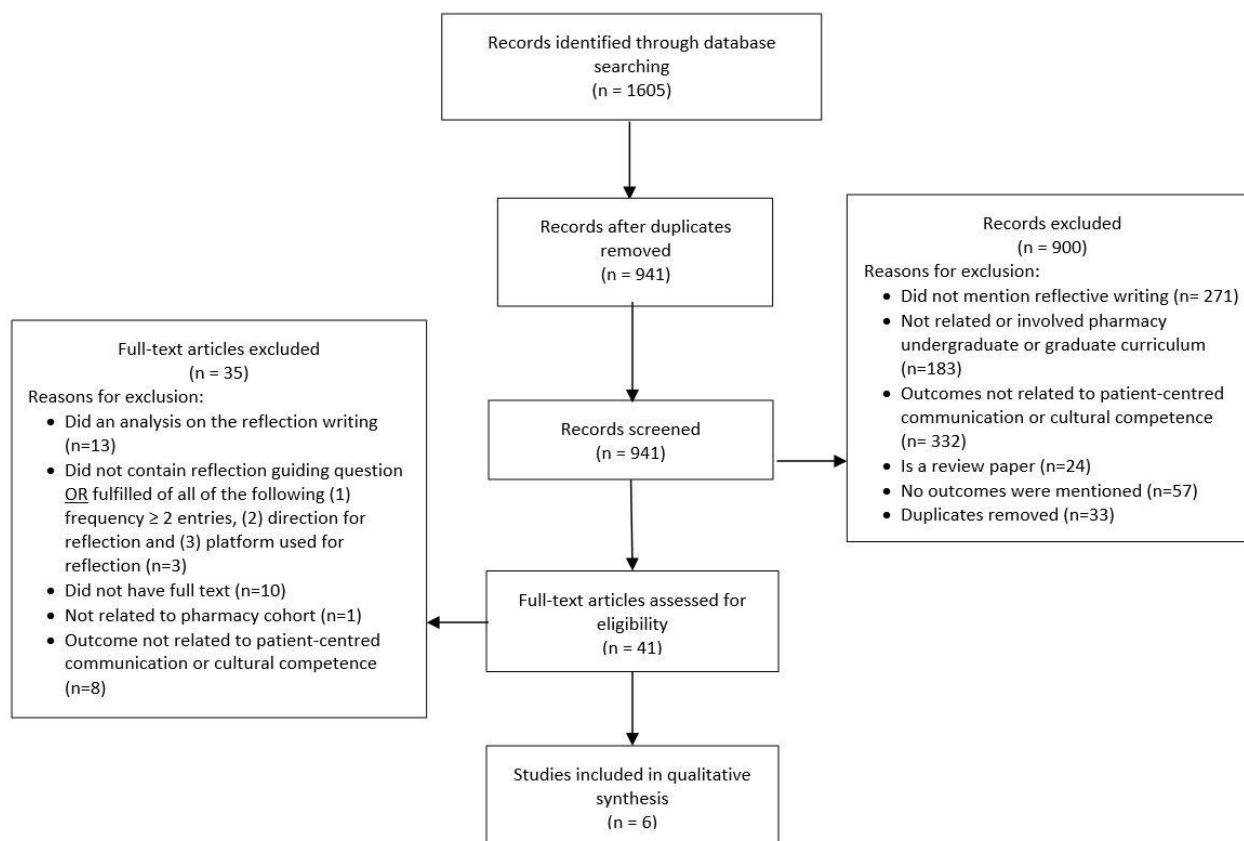


Figure 1: PRISMA flowchart

The quality of both quasi-experimental studies was assessed using the ROBINS-I tool, and both had the same rating for their overall risk of bias which was the serious rating (Lonie & Rahim, 2010; Skoy & Werremeyer, 2020). This rating was due to the serious rating given to the risk of bias for the domain regarding the control of potential confounders (Lonie & Rahim, 2010; Skoy & Werremeyer, 2020). In one of the studies, there were no student characteristics given for both the students exposed to reflective writing and the students who were not exposed to reflective writing (Lonie & Rahim, 2010). Thus, these characteristics such as age, gender and students' level of experience in pharmacy practice activities were potential confounders that were not controlled in the study (Lonie & Rahim, 2010). Similarly, in the other study, there were variations in the students' experiential learning site, length of stay, type of experience and group dynamics, which were likely potential confounders (Skoy & Werremeyer, 2020). Due to the multiple confounders found in both studies, the internal validity of the studies was decreased (Harris *et al.*, 2006). Hence, the causal effect

between reflective writing and PCC skills or cultural competence is not well established. For the four studies, which were single cohort studies with no control group (Poirier *et al.*, 2009; Goggin *et al.*, 2010; Martin *et al.*, 2012; A. E. King *et al.*, 2017), their risk of bias was assessed using the 18-criteria checklist for case series quality appraisal (Moga *et al.*, 2012). Only one of the studies was of acceptable quality, with a score of 14 (Martin *et al.*, 2012), so the results from the other three studies are not as reliable (Poirier *et al.*, 2009; Goggin *et al.*, 2010; A. E. King *et al.*, 2017).

Table II shows a summary of the outcomes measured in the six studies. Two studies only measured outcomes related to PCC skills (Goggin *et al.*, 2010; Lonie & Rahim, 2010), three studies measured results of cultural competence (Poirier *et al.*, 2009; A. E. King *et al.*, 2017; Skoy & Werremeyer, 2020), and one study measured outcomes related to both PCC skills and cultural competence (Martin *et al.*, 2012). These outcomes were measured quantitatively and qualitatively using different instruments.

Table I: Summary of study description

Study	Study design	Duration of program	Summary of guiding questions/ topic	Number of entries	Complementary measures to reflective writing	
J. M. Lonie and H. Rahim (Lonie & Rahim, 2010)	Quasi-experimental	One academic term	<ul style="list-style-type: none"> -Identify, explain and methods for overcoming personal barriers faced in communication -Identify past events students demonstrated empathy and changes in the understanding of empathy 	Three reflection papers	<ul style="list-style-type: none"> Hands-on practice sessions Didactic curriculum 	<ul style="list-style-type: none"> -50 minutes weekly laboratory but only three weeks of mock patient counselling sessions with graduate teaching assistants -Three practice sessions of Objective Structure Clinical Examination (OSCE) before final OSCE -50 minutes of weekly lectures -Individualised reflection feedback for drafts
K. Goggin and authors .(Goggin <i>et al.</i> , 2010)	Single cohort studies with no control groups	One academic term	<ul style="list-style-type: none"> -Lessons learnt and the impact on the student’s perspective -Rationalise the actions of patients -Evaluate their performance and impact on patient 	Six reflection reports with 16 written reflection forms	<ul style="list-style-type: none"> Hands-on practice sessions Didactic curriculum 	<ul style="list-style-type: none"> -Motivational interviewing (MI) role-play or demonstrations in class with debriefs for 11 sessions -Six recorded, structured out-of-class, self-recruited patient interview practices on health behaviours patients were willing to change, using the six provided interview questions designed to promote MI interaction and applying skills learnt in class. Interviewees gave students feedback and students wrote a summary on the pros and cons of the interviewee’s behaviour change -Supervision: Psychology doctoral students trained in MI gave students five supervision sessions and supervisors listened to students’ recorded practice interviews. In-class supervision gave students individualised feedback -Introduced to MI and concepts on health behaviour changes -Brief review of students’ reflection forms -Lectures using active-learning techniques -Video demonstration of skills and discussion
B. A. Martin and authors (Martin <i>et al.</i> , 2012)	Single cohort studies with no control groups	One academic year	<p>Group reflection questions:</p> <ul style="list-style-type: none"> -Themes: Professionalism, areas for improvement, team dynamics, MI technique, and partner engagement <p>Individual reflection questions:</p>	Ten online reflections	Hands-on practice sessions	<ul style="list-style-type: none"> -Student pharmacists in teams of three made ten one-hour visits to their senior partner. Students were tasked to monitor their patients’ health, medication use, nutritional status, and learn about their senior partner’s daily routines, while also helping their partner with any health-related issues. Student teams created and updated after each visit an e-portfolio documenting their experiences and their partner’s information.

Study	Study design	Duration of program	Summary of guiding questions/ topic	Number of entries	Complementary measures to reflective writing	
			-Theme: Team dynamics and team members evaluation		Didactic curriculum	-Supervision: Student teams met course coordinators to discuss team dynamics, experience, questions that they have and report their progress on the e-partner portfolio. -Boot camp for older-adult sensitivity training. -Discussion sessions on team dynamics, class sharing of articles relevant to older adults; MI techniques; closing off the experience and coping with bereavement -Final discussion session for the team’s presentation on key points learnt from the experience and its impact on their future role as pharmacists.
A. E. King and authors (A. E. King <i>et al.</i> , 2017)	Single cohort studies with no control groups	Three academic years	“What? So What? Now What?” Reflection model	18 reflection papers	Hands-on practice sessions	-Students participated in one Introductory Pharmacy Practice Experience at various locations for each semester during their first three years of study
T. I. Poirier and authors (Poirier <i>et al.</i> , 2009)	Single cohort studies with no control groups	One academic term	Seven Themes based on the course content clusters, with three to five questions each	Seven online reflective portfolio	Didactic curriculum	-Used a team-based learning approach and gave Readiness Assessment Tests for required pre-class readings. -Seven clusters of course content related to various cultures covering: Cultural desire, culturally competent healthcare service delivery, cultural awareness, cultural knowledge, cultural skills, cultural health literacy knowledge and skills, and cultural encounter
E. Skoy and A. Werremeyer (Skoy & Werremeyer, 2020)	Quasi-experimental	Five weeks	Document each photograph with reasons for taking the picture and also encouraged to do written reflection in the journal about their experiences while abroad	Student’s decision: two to 27 photovoice journal entries	Hands-on practice sessions Didactic curriculum	-Served on a medical mission team at clinics in rural areas of Guatemala and were responsible for medication evaluation, organisation and operationalisation of medication dispensing, patient education, and consultation with other healthcare team members. -Research and present on formulary medications, disease states prevalent in Guatemala, and aspects of Guatemalan culture to the other students and the Advanced Pharmacy Practice Experience preceptors (Werremeyer & Skoy, 2012).

Table II: Summary of results

Study	Category of outcomes	Outcome(s) measured	Summary of results
J. M. Lonie and H. Rahim (Lonie & Rahim, 2010)	Patient-centred communication (PCC) skills	Objective measures Objective Structure Clinical Examination (OSCE) scores	Recognising and responding to emotion No significant difference in OSCE performance between the group of students who did reflective writing and did not do reflective writing.
K. Goggin and authors (Goggin <i>et al.</i> , 2010)	PCC skills	Objective measures Skills rating form Length of practice interview timing Self-reported measures Student Evaluation of the course instrument	Motivational interviewing (MI) skills MI skills The students' overall MI scores for their last MI session was significantly higher than the first MI session Shorter duration of MI session Overall, students reported high levels of motivation and confidence in using MI skills with future patients
B. A. Martin and authors (Martin <i>et al.</i> , 2012)	PCC skills and cultural competence	Self-reported measures Confidence inventories: Survey on Students' Mean Confidence Ratings Before and After their Senior Partner Experiences Objective measures Satisfaction survey instrument Themes of team presentation on their ageing and pharmacist "pearls."	Shared decision-making Recognising and responding to emotion Cultural knowledge MI skills Rapport building Students reported an overall significant increase in their confidence in actively involving their patients in managing their medication and lifestyle Overall, students reported no improvements in their confidence in expressing empathy and reflecting a patient's emotions Overall, students did not report an increase in their certainty to recognise cultural background impact on patients' health and ability to treat their illness Students motivated them to exercise more A large proportion of students understood the importance of building rapport with patients
A. E. King and authors (A. E. King <i>et al.</i> , 2017)	Cultural competence	Self-reported measures Reflection writing survey	Cultural skills Cultural awareness Students' perception of reflective writing degree of impact on responding sensitively to various populations: -48% of students agreed that reflective writing impact on their ability to respond sensitively to a diverse population was significant (10%) or appreciable (38%) Student's comments on the importance of reflective writing: -Mixed comments of reflective writing improving students' awareness of their biases or prejudice they have on other cultures
T. I. Poirier and authors (Poirier <i>et al.</i> , 2009)	Cultural competence	Self-reported measures The Inventory For Assessing The Process Of Cultural Competence Among Healthcare Professionals- Revised (IAPCC-R) End-of semester course evaluation	Overall cultural competence Cultural awareness, skills, knowledge, encounters and desires Cultural awareness Cultural knowledge Students' overall cultural competence improved significantly from being culturally aware to being culturally competent All five subcategories of cultural awareness, knowledge, skills, encounters, desires significantly increased as an overall of all students Students reported a high level of agreement that the course increased their awareness of their prejudices toward individuals who are different from themselves Students agreed to a great extent that the course helped developed their knowledge of different cultures' health beliefs and health promotion needs
E. Skoy and A. Werremeyer (Skoy & Werremeyer, 2020)	Cultural competence	Self-reported measures Inventory For Assessing The Process Of Cultural Competence Among Healthcare Professionals- student version (IAPCC-SV) Focus group discussion	Overall cultural competence Cultural knowledge Increase in the overall mean score of both groups that did reflective writing Both groups that did reflective writing showed improvements in cultural knowledge

Within the category of PCC, four subcategories which were “Recognising and responding to emotion”, “Rapport building”, “Shared decision-making” and “MI skills” were measured. Two studies measured the subcategory of “Recognising and responding to emotion”; however, these two studies used two different non-validated instruments to measure this outcome (Lonie & Rahim, 2010; Martin *et al.*, 2012). In one of the two studies, there was no reported significant difference in the Objective Structure Clinical Examination scores (Lonie & Rahim, 2010) between the group of students who did reflective writing and the control group who did not write any reflections. Similarly, in the other study by Martin and authors (Martin *et al.*, 2012), there were no improvements in the students’ self-reported confidence in reflecting the patients’ emotions before and after the course. For the subcategory of MI, there was a significant improvement between the students’ first and last median MI scores (Goggin *et al.*, 2010), and patients reported that the students were successful in helping them make behavioural changes, such as exercising more often (Martin *et al.*, 2012). Additionally, the majority of the students expressed high levels of motivation and confidence in their ability to use MI skills by the end of the course (Goggin *et al.*, 2010). In the study by Martin and authors (Martin *et al.*, 2012), the subcategories of rapport building and shared decision-making were also measured. The students’ demonstrated an improved understanding of the importance of building rapport in their final presentation. Similarly, improvement in the shared decision-making subcategory was reflected by the significant increase in the students’ confidence in actively engaging their patients in lifestyle and medication management (Martin *et al.*, 2012).

For cultural competence, two studies utilised a validated and reliable self-reporting instrument known as the Inventory For Assessing The Process Of Cultural Competence Among Healthcare Professionals (IAPCC) to measure a healthcare professionals’ level of cultural competence (Poirier *et al.*, 2009; Skoy & Werremeyer, 2020). Both studies showed an improvement in pharmacy students’ cultural competence IAPCC scores, but only one of the two studies measured and recorded significant improvements in all five subcategories of cultural competence (Poirier *et al.*, 2009). In the study by Martin and authors (Martin *et al.*, 2012), there was no significant increase in the student’s certainty of recognising the effects that cultural background had on a patient’s health status. As such, there was no positive impact on the cultural knowledge of pharmacy students. The study done by King and authors (A. E. King *et al.*, 2017) demonstrated that less than half of the

students agreed that the impact of reflective writing on their ability to respond sensitively to people of a different culture was significant or appreciable. In addition, the students gave mixed comments on the impact reflective writing had on their cultural awareness, particularly in helping them identify their personal beliefs and biases towards different cultures, ethnicities and sexual orientations (A. E. King *et al.*, 2017). Among the four studies that measured changes in cultural competence (Poirier *et al.*, 2009; Martin *et al.*, 2012; A. E. King *et al.*, 2017; Skoy & Werremeyer, 2020), the two studies that introduced students to other cultures through the means of assignments or reading materials in the didactic curriculum, illustrated an improvement in cultural competence (Poirier *et al.*, 2009; Skoy & Werremeyer, 2020).

Discussion

Overall, the outcomes measured in each study differed from one another. This difference limits the conclusions that can be derived from this review on the impact reflective writing has on pharmacy students’ PCC skills or cultural competence. The results obtained for PCC skills and cultural competence will be discussed as separate entities to determine the impact of reflective writing on each skill.

Patient-centred communication (PCC) skills

The outcomes of PCC skills could be categorised into two different themes, which are pharmacy students’ ability to alter therapeutic plans and ability to provide reassurance. These two themes are aligned with the definition of PCC. Altering therapeutic plans entail arriving at a common agreement on a treatment option acceptable by their patient (A. King & Hoppe, 2013; Naughton, 2018). Likewise, providing reassurance encompasses looking at the patient as a whole, eliciting and understanding the patients’ views and issues regarding their medical conditions (A. King & Hoppe, 2013; Naughton, 2018)

Altering therapeutic plans

In this review, reflective writing was shown to positively impact pharmacy students’ ability to conduct MI and shared decision-making with their patients. Both of these skills are involved in making therapeutic plan changes by exploring and selecting treatment options that are acceptable to their patients (Elwyn *et al.*, 2014). Reflective practice has been said to aid in the shared decision-making process (Truglio-Londrigan, 2016) and is

also an essential component for fostering MI skills (M *et al.*, 2015). The reason for this could be due to transformative learning. As suggested by Mezirow, transformative learning requires learners to critically reflect on their assumptions, which may eventually result in changes in their views or opinions on a subject (Mezirow, 2000). Reflective writing is a platform to facilitate critical reflection among pharmacy students, and they can subsequently learn from their reflections. Consequently, they can apply their learning to future counselling scenarios that require MI or shared decision-making skills (Tsingos, Bosnic-Anticevich, & Smith, 2014). For instance, in a study conducted in Pakistan, it was reported that health professionals did not give patients sufficient room to ask questions regarding their medications (Saqib *et al.*, 2018). In addition, the health professionals did not communicate effectively with the patient regarding their medications due to the disparity in literacy (Saqib *et al.*, 2018). Due to the patients' misconception resulted in them stopping their medications when side effects surfaced (Saqib *et al.*, 2018). In these scenarios, incorrect assumptions were made by the professionals that the patients had sufficient knowledge about their medications and thus requiring no further elaboration. Having reflective writing as a platform for critical reflection on these incorrectly made assumptions can help the health professionals to come to a realisation of their weak areas. Upon reflecting, transformative learning takes place to alter their usual working styles to ensure that they take into account the patients' opinions and help them to improve medication compliance. Hence, reflective writing should be implemented in a pharmacy curriculum to aid in the improvement of pharmacy students' ability to make therapeutic plan changes with their patients.

Providing reassurance

Both subcategories of PCC skills which are building rapport as well as recognising and responding to emotion entails providing reassurance to the patient (McCormack *et al.*, 2011). Building rapport reassures the patient that the healthcare provider is dedicated to helping the patient, whereas recognising and responding to emotion reassures the patient about their concerns regarding their disease states (McCormack *et al.*, 2011). However, the impact of reflective writing on the pharmacy students' ability to reassure their patient was conflicting. On the one hand, reflective writing was shown to increase pharmacy students' understanding of the importance of building rapport with their patients. Yet, reflective writing did not lead to improvements in the aspect of recognising and responding to emotion. The simplest form of reflection writing involves reflecting on important incidents or greatest takeaways from

experiences (DiVall *et al.*, 2014), and it has been reported in the study by Wallman and authors (Wallman *et al.*, 2008) that most pharmacy students were unable to reach a level of reflection that involves an emotional assessment of their performance. As a result, pharmacy students might not be able to develop their abilities to recognise and respond to emotion to help their patients manage emotional concerns or fears (Lonie & Rahim, 2010; Martin *et al.*, 2012). Hence, reflective writing does not positively impact one aspect of pharmacy students' ability to reassure patients. Among the two studies that measured changes in pharmacy students' ability to recognise and respond to emotion, there was a lack of reflection writing practice noted in one of the studies (Lonie & Rahim, 2010) and lack of reflection feedback provided to the students in the other (Martin *et al.*, 2012). Pharmacy students' level of reflection can be enhanced by increasing the frequency of reflective writing and providing students with feedback on their reflections (Holt, 1994; Spalding & Wilson, 2002; Wallman *et al.*, 2008; Reis *et al.*, 2010). Therefore, these strategies can be used jointly by pharmacy schools that are interested in adopting reflective writing to enable pharmacy students to develop their ability to reassure their patients.

Cultural competence

According to the model established by Campinha-Bacote (Campinha-Bacote, 2002), cultural competence consists of five constructs which are cultural knowledge, skills, awareness, desires, and encounters (Campinha-Bacote, 2002). These five constructs are interdependent, and all of them are required for the ongoing process of a healthcare professional's journey to becoming culturally competent (Campinha-Bacote, 2002). However, in this review, there were conflicting results obtained for the subcategories of cultural knowledge, skills, and awareness. These conflicting results of cultural competence could be due to two reasons.

Firstly, the tools used to measure the three constructs of cultural knowledge, skills, and awareness were different (Poirier *et al.*, 2009; Martin *et al.*, 2012; A. E. King *et al.*, 2017). Only one study used a validated and reliable instrument known as the IAPCC tool, to measure the changes and demonstrated a significant increase in the three constructs (Poirier *et al.*, 2009). The other two studies did not use validated and reliable instruments to measure the changes in these constructs but demonstrated that pharmacy students had no improvements in them (Martin *et al.*, 2012; A. E. King *et al.*, 2017). Secondly, the complementary educational measures used with reflective writing also differed between the studies (Poirier *et al.*, 2009; Martin *et al.*, 2012; A. E. King *et al.*, 2017; Skoy & Werremeyer, 2020). It was reported that didactic programs that expose

students to other cultures could enhance cultural competence (Rubenstein *et al.*, 1992; Kratzke & Bertolo, 2013). In the two studies where pharmacy students showed improvements in cultural competence, which were measured using the IAPCC instrument, additional teaching materials or assignments which exposed the students to various cultures were given to complement reflective writing (Poirier *et al.*, 2009; Skoy & Werremeyer, 2020). Contrary to the previous two studies, pharmacy students in the two other studies were not exposed to various cultures through reading materials or research assignments (Martin *et al.*, 2012; A. E. King *et al.*, 2017). As a result of this disparity in complementary measures, the pharmacy students from the latter two studies did not demonstrate positive changes in cultural knowledge, skills or awareness.

Pharmacy students need all five constructs to develop cultural competence (Campinha-Bacote, 2002), but conflicting results were obtained for three constructs. However, due to the positive change in cultural competence obtained from the two studies that used the validated and reliable IAPCC instrument (Poirier *et al.*, 2009; Skoy & Werremeyer, 2020), there is currently insufficient evidence to conclude that reflective writing does not contribute to the positive impact on pharmacy students' cultural competence. Further studies are required to evaluate the impact of reflective writing on pharmacy students' cultural competence. The results obtained for cultural competence from this review contradicts the theory proposed by Schön that professionals can hone their skills through reflective practice even without prior knowledge (Schon, 2011). However, as seen from this review, those students who were in a didactic curriculum with no exposure to various cultures and only practised reflective writing were unable to demonstrate an improvement in the various constructs of cultural competence (Martin *et al.*, 2012; A. E. King *et al.*, 2017). On the contrary, these results are consistent with the concept of technical rationality which Schön has pinpointed as a flaw in the curriculum of professional schools. Technical rationality states that a foundational knowledge base is required before professionals can build up their skills (Schon, 2011). This could be due to the fact that the five constructs of cultural competence have an interdependent relationship with one another (Campinha-Bacote, 2002). Thus, all five constructs will grow in tandem and not a single construct can be neglected. Due to the lack of emphasis on cultural knowledge, it can hinder the growth of the other four constructs of cultural competence, so cultural competence may be a skill that requires the adoption of the technical rationality approach. Alone, reflection may not suffice for the development of cultural competence, since reflection does not have a good correlation with knowledge (Lew

& Schmidt, 2011). Furthermore, according to a review within the medical educational setting, reflective writing was also recommended to be used simultaneously with cultural orientation programs in the didactic curriculum (Wear *et al.*, 2012). Pharmacy schools that are interested in adopting reflective writing could utilise a similar strategy by coupling reflective writing with academic assignments that expose students to various cultures to increase the success rates of developing pharmacy students' cultural competence.

Limitations

This review should be read with the following limitations in mind. Most of the studies are single cohort studies with no control groups (Poirier *et al.*, 2009; Goggin *et al.*, 2010; Martin *et al.*, 2012; A. E. King *et al.*, 2017), and only two of the studies are quasi-experimental studies with control groups (Lonie & Rahim, 2010; Skoy & Werremeyer, 2020). Hence, the level of evidence provided by these studies is not as strong as compared to randomised controlled trials (RCTs). However, it is not ethical to use RCTs study design in the educational settings (Fives *et al.*, 2015) as imparity arises when the same cohort of students are given different forms of education. Another limitation of the study would be the small sample sizes in most of the studies as most of them conducted the study with students from a single academic year (Poirier *et al.*, 2009; Lonie & Rahim, 2010; Martin *et al.*, 2012; A. E. King *et al.*, 2017; Skoy & Werremeyer, 2020). Thus, the statistical power to detect the impact of reflective writing on PCC skills or cultural competence is decreased (Nayak, 2010), which could have resulted in the lack of positive change being detected in some of the studies.

In addition, the majority of the studies were at risk of bias. Both of the quasi-experimental studies were reported to have an overall risk of bias with a serious rating due to the presence of potential confounders, such as student characteristics, which were not controlled for in the studies, thus leading to a decrease in internal validity of the studies (Lonie & Rahim, 2010; Skoy & Werremeyer, 2020). Furthermore, a majority of the single cohort studies were evaluated to be not as reliable, as the majority of them did not describe the characteristics of their participants and also only had conducted their study in a single school, hence the results obtained from these studies may not be entirely extrapolated to different settings. An additional limitation of this review would be the exclusion of articles that analysed the written reflections. Although the basis of excluding these articles were to ensure that the written reflections were used as an educational tool instead as a measurement instrument, this may have led to a decrease in amount of qualitative data

gathered for this review on the student's PCC skills or cultural competency.

Future directions

Most of the studies measured short term outcomes of changes in PCC skills and cultural competence as the duration of most of the studies was less than or equal to one academic semester (Poirier *et al.*, 2009; Goggin *et al.*, 2010; Lonie & Rahim, 2010; Skoy & Werremeyer, 2020). Future studies may explore the long term impact that reflective writing has on pharmacy students' development in PCC skills or cultural competence. Most of the six studies implemented reflective writing as an individual assignment, except for the study by Martin and authors (Martin *et al.*, 2012), which implemented reflective writing as both a group and an individual assignment. Future studies may be done to examine the impact of group reflective writing assignments on pharmacy students' PCC skills or cultural competence. Additionally, a few studies were excluded from this review as they did not report sufficient details of the reflective writing interventions. Thus, future studies may be done with greater elaboration on reflective writing interventions, which may help guide future implementation of reflective writing in the pharmacy curriculum.

Conclusion

This review has identified and evaluated the impact of reflective writing on pharmacy students' PCC skills or cultural competence. Among PCC skills, reflective writing improves pharmacy students' ability to manage their patients' therapeutic care plans, as shown by the improvements in the students' MI and shared decision-making skills. However, reflective writing was only able to improve pharmacy students' ability to provide reassurance through rapport building but not through recognising and responding to their patients' emotion. Lastly, in terms of cultural competence, reflective writing impact on pharmacy students' cultural competence is inconclusive due to the different measurement instruments and complementary measures used with reflective writing. These results are particularly beneficial for pharmacy schools who are ambivalent about implementing reflective writing in their current curriculum as it gives a clearer understanding of the impact reflective writing has on pharmacy students' PCC skills or cultural competence. This review also gives some direction for implementing reflective writing to enhance the success rates of developing pharmacy students' PCC skills or cultural competence.

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Appendix A: Search strategy

PubMed: (((((Pharm*[Title/Abstract]) AND (student*[tiab] OR postgraduate*[tiab] OR graduate*[tiab] OR undergraduate*[tiab])) OR "Students, Pharmacy"[Mesh])) AND ("Curriculum"[Mesh] OR "Education, Pharmacy"[Mesh] OR education*[Title/Abstract] OR practice[Title/Abstract] OR Curricul*[Title/Abstract] OR course*[tiab])) AND (((reflect*[tiab] OR self-reflect*[tiab]) AND ("Writing"[Mesh] OR practic*[tiab] OR writ*[tiab] OR assignment*[tiab] OR essay*[tiab] OR blog*[tiab] OR narrative*[tiab] OR journal*[tiab] OR entr*[tiab] OR piece*[tiab] OR statement*[tiab] OR diar*[tiab] OR activit*[tiab] OR exercis*[tiab] OR paper*[tiab])) OR portf*[tiab] OR reaction* log[tiab] OR reaction* logs[tiab] OR minute paper*[tiab])

Embase: ('pharmacy students'/exp OR (pharm*:ti,ab AND (student*:ti,ab OR postgraduate*:ti,ab OR graduate*:ti,ab OR undergraduate*:ti,ab))) AND ('curriculum'/exp OR 'pharmacy education'/exp OR education*:ti,ab OR practice:ti,ab OR curricul*:ti,ab OR course*:ti,ab) AND ('reflection'/exp AND 'writing'/exp OR ((reflect* OR 'self-reflect*') NEAR/3 practic* OR writ* OR assignment* OR paper* OR essay* OR blog* OR narrative* OR journal* OR entr* OR piece* OR statement* OR diar* OR activit* OR

Spalding, E., & Wilson, A. (2002). Demystifying Reflection: A Study of Pedagogical Strategies That Encourage Reflective Journal Writing. *Teachers College Record - TEACH COLL REC*, **104**, 1393-1421. <https://doi.org/10.1111/1467-9620.00208>

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Wheeler, J. S., & Chisholm-Burns, M. (2018). The Benefit of Continuing Professional Development for Continuing Pharmacy Education. *Am J Pharm Educ*, **82**(3), 6461. <https://doi.org/10.5688/ajpe6461>

exercis*):ab,ti OR (portf*:ab,ti OR ((reaction* NEAR/3 log*):ab,ti) OR ((minute NEAR/3 paper*):ab,ti)

Scopus: TITLE-ABS-KEY ((pharm*) AND (student* OR postgraduate* OR graduate* OR undergraduate*)) AND TITLE-ABS-KEY (education* OR practice OR curricul* OR course*) AND TITLE-ABS-KEY (((reflect* OR self-reflect*) W/3 (practic* OR writ* OR assignment* OR essay* OR blog* OR narrative* OR journal* OR entr* OR piece* OR statement* OR diar* OR activit* OR exercis* OR paper*)) OR portf* OR (reaction* W/3 log*) OR (minute W/3 paper*))

PsycInfo: (Pharm* and (student* or postgraduate* or graduate* or undergraduate*)) .ti,ab. AND exp Curriculum/ or (education* or practice or Curricul* or course*).ti,ab. AND ((exp Reflectiveness/ or (reflect* or self-reflect*).ti,ab.) and (exp Journal Writing/ or exp Written Communication/ or (practic* or writ* or assignment* or essay* or blog* or narrative* or journal* or entr* or piece* or statement* or diar* or activit* or exercis* or paper*).ti,ab.)) or (portf* or reaction* w3 log* or minute w3 paper*).ti,ab.

CINAHL: ((MH "Students, Pharmacy") OR (TI Pharm* OR AB Pharm*) AND 9TI (student* OR postgraduate* OR graduate* OR undergraduate*) OR AB (student* OR postgraduate* OR graduate* OR undergraduate*))) AND ((MH "Education, Pharmacy") OR (MH "Curriculum+") OR TI (education* OR practice OR Curricul* OR course*) OR AB (education* OR practice OR Curricul* OR course*)) AND (((MH "Reflection") OR TI (reflect* OR self-reflect*) OR AB (reflect* OR self-reflect*)) AND ((MH "Writing+") OR TI (practic* OR writ* OR assignment* OR essay* OR blog* OR narrative* OR journal* OR entr* OR piece* OR statement* OR diar* OR activit* OR exercis* OR paper*) OR AB (practic* OR writ* OR assignment* OR essay* OR blog* OR narrative* OR journal* OR entr* OR piece* OR statement* OR diar* OR activit* OR exercis* OR paper*)) OR (MH "Portfolio+") OR TI (portf* OR (reaction* N3 log*) OR (minute N3 paper*)) OR AB (portf* OR (reaction* N3 log*) OR (minute N3 paper*)))

ERIC: (noft(Pharm* OR pharmaceutical* OR pharma*) AND noft(student* OR postgraduate* OR graduate* OR undergraduate*)) AND (MAINSUBJECT.EXACT("Curriculum") OR noft(education* OR practice OR Curricul* OR course*)) AND ((MAINSUBJECT.EXACT("Reflection") OR noft(reflect* OR self-reflect*)) AND (MAINSUBJECT.EXACT("Writing (Composition)") AND noft(practic* OR writ* OR assignment* OR essay* OR blog* OR narrative* OR journal* OR entr* OR piece* OR statement* OR diar* OR activit* OR exercis* OR paper*)) OR MAINSUBJECT.EXACT("Portfolios (Background Materials)") OR noft(portf* OR (reaction* NEAR/3 log*) OR (minute NEAR/3 paper*)))