Pharmacy Education (2026) 26(1) 195 - 206
https://doi.org/10.46542/pe.2026.261.195206

RESEARCH ARTICLE

Evaluating a first-exposure intercultural competence lecture in a Master of Pharmacy cohort: A cross-sectional survey

Atta Abbas Naqvi[1], Merhawi Samsom[1], Lucy Watson[2], Md. Ashraful Islam[3]

[1] School of Pharmacy, University of Reading, Reading, United Kingdom
[2] Global Academy, University of Reading, Reading, United Kingdom
[3] Department of Pharmacy Practice, College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia

Keywords
Cross-cultural healthcare
Cultural competence
Intercultural competence
Pharmacy education

Correspondence
Atta Abbas Naqvi
University of Reading
Reading
United Kingdom
a.a.naqvi@reading.ac.uk

Abstract

Background: The objective of this study was to evaluate an intercultural competency lecture delivered at the Reading School of Pharmacy and assess its impact on students' self-reported knowledge and perceived relevance to practice. **Methods:** A cross-sectional survey was conducted among MPharm students from September to December 2023 after an intercultural competency lecture. Students completed an anonymised Online Surveys® questionnaire with five-point Likert items (1 = strongly disagree to 5 = strongly agree) assessing clarity, learning outcomes, novelty, and relevance. The internal consistency was high (Cronbach's α = 0.942). SPSS (v. 25) was used for descriptive statistics, frequencies (%), and regression analysis. **Results:** A total of 70 out of 226 students participated in the survey, resulting in a 31% response rate. The majority were female (65.7%) and of Asian background (55.7%), with over half in Year 3 (60%) and attending lectures in person (68%). Most were home students (72.9%). Feedback indicated clarity ($\bar{x}$ = 3.86), achievement of learning outcomes ($\bar{x}$ = 3.83), novelty ($\bar{x}$ = 3.23), and relevance to practice ($\bar{x}$ = 3.75). Suggestions for future sessions included topics on racial biases, religion, women's health, and disability. **Conclusion:** Students found the intercultural competence lecture valuable but suggested enhancing it and integrating cultural competence more broadly into the MPharm programme.

Introduction

Cultural competence is a continuous process by which healthcare professionals strive to effectively work within clients' diverse backgrounds (Campinha-Bacote, 2002). It includes behaviours, attitudes, and policies among healthcare professionals that facilitate their work in cross-cultural healthcare settings (Walkowska *et al.*, 2023). The terms 'intercultural competence', 'cultural competence', and/or 'competency' are sometimes used synonymously in the health-related literature. There is no clear consensus on how these terms should be defined (Fleckman *et al.*, 2015). However, in the healthcare context, the 'Cultural Competence' model framework has been used by theorists for conceptualisation (Campinha-Bacote, 2002). The intercultural competence model is more relational in approach; it explains the process as the ability to communicate effectively in cross-cultural situations using one's own cultural knowledge, skills and attitudes (Deardorff, 2006; Fleckman *et al.*, 2015).

In healthcare, culturally competent care enables healthcare providers to better manage patients' needs and provide person-centred care. Knowledge of a patient's cultural background would enable a pharmacist to align care plans with the patient's lifestyle (Corsi *et al.*, 2019). Available evidence has shown that a lack of culturally competent care results in increased dissatisfaction, lower attendance at the clinics, and poorer attainment of health outcomes among ethnic minorities (Robinson-Barella *et al.*, 2023).

The UK is becoming more diverse. According to the Office for National Statistics (ONS) Census 2021 findings,

the population in all ethnic groups except for White, has increased since 2011 (Office for National Statistics, 2022). This diversity is also reflected in the ethnic distribution of the healthcare workforce. According to the General Pharmaceutical Council (GPhC), 42% of registered pharmacists in the UK identify with Black, Asian, and Mixed ethnic backgrounds (General Pharmaceutical Council, 2019). A multicultural society requires culturally competent pharmacists to effectively deliver healthcare services to all people. Being culturally competent means that pharmacists can provide care that is socially, linguistically, and culturally acceptable to the patients (Robinson-Barella *et al.*, 2023). Moreover, as higher education becomes transnational (TNE) and institutions try to internationalise their offerings to appeal to the international market (Dunne, 2011), educators are becoming increasingly aware of the importance of creating an 'intercultural curriculum' (Advance HE, 2025).

Some of the key global graduate competencies highlighted by the Advance HE include inculcating intercultural skills with an international outlook, collaboration and communication, and social responsibility. In today's world, a graduate must be able to appreciate global perspectives, demonstrate inclusivity, and work collaboratively while communicating effectively in diverse teams (Queen Mary University of London, n.d., and Advance HE, n.d.). Additionally, graduates must understand the broader impact of their actions on society and the environment (Advance HE, n.d.).

Therefore, to meet the contemporary employability and educational needs of pharmacy students, it is imperative to introduce educational materials and lectures aimed at familiarising them with intercultural competence at the university level, ensuring they develop cultural competence skills at the time of graduation. This would help students cultivate the 'graduate attributes' that are increasingly emphasised by UK universities as they seek to demonstrate their value to students (Normand & Anderson, 2017).

Available evidence highlights that cultural competence education has been embedded in pharmacy education globally, albeit at varying levels, which may mirror how it is conceptualised (Jarrar *et al.*, 2024). Much of the literature comes from the pharmacy schools in the United States, while some has been reported from Canada (Min *et al.*, 2020), Germany (Strelow *et al.*, 2021), Qatar (Wiby *et al.*, 2015), UAE (Hasan *et al.*, 2017), Australia (Lucas *et al.*, 2021), and New Zealand (Aspden *et al.*, 2017; Jarrar *et al.*, 2024). Bailey and colleagues (2021) embedded cultural competence as a standalone, elective course for pharmacy students, delivered through lectures and practice sessions with a focus on d/Deaf and hard-of-hearing communities, while others have developed it as a standalone and an integrated course. Educators in the US have taught this topic as part of a compulsory course and as an elective (Arif *et al.*, 2017; Arif *et al.*, 2019). Moreover, pharmacy educators have taught the concept generally (Wilby *et al.*, 2015; Aspden *et al.*, 2017; Chen *et al.*, 2021) and also in the context of specific diseases and medications (Boylan *et al.*, 2020), language and communication strategies (Hasan *et al.*, 2017; Strelow *et al.*, 2021), and native/special populations (Thomason *et al.*, 2013; Parkhill *et al.*, 2014; Clarke *et al.*, 2016; Min *et al.*, 2020; Lucas *et al.*, 2021).

There are no studies in UK pharmacy schools reporting how cultural competence education is conceptualised, delivered, or assessed. There is a need to better understand how cultural competence is conceptualised and taught in UK pharmacy programmes (Jarrar *et al.*, 2024). The UK pharmacy programme is coined as the 'Master of Pharmacy (MPharm) programme. The MPharm is an undergraduate Master's degree programme and is distinct from a traditional Master's in Science (MSc) programme. In the UK, it functions as a direct-entry professional degree and is the primary route to becoming a registered pharmacist (Sosabowski & Gard, 2008). This programme may differ from pharmacy education in other countries, where the entry-level qualification may be at the bachelor's or Doctor of Pharmacy (PharmD) level (Supapaan *et al.*, 2019).

Furthermore, there is a gap in the literature regarding the reporting of educational interventions and their effectiveness. Without this evidence, it would be impossible to evaluate the contents delivered and the effectiveness of the teaching approaches used in this educational endeavour. Additionally, a consensus definition of cultural competence is lacking in academic literature, which may explain the various ways the concept has been embedded in pharmacy curricula across the globe (Jarrar *et al*., 2024).

An initiative was undertaken at Reading School of Pharmacy to introduce intercultural competence education through a lecture, designed to familiarise the students with the concept and its significance in pharmacy practice. As future pharmacists, they will be involved in patient care. The School also offers placement opportunities for students enrolled in the MPharm programme across all years. This includes placement in the community and hospital pharmacies as well as general practice settings (Reading School of Pharmacy, 2024). The students in the MPharm programme will be expected to work with colleagues from different backgrounds and cultures in healthcare settings. This lecture on intercultural competence was

the first time these students were introduced to the topic. Research involving student feedback was necessary to assess its suitability and highlight areas for improvement.

The aim was to evaluate an intercultural competency lecture delivered at the Reading School of Pharmacy to determine whether it met students' expectations and effectively enhanced their knowledge of the topic.

Methods

Design, venue, and participants

A cross-sectional study was conducted to gather feedback using a questionnaire. The study was conducted at the Reading School of Pharmacy, University of Reading in the UK. It was conducted among students studying in the MPharm programme in Years 2 and 3. The survey was administered online using the Online Surveys® platform. All pharmacy students enrolled in Years 2 and 3 during the 2023/24 academic year, who attended the intercultural competence lecture in Spring term 2023, either in person or viewed the recorded lecture on Blackboard®, were eligible to participate. Students who had taken a break from their studies or were unable to progress and remained in Year 1 were not eligible.

Details of the session

A face-to-face single lecture on cultural competence was delivered as part of the compulsory modules for MPharm students in Years 2 and 3. The session aimed to enhance students' understanding of cultural competence within the context of pharmacy practice. The intervention was informed by Miller's Pyramid, targeting the 'Knows' and 'Knows How' levels of learning, and was conceptually guided by Campinha-Bacote's Framework for Cultural Competence. The learning objectives were to:

(1) describe the concept of cultural competence and recognise its historical development,

(2) discuss its relevance in pharmacy practice, and

(3) list the benefits of cultural competence in healthcare service delivery.

The session content included a review of the evolution and theoretical foundations of cultural competence, a discussion of evidence from literature, and a presentation of case studies illustrating cross-cultural communication challenges in healthcare. Teaching and learning strategies comprised didactic delivery supported by interactive discussion and application of examples. Educational materials included a Microsoft PowerPoint® presentation, which was recorded via YuJa® and made available through the institutional virtual learning environment (Blackboard®) for access. The slides were prepared using the university's official template, which is carefully designed to promote accessibility and support diverse learning needs (e.g., cream background, etc.).

The lecture was co-delivered by two instructors: the lead lecturer from Reading School of Pharmacy with a background in cultural competence in pharmacy and healthcare, and a second instructor from Global Academy at the University of Reading, with expertise in cultural studies. The teaching took place in a lecture hall at the School of Chemistry, Food and Pharmacy. The lecture slides were peer-reviewed by another staff member at the Global Academy to ensure quality and alignment with learning outcomes, and it was observed by the Chair of the School's Black Asian Minority Ethnic (BAME) Committee to monitor fidelity. No unplanned adaptations were required. Attendance was not formally recorded. Post-session feedback was collected from students to evaluate engagement and perceived learning value.

Sampling strategy and sample size

The study utilised convenience sampling to gather data from a large number of participants. The total number of students in Years 2 and 3 was 226. The sample size was calculated using an online sample size calculator, which determined that 143 responses were needed for a 5% margin of error and 95% confidence level. The study received 70 responses, resulting in a margin of error of 9.56%.

Research instrument

The online survey questionnaire included a participant information sheet, a consent form, and a demographic form. The demographic form collected information such as age, gender identity, student status, year of study, ethnicity, grade classification, and work experience. Participants were also asked whether they attended the intercultural competence lecture in person or viewed the recording. In addition, the questionnaire included questions about exposure to cultural education, cultural encounters, international experiences, and preference for working with culturally different individuals.

The questionnaire also included Likert-scale questions to gather feedback on the lecture. Responses were rated on a 5-point Likert scale (1= Strongly disagree to 5= Strongly agree) and covered various aspects, including clarity of learning objectives, achievement of learning objectives within lecture time, novelty of

information, appropriateness of knowledge for the year of study, organisation, quantity and design of information in the lecture, relevance to pharmacy practice, ability to meet student expectations, and stimulation of interest among students.

Additionally, participants were asked to indicate the usefulness of the information, the lecture's contribution to their knowledge, and their likelihood of seeking further educational materials on cultural competence. Lastly, they were asked to suggest three topics within cultural competence that they would like to explore further. The questionnaire was piloted in 3 pharmacy students and 2 pharmacy educators before data collection and was found suitable for use.

Data collection and analysis

The data collection process began with an invitation email containing a survey link sent to participants via the university's student mailing lists. No follow-ups were conducted after survey completion. The data was collected from September 2023 to December 2023.

The survey data were analysed using IBM SPSS® version 25 statistics software. Descriptive statistics, including mean, median, standard deviation, and interquartile range, were used to summarise lecture feedback. Demographic information was reported using sample count (N) and frequency (%). A multiple linear regression model was developed to identify the determinants of positive feedback, considering students' demographics as independent variables (IVs). The cumulative mean score from the ten feedback statements was included as a dependent variable (DV) to assess whether any student demographic factor contributed to the overall mean score. There was no missing data.

Ethics, participants' consent, and reporting

The study was approved by the School Research Ethics Committee (SREC) at the School of Pharmacy, University of Reading (SREC approval number 42/2023) on Aug 22, 2023. Participants were required to provide electronic consent before proceeding with the survey. The reporting adhered to the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) checklist (von Elm *et al.*, 2008).

Results

Demographic information of participants

A total of 70 participants responded to the survey, giving a 31% response rate. Most participants were in the 21 – 23 year age group (N = 33, 47%), identified as females (N = 46, 65.7%), belonged to Asian heritage (N = 39, 55.7%), indicated their status as home students (N = 51, 72.9%), and attended the lecture in-person (N = 48, 68.6%). The demographic information is presented in Table I.

Table I: Demographic information (N = 70)

Variables	N	(%)
Age		
18-20	22	31.4
21-23	33	47.1
24 and above	14	20
Prefer not to say	1	1.4
Gender		
Male	24	34.3
Female	46	65.7
Ethnicity*		
Asian	39	55.7
Black	10	14.3
Mixed	4	5.7
White	7	10
Prefer not to say	2	2.9
Any other ethnic groups	8	11.4
Year of study		
Year 2	28	40
Year 3	42	60
Grade classification		
1st class	10	14.3
2.1 class	11	15.7
2.2 class	8	11.4
3rd class	1	1.4
Other	5	7.1
Prefer not to say	35	50
Lecture engagement		
Attended in-person	48	68.6
Watched recording	16	22.9
Both	6	8.6
Student status		
International	17	24.3
Home	51	72.9
Prefer not to say	2	2.9
Lived outside the UK for 6 months or more		
Yes	18	25.7
No	52	74.3
Worked outside the UK		
Yes	11	15.7
No	59	84.3

***Asian: Asian British, Indian, Pakistani, Bangladeshi, Chinese, Arab OR Any other Asian background; Black: Black British, Caribbean, or African, OR Any other Black, Black British, or Caribbean background; Mixed: multiple ethnic groups, White and Black Caribbean, White and Black African, White and Asian, OR any other Mixed or multiple ethnic background; White: White, English, Welsh, Scottish, Northern Irish or British, Irish, Gypsy or Irish Traveller, Roma, OR any other White background

Experiences and attitudes toward cultural diversity

Most participants mentioned caring for culturally diverse patients during MPharm placements (N = 55, 78.6%) and had experience of dealing with culturally diverse people in their personal life (N = 61, 87.1%). Students' experiences and attitudes toward cultural diversity are presented in Table II.

Table II: Experiences and attitudes cultural diversity

Variables	N	%
Studied anything related to cultural competence during pharmacy education		
Yes	27	38.6
No	20	28.6
Not sure	23	32.9
Researched cultural competence during free time outside of university education		
Yes	20	28.6
No	44	62.9
Not sure	6	8.6
Taken care of culturally diverse patients during MPharm placements		
Yes	55	78.6
No	10	14.3
Not sure	5	7.1
Dealt with culturally diverse people in my personal life. For example: having a partner, relative, and/or friend from a different culture		
Yes	61	87.1
No	7	10
Not sure	2	2.9
Preference to work with culturally diverse people		
Prefer to work with people of the same culture	2	2.9
Prefer to work with culturally diverse people	18	25.7
Do not have a preference	50	71.4

Participants' feedback on the intercultural competence lecture

Table III presents the questions asked about the lecture, capturing participants' opinions using a five-point Likert scale ranging from 1 = Strongly disagree to 5 = Strongly agree. It shows the frequency and percentage of the participants who selected each response. Half of the participants (N = 35, 50%) agreed that the learning objectives were clear, knowledge was delivered at an appropriate level, the lecture was organised, and delivered in a manner to facilitate understanding. More than half (>50%) agreed that lecture objectives were achieved within the stated time, the information delivered was of quality, the lecture met student expectations, and the contents seemed helpful to practice. 37.1% (N = 26) agreed that the information was new to them, was useful, but needed further improvement. 30% agreed that the information stimulated their interest in the subject. 35.7% (N = 25) mentioned that there was a 50% improvement in their knowledge by the lecture as compared to what they had before the session. More than half (N = 41, 58.6%) mentioned feeling somewhat interested in the subject after the lecture.

Table III: Assessment of lecture outcomes and content quality based on participants' responses

Feedback statements	Strongly disagree	Disagree	No opinion	Agree	Strongly agree	Mean(SD)*
Learning objectives were clear	3 (4.3%)	5 (7.1%)	9 (12.9%)	35 (50.0%)	18 (25.7%)	3.86 (1.03)
Objectives were achieved in time	2 (2.9%)	6 (8.6%)	9 (12.9%)	38 (54.3%)	15 (21.4%)	3.83 (0.96)
Information was new	6 (8.6%)	16 (22.9%)	13 (18.6%)	26 (37.1%)	9 (12.9%)	3.23 (1.19)
The level of knowledge was appropriate for the year of study	2 (2.9%)	3 (4.3%)	13 (18.6%)	35 (50.0%)	17 (24.3%)	3.89 (0.93)
The lecture was well-organised	4 (5.7%)	1 (1.4%)	16 (22.9%)	35 (50.0%)	14 (20%)	3.77 (0.98)
The lecture design made it easier to understand the key points	3 (4.3%)	7 (10.0%)	10 (14.3%)	35 (50.0%)	15 (21.4%)	3.74 (1.05)
The information covered was appropriate	3 (4.3%)	1 (1.4%)	13 (18.6%)	39 (55.7%)	14 (20.0%)	3.86 (0.91)
The lecture met expectations	3 (4.3%)	3 (4.3%)	14 (20.0%)	39 (55.7%)	11 (15.7%)	3.74 (0.93)
The lecture stimulated interest	4 (5.7%)	10 (14.3%)	23 (32.9%)	21 (30.0%)	12 (17.1%)	3.39 (1.11)
The lecture will aide practice	3 (4.3%)	1 (1.4%)	10 (14.3%)	37 (52.9%)	19 (27.1%)	3.75 (0.93)
	Useless	**Somewhat Useful but needs improvement**	**Not sure**	**Extremely useful but needs improvement**	**Extremely useful with no improvement needed**	--
The usefulness of the lecture in the context of knowledge and information	-	13 (18.6%)	19 (27.1%	26 (37.1%)	12 (17.1%)	--
The usefulness of the lecture in practice	-	12 (17.1%)	12 (17.1%)	31 (44.3%)	15 (21.4%)	--
	No improvement	**10-30 %**	**50%**	**70-90%**	**100%**	--
Improvement in knowledge contributed by the lecture compared to prior knowledge	3 (4.3%)	27 (38.6%)	25 (35.7%)	14 (20%)	1 (1.4%)	--
	Not at all interested	**A little interested**	**Somewhat interested**	**Very interested**	**Extremely interested**	--
Did your interest improve after the lecture?	2 (2.9%)	14 (20%)	41 (58.6%)	12 (17.1%)	1 (1.4%)	--
	Not at all	**Less likely**	**Maybe**	**Most likely**	**Surely**	--
How likely are you to read/search educational materials on cultural competence after this lecture?	8 (11.4%)	14 (20%)	35 (50%)	11 (15.7%)	2(2.9%)	--

*Cronbach's α = 0.942

Participants were asked to select up to three topics from the list available in Table IV that they believed should be included. This was a multi-select question, and the most frequently selected topic was ethnic disparities (N = 43, 61.4%), followed by religion (N = 37, 52.9%) and women's health (N = 29, 41.4%). The details are presented in Table IV.

Table IV: List of topics for inclusion in intercultural competence education (multiselect option)

Topics	N (%)
Racial bias in medicine/ ethnic disparities	43 (61.4%)
Religions in medicine and their impact on healthcare	37 (52.9%)
Needs of women patients (birth control, sexual health, pregnancy, breastfeeding, etc.)	29 (41.4%)
Patients with disabilities/ hard of hearing/ visual impairment	26 (37.1%)
Use of herbal products/ Chinese/ Greek/ Indian/ Islamic medicines/ traditional and complementary medicines	26 (37.1%)
Socioeconomic factors, e.g., financial and housing instability, social determinants of health, & patient care	25 (35.7%)
Country-specific cultures and their impact on healthcare	18 (25.7%)
Needs of neurodiverse patients	10 (14.3%)
Needs of LGBTQ+ patients	6 (8.6%)
Colonial history of medicine	4 (5.7%)

LGBTQ+: Lesbian, Gay, Bisexual, Transgender, Queer, and other identities not explicitly listed

Predictors of agreement with quality statements

A linear regression analysis was performed to assess if any independent variable (IV) contributed to the overall mean score for the quality statements. The results showed that only the multiple regression analysis was significant concerning lecture engagement (IV). Attending the lecture in-person was associated with a 0.401 increase in the overall mean score for agreement with statements. Other IVs were significant in simple regression but became non-significant in multiple regression analyses (Table V).

Table V: Linear regression analysis

Characteristics	Simple regression		Multiple regression		
	Coefficient (β)	*p*-value	Coefficient (β)	*p*-value	VIF
Age					
Others	---	---	---	---	---
21-23	-0.372	0.056	-0.246	0.233	1.24
Gender					
Male	---	---	---	---	---
Female	0.181	0.382	---	---	---
Ethnicity*					
Others	---	---	---	---	---
Asian	0.141	0.475	---	---	---
Year of study					
Year 3	---	---	---	---	---
Year 2	0.276	0.166	0.128	0.540	1.23
Grade classification					
Others	---	---	---	---	---
1st class	-0.568	0.040	-0.491	0.068	1.02
Lecture engagement					
Others		---	---	---	---
Attended in-person	---	0.024	0.401	0.049	1.02
Student status					
Others	---	---	---	---	---
Home	-0.151	0.496	---	---	---
Lived outside the UK for 6 months or more					
Yes	---	---	---	---	---
No	0.111	0.621	---	---	---
Worked outside the UK					
Yes	---	---	---	---	---
No	-0.097	0.719	---	---	---

Multiple regression model applied. Model fitness tested by: ANOVA ($F = 3.148$, $p < 0.05$); $R^2 = 0.162$ and adjusted $R^2 = 0.112$.

Discussion

The teaching of cultural competence was primarily delivered through a lecture integrated into the curriculum during the early stages of the pharmacy degree. Since this was the first stand-alone session on the topic, a lecture format was chosen as it allowed for the efficient delivery of conceptual information to a large cohort of students. Most participants reported limited exposure to cultural competence during their education. This could be attributed to several factors; for instance, students may not have fully recognised how cultural competence is integrated and taught across different courses. For example, in pharmaceutical care, students learn that pharmacists must appreciate their clients' backgrounds when managing care plans. However, such topics may not explicitly reference cultural competence, as it is often embedded within broader clinical scenarios rather than being distinctly highlighted. Students mentioned that they had a general understanding of cultural competence; however, the lecture allowed them to delve deeper into the concept. They noted that the lecture helped them understand how cultural competence could be applied in cross-cultural scenarios and enabled them to recognise their biases. A similar finding was reported in a study among pharmacy students in Qatar, where students acknowledged limited awareness of cultural differences, including community norms, foreign languages, and dialects (Mukhalalati *et al.*, 2020). Some studies have used written feedback to gauge students' self-awareness of biases. Poirier et al. reported that the mean score for students indicated that the course improved their ability to recognise biases (Poirier *et al.*, 2009).

Most participants reported interacting with culturally diverse patients during their clinical training. However, it is important to note that the study did not specifically inquire whether these encounters occurred during university-arranged placements or through other clinical experiences. Such placements provide valuable opportunities for the students to develop their intercultural competencies. Students are encouraged to reflect on their experience and submit a reflection report, which is assessed. Evidence suggests that this type of experiential learning enhances students' understanding of patients, as they encounter individuals in real-world settings and strive to provide culturally competent care that is aligned with the individuals' backgrounds. A placement is a practice-based experience that offers hands-on learning in a clinical environment (General Medical Council, 2024).

Furthermore, slightly more than a quarter of participants reported a preference for working with culturally diverse people, while the majority were not sure. A possible explanation for this could be that cultural competence was delivered as a stand-alone lecture, with limited emphasis on cross-cultural collaboration. As a result, the session may not have significantly influenced student's interest in working with culturally diverse people. Olukotun and colleagues highlighted that a stand-alone undergraduate course may not be sufficient to foster sustained interest in the topic. However, courses that integrate cultural diversity have the potential to increase awareness of the topic (Olukotun *et al.*, 2018). Similarly, in a study by Mukhalalati and colleagues, pharmacy students were observed to prefer communication with instructors from similar cultural backgrounds (Mukhalalati *et al.*, 2020). This shows that a more interactive and sustained teaching approach is needed to increase student interest in working with culturally diverse people. Most participants indicated that they had personally interacted with culturally diverse people, including partners, relatives, or friends. Such experiences may contribute to their understanding and appreciation of cultural competence in healthcare settings, as they may help foster empathy and communication skills.

Regarding lecture feedback, most participants agreed that the learning objectives (LOs) were clear and achieved within the allocated time, suggesting that the lecture was concise and effectively conveyed the intended LOs. They agreed that the information presented was new, the level of knowledge was appropriate, and the lecture met their expectations. Participants found the lecture sufficient and effective, without feeling overwhelmed. The GPhC considers Miller's triangle as a framework for determining the level of knowledge required in the MPharm programme (Miller, 1990). Since this lecture was delivered for the first time, it was designed at the first level of Miller's Triangle, which may explain why participants perceived it as appropriately structured.

Most of the participants agreed that the lecture was well-organised, and its design facilitated understanding of key points. This highlights the logical structure and appropriate style of the lecture, which enhanced comprehension and made the material more accessible to students. The lecture included slides outlining the LOs, which were explicitly mentioned, allowing students to follow the contents. Separate headings were added to highlight the objectives, and the LOs were reiterated at the end of the session for reinforcement. The presentation was designed using the university's official template, which is accessible to students with diverse learning needs (University of Reading, 2020).

Participants agreed that the content was relevant, applicable to real-world scenarios, and beneficial for their future practice. Slightly less than half of the students also agreed that the lecture stimulated their interest in the subject. Overall, the survey data indicate

that the content was well received, and students regarded it as applicable in real-life scenarios. Participants were asked to rate the usefulness of the lecture both in general and within the context of pharmacy. Most participants rated it as useful.

The advantages of incorporating a workshop into a session on cultural competence are plenty. This interactive learning method encourages greater engagement through role-play activities. It allows the participants to apply their knowledge in practice. In this type of learning method, participants can work either in groups or individually, fostering understanding and empathy through interaction rather than rote memorisation. However, workshops are best suited for small-group teaching (Fatumo *et al.*, 2014). Implementing this approach would require the cohort to be divided into smaller groups and conducting the workshop in multiple iterations. A combination of lectures and practical workshops would allow students to apply theoretical learning from the lecture to a cross-cultural situation presented in the workshop. Regarding placements, they are already incorporated into the MPharm programme, and most venues provide opportunities for students to engage in the cross-cultural practice.

According to Miller's pyramid of clinical competence (Miller, 1990), this lecture primarily addressed the lower tiers of learning, i.e., 'knows' and 'knows how', by introducing concepts and demonstrating their application through examples. To advance towards 'shows how' and 'does', future curriculum design should incorporate interactive and practice-based components, such as small-group workshops, role-play or simulation exercises, OSCE stations, and placement-based assessments. These approaches would enable students to apply cultural competence in authentic clinical contexts and demonstrate skills beyond theoretical understanding.

Participants were presented with a list of topics and asked to select up to three topics they believed should be included in cultural competence education. Among the topics presented, "Racial bias in medicine/ethnic disparities" emerged as the most frequently chosen. This highlights a recognition of the importance of addressing racial biases and understanding ethnic disparities in healthcare. Ethnic disparities in healthcare access and outcomes can have profound implications for individuals' well-being. Evidence highlights a gap in health outcomes and access to healthcare between the majority population and ethnic minorities. Recognising and addressing ethnic disparities is crucial in promoting fairness and equity in healthcare delivery, ultimately leading to better health outcomes for all individuals.

The second most chosen topic was, 'religions in medicine and their impact on healthcare", indicating participants' recognition of the influence of religious beliefs on treatment. Participants acknowledged the importance of cultural sensitivity in addressing religious diversity within healthcare settings. Previous studies have shown that patients with severe illnesses may avoid certain medicines due to religious beliefs (Sattar *et al.*, 2004). Another example is the management of medications during Ramadan. Healthcare professionals have faced challenges in managing medication regimens for patients with chronic diseases who observe fasting. They must counsel and adjust patients' medication schedules to align with fasting practices while ensuring medication adherence (Grindrod & Alsabbagh, 2017). Including this topic in the lecture would help students develop culturally competent communication skills and promote personalised care (Corsi *et al.*, 2019).

Other topics, such as the needs of LGBTQIA+ persons, patients with disabilities, and sign language users, also received notable consideration, highlighting the diverse range of essential topics. Pharmacy students have expressed low confidence in providing care to these populations and supporting the integration of relevant educational material into the curriculum (Leach & Layson-Wolf, 2016; Llayton & Caldas, 2020; Llayton *et al.*, 2022). In the UK, MPharm programmes often contain minimal content on these topics, leaving students feeling unprepared to provide adequate care (Mawdsley & Willis, 2023). In addition, pharmacists have reported challenges in communicating with deaf, deaf/blind, or hard-of-hearing patients (Ferguson & Shan, 2016; Chong *et al.*, 2021). A study exploring the barriers to caring for individuals from this group identified several key issues. These included pharmacists assuming that the individual can hear or understand English fluently, failing to adjust their speaking volume when communicating, and prioritising clients who can hear over deaf clients. It shows that pharmacists may lack awareness of deaf culture and the cultural competence needed to effectively support this population (Lim *et al.*, 2024).

Limitations

This study has several limitations. It was conducted at a single institution using convenience sampling, which limits generalisability. The response rate was modest (31%), introducing potential non-response bias, as those with stronger views on cultural competence may have been more likely to respond. The data were self-reported and collected only after the lecture, without pre-/ post-comparison, making it impossible to infer learning gain. Social desirability bias may also have influenced students to provide favourable responses. In addition, the regression model was exploratory, had non-significant results, and was underpowered to

detect small effects, so findings should be interpreted cautiously.

Conclusion

The positive feedback suggests that the students perceived the lecture as a useful introduction to cultural competence education. Participants recommended the inclusion of additional topics to enhance relevance and engagement. These self-reported perceptions provide preliminary insights that can inform the refinement and gradual expansion of cultural competence education within the pharmacy curriculum.

Conflict of interest

The authors declare no conflict of interest.

Source of funding

This study was funded by the Reading School of Pharmacy.

Acknowledgment

The authors would like to thank Joan McCormack, who co-delivered the session.

Data availability statement

Data supporting the results reported in this paper are openly available from the University of Reading Research Data Archive at https://doi.org/10.17864/1947.001507

Additional information

Part of the findings were presented as a poster abstract at the Pharmacy Education Conference 2024 on the 24th of June 2024 at the University of Manchester in Manchester, UK.

References

Advance HE. (2025). *The intercultural curriculum*. https://www.advance-he.ac.uk/scotland/thematic-series/intercultural-curriculum

Advance HE. (n.d.). *Rabdan Academy pioneers innovative approach to graduate skills development*. https://www.advance-he.ac.uk/knowledge-hub/rabdan-academy-pioneers-innovative-approach-graduate-skills-development

Arif, S., Cryder, B., Mazan, J., Quiñones-Boex, A., & Cyganska, A. (2017). Using patient case video vignettes to improve students' understanding of cross-cultural communication. *American Journal of Pharmaceutical Education*, **81**(3), 56. https://doi.org/10.5688/ajpe81356

Arif, S., Wang, S., Lakada, I. Y., & Lee, J. Y. (2019). An elective course to train student pharmacists to provide culturally sensitive health care. *American journal of pharmaceutical education*, **83**(8), 7027. https://doi.org/10.5688/ajpe7027

Aspden, T., Butler, R., Heinrich, F., Harwood, M., & Sheridan, J. (2017). Identifying key elements of cultural competence to incorporate into a New Zealand undergraduate pharmacy curriculum. *Pharmacy Education*, **17**. https://pharmacyeducation.fip.org/pharmacyeducation/article/view/477

Bailey, N., Kaarto, P., Burkey, J., Bright, D., & Sohn, M. (2021). Evaluation of an American Sign Language co-curricular training for pharmacy students. *Currents in pharmacy teaching & learning*, **13**(1), 68–72. https://doi.org/10.1016/j.cptl.2020.08.002

Boylan, P. M., Murzello, A., Parmar, J., & Chow, N. K. (2020). Integration of Latin American complementary and alternative medicine topics into a Doctor of Pharmacy curriculum and survey of student attitudes and behaviors. *Journal of medical education and curricular development*, **7**, 2382120520904121. https://doi.org/10.1177/2382120520904121

Campinha-Bacote, J. (2002). The process of cultural competence in the delivery of healthcare services: A model of care. *Journal of Transcultural Nursing*, **13**(3), 181–184. https://doi.org/10.1177/10459602013003003

Chen, A. M. H., Cailor, S. M., Wicker, E., Harper, N. G., Franz, T. T., & Pahl, B. (2020). Integrating Health Literacy and Cultural Competency Concepts Across the Doctor of Pharmacy Curriculum. *American journal of pharmaceutical education*, **84**(10), ajpe7764. https://doi.org/10.5688/ajpe7764

Chong, E. Y., Jacob, S. A., Ramadas, A., Goh, P. H., & Palanisamy, U. D. (2021). Assessment of community pharmacists' communication and comfort levels when interacting with Deaf and hard of hearing patients. *Pharmacy practice*, **19**(2), 2274. https://doi.org/10.18549/PharmPract.2021.2.2274

Clarke, C., Sedlacek, R. K., & Watson, S. B. (2016). Impact of a simulation exercise on pharmacy student attitude toward poverty. *American Journal of Pharmaceutical Education*, **80**(2), 21. https://doi.org/10.5688/ajpe80221

Corsi, M. P., Jackson, J. D., & McCarthy, B. C., Jr. (2019). Cultural competence considerations for health-system pharmacists. *Hospital Pharmacy*, **54**(6), 385–388. https://doi.org/10.1177/0018578718809259

Deardorff, D. K. (2006). Identification and assessment of intercultural competence as a student outcome of internationalization. *Journal of Studies in International Education*, **10**(3), 241–266. https://doi.org/10.1177/1028315306287002

Dunne, C. (2011). Developing an intercultural curriculum within the context of the internationalisation of higher education: Terminology, typologies and power. *Higher Education Research & Development*, **30**(5), 609–622. https://doi.org/10.1080/07294360.2011.598451

Fatumo, S., Shome, S., & Macintyre, G. (2014). Workshops: a great way to enhance and supplement a degree. *PLoS computational biology*, **10**(2), e1003497. https://doi.org/10.1371/journal.pcbi.1003497

Ferguson, M. C., & Shan, L. (2016). Survey evaluation of pharmacy practice involving Deaf patients. *Journal of Pharmacy Practice*, **29**(5), 461–466. https://doi.org/10.1177/0897190014568379

Fleckman, J. M., Dal Corso, M., Ramirez, S., Begalieva, M., & Johnson, C. C. (2015). Intercultural competency in public health: A call for action to incorporate training into public health education. *Frontiers in public health*, **3**, 210. https://doi.org/10.3389/fpubh.2015.00210

General Medical Council. (2024). *Introduction to our guidance on undergraduate clinical placements: The role of clinical placements and those involved*. https://www.gmc-uk.org/education/standards-guidance-and-curricula/guidance/undergraduate-clinical-placements/guidance-on-undergraduate-clinical-placements/introduction

General Pharmaceutical Council. (2019). *GPhC survey of registered pharmacy professionals*. https://www.pharmacyregulation.org/about-us/publications-and-insights/research-data-and-insights/gphc-survey-registered-pharmacy-professionals-2019

Grindrod, K., & Alsabbagh, W. (2017). Managing medications during Ramadan fasting. *Canadian Pharmacists Journal/Revue des Pharmaciens du Canada*, **150**(3), 146–149. https://doi.org/10.1177/1715163517700840

Hasan, S., Tarazi, H. M. K., & Hilal, H. D. A. (2017). Enhancing student communication skills through Arabic language competency and simulated patient assessments. American *Journal of Pharmaceutical Education*, **81**(4), 76. https://doi.org/10.5688/ajpe81476

Jarrar, R., Lim, R., Richardson, C. L., Naqvi, A. A., Rathbone, A. P., & Lau, W. M. (2024). How cultural competence is conceptualised, developed, and delivered in pharmacy education: A systematic review. *International Journal of Clinical Pharmacy*, **46**(1), 40–55. https://doi.org/10.1007/s11096-023-01644-3

Leach, C., & Layson-Wolf, C. (2016). Survey of community pharmacy residents' perceptions of transgender health management. *Journal of the American Pharmacists Association: JAPhA*, **56**(4), 441–445. https://doi.org/10.1016/j.japh.2016.03.008

Lim, T., Tsai, M., Reyes, A., Kapanen, A., & D'Amato, F. (2024). Deaf, deaf-blind, and hard of hearing needs and perceptions of community pharmacy services. *Canadian Pharmacists Journal / Revue des Pharmaciens du Canada*, **158**(2), 90–97. https://doi.org/10.1177/17151635241291863

Llayton, C. K., & Caldas, L. M. (2020). Strategies for inclusion of lesbian, gay, bisexual, transgender, queer, intersex, and asexual (LGBTQIA+) education throughout pharmacy school curricula. *Pharmacy practice*, **18**(1), 1862. https://doi.org/10.18549/PharmPract.2020.1.1862

Llayton, C., Wagner, T. D., Anderson, A. N., Crawford, A. N., Donohoe, K. L., Matulewicz, A. T., & Caldas, L. M. (2022). Introducing LGBTQIA+ Patient care to pharmacy students through laboratory-based exercises. *American Journal of Pharmaceutical Education*, **86**(6), 8569. https://doi.org/10.5688/ajpe8569

Lucas, C., Aly, M., & Power, T. A. I. (2021). Clinical partners' reflections on Indigenous curricula in health education and the development of a pre-clinical placement student toolkit. *Reflective Practice*, **22**(2), 263–277. https://doi.org/10.1080/14623943.2021.1879037

Mawdsley, A. & Willis, S. C. (2023, March). Undergraduate pharmacy education must become more inclusive of LGBTQIA+ people. *The Pharmaceutical Journal***, 310**(7971). https://doi.org/10.1211/PJ.2023.1.179170

Miller G. E. (1990). The assessment of clinical skills/competence/performance. *Academic Medicine: Journal of the Association of American Medical Colleges*, **65**(9 Suppl), S63–S67. https://doi.org/10.1097/00001888-199009000-00045

Min, J., Albon, S., Leung, L., & Clarke, A. (2020). Creating a pharmacy elective course in Indigenous health. *Currents in Pharmacy Teaching and Learning*, **12**(8), 1004–1013. https://doi.org/10.1016/j.cptl.2020.04.010

Mukhalalati, B., Shahrour, M., Rabie, S., Awaisu, A., Elshami, S., & Alali, F. (2020). Cultural awareness and competence of pharmacy educators and learners from the perspective of pharmacy students at Qatar University: A mixed-methods approach. *PLOS ONE*, **15**(12), e0243095. https://doi.org/10.1371/journal.pone.0243095

Normand, C., & Anderson, L. (Eds.). (2017). *Graduate attributes in higher education: Attitudes on attributes from across the disciplines* (1st ed.). Routledge. https://doi.org/10.4324/9781315559186

Office for National Statistics. (2022). *Ethnic group, England and Wales: Census 2021*. https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/ethnicity/bulletins/ethnicgroupenglandandwales/census2021

Olukotun, O., Mkandawire-Vahlmu, L., Kreuziger, S. B., Dressel, A., Wesp, L., Sima, C., Scheer, V., Weitzel, J., Washington, R., Hess, A., Kako, P., & Stevens, P. (2018). Preparing culturally safe student nurses: An analysis of undergraduate cultural diversity course reflections. *Journal of Professional Nursing: Official Journal of the American*

Association of Colleges of Nursing, **34**(4), 245–252. https://doi.org/10.1016/j.profnurs.2017.11.011

Parkhill, A. L., Mathews, J. L., Fearing, S., & Gainsburg, J. (2014). A transgender health care panel discussion in a required diversity course. *American Journal of Pharmaceutical Education*, **78**(4), 81. https://doi.org/10.5688/ajpe78481

Poirier, T. I., Butler, L. M., Devraj, R., Gupchup, G. V., Santanello, C., & Lynch, J. C. (2009). A cultural competency course for pharmacy students. *American Journal of Pharmaceutical Education*, **73**(5), 81. https://doi.org/10.5688/aj730581

Queen Mary University of London. (n.d.). *Queen Mary graduate attributes*. https://www.qmul.ac.uk/queenmaryacademy/educators/resources/graduate-attributes

Reading School of Pharmacy. (2024). *How you'll study your degree*. https://www.reading.ac.uk/pharmacy/mpharm/how-youll-study-your-pharmacy-degree

Robinson-Barella, A., Takyi, C., Chan, H. K. Y., & Lau, W. M. (2023). Embedding cultural competency and cultural humility in undergraduate pharmacist initial education and training: A qualitative exploration of pharmacy student perspectives. *International Journal of Clinical Pharmacy*, **46**, 166–176. https://doi.org/10.1007/s11096-023-01665-y

Sattar, S. P., Ahmed, M. S., Madison, J., Olsen, D. R., Bhatia, S. C., Ellahi, S., Majeed, F., Ramaswamy, S., Petty, F., & Wilson, D. R. (2004). Patient and physician attitudes to using medications with religiously forbidden ingredients. *The Annals of pharmacotherapy*, **38**(11), 1830–1835. https://doi.org/10.1345/aph.1E001

Sosabowski, M. H., & Gard, P. R. (2008). Pharmacy education in the United Kingdom. *American journal of pharmaceutical education*, **72**(6), 130. https://doi.org/10.5688/aj7206130

Strelow, K. R., Bahadır, Ş., Stollhof, B., Heeb, R. M., & Buggenhagen, H. (2021). Patient interviews in interprofessional and intercultural contexts (PinKo) - project report on interdisciplinary competence development in students of medicine, pharmacy, and community interpreting. *GMS journal for medical education*, **38**(3), Doc67. https://doi.org/10.3205/zma001463

Supapaan, T., Low, B. Y., Wongpoowarak, P., Moolasarn, S., & Anderson, C. (2019). A transition from the BPharm to the PharmD degree in five selected countries. *Pharmacy practice*, **17**(3), 1611. https://doi.org/10.18549/PharmPract.2019.3.1611

University of Reading. (2020). *New accessible Microsoft Word and PowerPoint templates*. https://archive.reading.ac.uk/staff-news/2020/January/spsn-833491.html

von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., & Vandenbroucke, J. P. (2008). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: Guidelines for reporting observational studies. *Journal of Clinical Epidemiology*, **61**(4), 344–349. https://doi.org/10.1016/j.jclinepi.2007.11.008

Walkowska, A., Przymuszała, P., Marciniak-Stępak, P., Nowosadko, M., & Baum, E. (2023). Enhancing cross-cultural competence of medical and healthcare students with the use of simulated patients: A systematic review. *International Journal of Environmental Research and Public Health*, **20**(3), 2505. https://doi.org/10.3390/ijerph20032505

Wilby, K. J., Taylor, J., Khalifa, S. I., & Jorgenson, D. (2015). A course-based cross-cultural interaction among pharmacy students in Qatar and Canada. *American journal of pharmaceutical education*, **79**(2), 26. https://doi.org/10.5688/ajpe79226