

Objective Structured Clinical Examination (OSCE) in assessing pharmacy students' competence of asthma management in English and Arabic languages

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Abstract

Introduction: Tools to assess knowledge, communication and clinical skill of pharmacy students providing linguistically competent patient care are needed. OSCE represents a well-established tool.

Objective: To develop an OSCE assessment of student skill in asthma management in English and Arabic, and to compare students' performance in the OSCE to traditional assessments.

Methods: A blueprint was constructed to outline competencies, objectives, case scenarios, evaluations and logistics during OSCE assessments.

Results: All 120 enrolled students participated. Students achieved better average scores in OSCE assessments (74.1%) than end of semester final examination (68.6%) and overall course score (72.9%). Overall, students did better in communication-type questions and general assessments rather than individualised patient assessment. Students evaluated their experience and were mostly satisfied.

Conclusions: An OSCE assessment of students' competence in asthma management administered in English and Arabic was introduced successfully. The assessment raised awareness towards introduction of Arabic language content to the curriculum.

Keywords: *Assessment, Cultural Competence, Language Competence, Objective Structured Clinical Examination (OSCE), Pharmacy Education*

Introduction

The Center for the Advancement of Pharmaceutical Education (CAPE) outcomes recommend that pharmacy curricula teach students to provide "culturally and linguistically appropriate pharmaceutical care services to diverse patient populations" (CAPE, 2013). Cultural competence is defined as "a set of congruent behaviours, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross-cultural situations" (Cultural and Linguistic Competency, 2011). Culturally competent care has been linked to improved health outcomes and elimination of health disparities (O'Connell *et al.*, 2007). As an integral component to cultural competency is the knowledge of language (Vyas & Caligiuri, 2010; Smith *et al.*, 2011; Okoro *et al.*, 2012). Patients may feel powerless if they cannot communicate with their healthcare provider and the healthcare provider may feel helpless if he/she cannot communicate with the patient (Vyas & Caligiuri, 2010). One study reported that in the absence of interpreter services, non-English speaking has been shown to be an

increased risk for medication errors in the United States (The Access Project, 2002), hence, knowledge of language is imperative to effective communication and provision of health care. Pharmacy education should train and prepare students to provide care to culturally and linguistically diverse patients (Assemi *et al.*, 2004; Shaya & Gbarayor, 2006; Vess Halbur & Halbur, 2008).

In health professions education, there is a need to train future professionals for real life experiences, hence, more emphasis has been put on performance-based assessments compared to traditional multiple choice and essay questions. It has been postulated that there is disparity between students' performance in performance-based assessments and traditional written assessments (Gardner *et al.*, 2001), which emphasises the need for assessments measuring students' skill in handling real life experiences, this, in turn, will shape student learning and training. Objective structured clinical examination (OSCE) is a well-established tool for assessing clinical skill because it evaluates clinical knowledge, professional judgment, communication, and problem-solving skills (Austin *et al.*,

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2003). There is an increased use of this assessment in a variety of pharmacy settings (Sturpe, 2010) as in laboratory courses (Hughes *et al.*, 2013), advanced pharmacy practice experience (APPE) (Meszaros *et al.*, 2009), continuing education (Austin *et al.*, 2006), and licensure (Austin *et al.*, 2003; Sturpe, 2010).

Sharjah University College of Pharmacy offers a five-year bachelor of pharmacy degree. Disease state management within the curriculum is offered in four three-credit hour pharmacotherapeutics courses (called Clinical Pharmacy courses) starting in the first semester of the fourth year in the programme. Respiratory disease (including asthma) management is taught in a didactic faculty-led lecture format as part of the first pharmacotherapy course (Clinical Pharmacy IA). In addition, a demonstration of devices, inhalers and peak flow meter use is conducted in a three-hour practical tutorial. The course also covers topics such as cardiovascular disease and drug use in pregnancy and lactation. All instruction and assessments within the curriculum are carried out in the English language. Students with Arab nationality (whose mother language is Arabic) constitute the vast majority (90-95%) of all students at the College. Methods of assessment include standard multiple-choice and short-answer examinations, quizzes and assignments. New teaching methodologies and assessments such as problem-based learning, team-based learning and oral assessments have also been introduced recently within the programme at Sharjah University College of Pharmacy (Hasan, 2008; Hasan, 2011).

Even though medications to treat chronic conditions such as asthma are considered to be prescription medications, the sale of these medications in community pharmacies without a prescription is common practice in many developing countries, including the UAE (Dameh, 2009). Several studies from the United Arab Emirates (UAE) have shown that the prevalence of asthma is on the rise and that the current level of asthma control is suboptimal (Mahboub *et al.*, 2010). Therefore, it is vital that health professionals are aware of current guidelines and involve to achieve better control and management of the condition. Pharmacists are very well placed to serve as effective healthcare providers to aid in the screening, early diagnosis and appropriate management of asthma. Consequently, it is imperative that pharmacy students are trained adequately to provide competent pharmaceutical care to asthmatic patients.

Considering the need to use an assessment tool to evaluate knowledge, communication and clinical skill of students providing linguistically competent care in the management of asthma, an OSCE assessment was developed within a therapeutics course. Specifically, the purpose of this study was to develop and compare an OSCE assessment of student skill in asthma management in English and Arabic-speaking patients, and to compare students' performance in the OSCE to traditional multiple-choice and short answer written examinations.

Methods

In Autumn 2013 semester, 120 students enrolled in the Clinical Pharmacy IA course. All students underwent either an English or Arabic OSCE assessment as part of the overall course assessments, which were scheduled and conducted separately over the last three weeks of the semester. Only five students from the whole class were non-Arabic speakers, hence, they were assigned to the English group. The rest of students were then randomly allocated to either group by allowing them to anonymously draw one of two papers containing reference to either language. To achieve a 95% confidence level and 5% confidence interval, a minimum of 59 students had to be registered in each arm (English and Arabic assessments), which was achieved in this study.

This assessment was not intended to be used as a high-stakes competency assessment, but rather contributing to the summative assessment of the course and as a feedback mechanism to future implementation of this type of assessment within the pharmacy curriculum. OSCE assessments contributed 20% of the overall course grade. The Final examination at the end of semester constituted 50% of the overall course grade.

Blueprint

A blueprint was developed to outline OSCE examination domains (*e.g.* competencies: knowledge, skills, and behaviours) and guide OSCE station development.

Several competencies needed to be assessed in the OSCE including Communication such as interviewing skills, Data collection, interpretation and analysis, Decisions and actions such as treating or referring, and Counselling and education.

The OSCE was designed to assess students' ability to meet the following objectives:

- 1) To apply the principles of asthma treatment in the context of a "step-wise" management plan to individual patients.
- 2) To recognise the role of the pharmacist in the management of asthma including: educating about disease, teaching inhaler technique, counselling about medications and referring to a physician when appropriate.
- 3) To perform proper patient probing and questioning techniques, verbal and nonverbal communication skills in data collection, patient assessment and management, and counselling asthmatic patients.

Cases

To cope with the complexity of scheduling the assessment of 120 students, the assessments could not be carried out in one single day, hence, a total of six case scenarios to be used on different days of the assessment were developed. Cases were developed in concordance with assessment

objectives and were designed to have a similar difficulty level requiring a similar management approach and counselling. In all cases, the student needed to assess a patient's level of knowledge about asthma, of the medications and devices to treat it, patient's adherence and control of their condition, and needed to deliver information about the disease, the medications and devices the patient is using and to develop an action plan including referral to a physician as needed.

An extensive process was put in place to produce cases that had a similar difficulty level. The course instructor developed the cases while two external judges (one community pharmacist and one physician) reviewed their content, difficulty level, and match with designed objectives. Four College of Pharmacy bachelor programme graduates employed at the College as clinical tutors and who had taken the same course in the past, reviewed the cases and gave feedback into the clarity, difficulty level and depth of assessment needed to be undertaken by students for each case. All comments and suggestions were considered in producing the final versions of the cases.

The course instructor, external judges and clinical tutors had good mastery of Arabic and English languages, so, the cases were translated to Arabic by the course instructor, but were exchanged back and forth between all involved individuals to produce the final translated versions.

Evaluations & Evaluators

A newly-developed assessment rubric was used to evaluate students' performance on all predetermined competencies. This evaluation form contained items related to assessment of patient's allergies, patient's level of knowledge of asthma and medications that treat it, patient's adherence and control of asthma, and development of an action plan for the patient including possible referral to a physician. The student was required to deliver complete and accurate information about asthma and its triggers, the medications used in treatment of asthma, device technique and maintenance, and need for and the way to use a peak flow meter. The student's verbal, nonverbal communication skills and empathy were also assessed. All items on the grading rubric for this OSCE were not weighted. It was considered by the faculty that students' communication style, therapeutic knowledge and problem solving skills were equally important, hence, all items whether related to communications or therapeutics were given equal value.

A global assessment item was included to measure overall student performance. Student's performance was graded from 1 = poor to 10 = Excellent. Detailed description of the specific behaviours and activities expected to be performed by the student under each item was defined. Students performing all activities defined under each item received full credit for that item, those performing some of the activities received partial credit depending on his/her performance, while those not addressing any activities

received no credit for that particular item. As an example, for a student to get full credit on the allergy question, he/she needed to ask the standardised patient about possible allergy or sensitivity to a variety of possible stimuli including medications, foods, pets, dust, perfumes, cigarette smoke, flour, workplace chemicals, household cleaners and exercise.

As with case development, the instructor, external judges and clinical tutors reviewed evaluation form items and format, and modified them for validity, clarity and completeness. Before the assessment start date, the instructor discussed the evaluation form in class and student questions were addressed.

The course instructor and the same clinical tutor evaluated all students. This was seen an important step (at this initial stage of introducing OSCE assessments) in maintaining consistency in the evaluation process and in helping relieve students' concerns with being assessed by different evaluators. To enhance inter-rater reliability, the evaluators discussed the evaluation scheme thoroughly and agreement was reached on the level of knowledge and skill needed to be portrayed by the student for each item on the evaluation form.

Student evaluation of OSCE

At the end of each OSCE session, students were given a chance to give feedback on all aspects of the OSCE assessment. A previously-developed evaluation form (Salinitri *et al.*, 2012) was adapted and modified for this study to be used by students to assess three domains of the OSCE experience including case Content, own performance Assessment and Logistics on a Likert-type scale (Agree, Neutral, Disagree). Students evaluated the difficulty level, extent to which the cases were realistic and if the content reflected learnt material. They also evaluated the extent to which the OSCE assessed their knowledge, clinical and practice skill, communication and the extent it made them feel like a pharmacist compared to traditional assessments. The last domain was about feedback on the direction received prior to the assessments, being made aware of the nature of the assessment and level of clinical skills required, whether adequate time was given to prepare and conduct the encounter, and whether the OSCE was more stressful than other types of assessments.

Logistics

On the day of assessments, students were seated in a quiet room prior to their turn to be assessed. A copy of the case scenario was given to the student before entry to the assessment room and was given a two-minute period to review the case and prepare for the interaction with the standardised patient. The student was then called to enter the Model Pharmacy and meet the standardised patient. The Model pharmacy is a room that resembles community pharmacy and is used in teaching pharmacy practice tutorials, first aid classes and communications.

Total testing time was limited to ten minutes and included the time required for the student to read the scenario, interact with the standardised patient, devise a recommendation and deliver appropriate counselling. No learning resources were allowed at the station given that the OSCE assessment only covered one disease state (asthma), which was also to be assessed in the written Final examination. A clinical tutor coordinated logistics e.g. timing of sessions and maintaining smooth flow of assessments.

The same clinical tutors involved in case validation and translations role played as standardised patients. Prior to the assessments, role players were provided detailed training on their respective case; the faculty member role played as the student and the clinical tutor role played as the standardised patient and discussions followed to establish consistent answers by the standardised patient to possible questions raised by students during an assessment. Role players were instructed to give neutral responses to questions not raised in prior discussions, to act out the case, and not to volunteer extra information than what the student asked. The faculty discussed with the evaluator what constitutes poor, average or excellent student performance and reflected on how this may be scored on the evaluation form.

Additionally, three pilot OSCE sessions involving all individuals on the project team were conducted prior to the actual first date of scheduled sessions. Discussions post pilot sessions were used to further refine cases, give feedback to role players, review the evaluation scheme and input into logistics,

Faculty feedback and debriefing

An important part of the OSCE was the feedback provided to students after all assessments were completed. At the end of all sessions, the faculty member (being an evaluator of all students) discussed the optimal management of cases and provided feedback to individual students regarding their performance in managing their respective cases.

Data handling

Data were entered into Microsoft Office Excel 2007 and analysed using IBM SPSS version 22. Student performance in each item included in the OSCE evaluation form and the overall mean OSCE score for each student were calculated and compared for English and Arabic groups using an independent Student t test. A paired Student t test was used to compare student scores in the OSCE, the Final exam and the overall course grade. Pearson's correlation was used to test for a relationship between OSCE scores and other course grades. In all statistical tests, a *p*-value of 0.05, 2-tailed, was considered significant.

This study was approved by the Research and Ethics Committee at the University of Sharjah in June 2013.

Results

A detailed process was developed to design an OSCE assessment of student management skills of asthmatic patients in the Arabic and English languages, including establishing a blueprint of competencies, objectives, cases, forms, rubrics, and detailed logistics leading to the successful implementation of the OSCE within the pharmacotherapy course.

All 120 (18 male and 102 female) enrolled students participated in the study. In the male group, ten participated in the Arabic assessment while eight participated in the English assessment. In the female group, 50 students participated in Arabic assessments, while 52 students participated in the English assessments.

Table I: Mean percentage item scores in English and Arabic, N*=120

Counseling item	English Mean (SD) [†]	Arabic Mean (SD) [†]
Proper identification of self and the purpose of the session	83 (12.4)	85 (8.3)
Assessed patient's prior knowledge of the disease and treatment	73 (22.5)	71 (25)
Assessed patient's drug & food allergies	80 (17.7)	79.6 (20.2)
Assessed appropriateness of present therapy, need for change and pharmacist action: educate or refer to doctor	61 (29.2)	68 (22.7)
Delivered patient education about condition and general treatment	67 (23.5)	70 (21.5)
Maintained eye contact, faced patient directly, open body posture and no distracting gestures.	91.3 (6.3)	92.3 (6.0)
Pace, tone, volume appropriate enough to communicate clearly, showed empathy	85.8 (13.5)	84.7 (12.0)
Conveyed complete and accurate information to the patient:		
- name, strength, dosage form		
- dosage & administration schedule		
- intended use / action		
- precautions, side effects	60.3 (20.8)	60.8 (20.0)
-What to do for side effects		
- drug-drug, drug disease, drug food interactions		
- info on refills and missed doses		
-storage		
Conveyed complete and accurate information to the patient:		
- instructions on devices use	70.0 (18.1)	74.0 (19.0)
- instructions on devices cleaning, checking number of remaining doses		
Summarized and/or verified patient knowledge, understanding/ concerns where appropriate	62.8 (19.0)	65.1 (18.0)

*N = number of participating students

[†]SD = Standard deviation

For the overall average student score for OSCE, students did slightly better in Arabic (A) compared to English (E) assessments; average of 75% ±10%, Range = 51% - 94% in Arabic and 73%±10.6%, Range = 41%-95% in English, but this was not statistically significant, (*p*=0.43). Students participating in the English assessment

Table II: Mean percentage score for OSCE*, Final exam and overall course grade

	Mean percentage % (SD) [†]	Pearson's correlation with OSCE* score & Significance
OSCE*	74.1(10.2)	
Final exam	68.6 (15.1)	0.253, $p=0.00$
Final course grade	72.9 (11.6)	0.33, $p=0.28$

*OSCE = Objective Structured Clinical Examination

[†]SD = Standard deviation

averaged none minutes ± 1 , (Range = 6.5-11 minutes), while those participating in the Arabic assessments averaged 8.5 minutes ± 1.06 , (Range = 5.5-10 minutes) to complete their assessments. This was not statistically significant $p=0.23$).

Table I shows that overall, in both Arabic and English assessments, students did better in communication-type questions and in general assessments rather than specific assessment of the individual patient. For all items, no statistically-significant differences were found between the Arabic and English assessment item scores.

Table III: Student evaluation of OSCE*-Arabic & English, N[†]=58/group

Content	Language	Agree (%)	Neutral (%)	Disagree (%)	<i>p</i> -value	
The OSCE cases developed reflected material learned	Arabic	80	17.77	2.22	0.530	
	English	76.19	19	2.38		
The scenario of my interaction with the standardized patient/physician was realistic	Arabic	66.66	22.22	11.11	0.014	
	English	52.38	40.47	7.14		
The stem (case scenario) given to me at the beginning of the examination was sufficient for required task.	Arabic	57.77	22.22	20	0.002	
	English	59.52	35.71	4.76		
Difficulty of this OSCE is similar to that of patient-care laboratory practical examinations	Arabic	37.77	42.22	20	0.143	
	English	42.8	47.61	9.52		
Assessment						
The OSCE measured application of clinical skills and abilities required in pharmacy practice	Arabic	77.70	11.11	11.11	0.002	
	English	83.33	16.66	0		
The OSCE evaluated my communication skills	Arabic	82.22	15.55	2.22	0.004	
	English	63.9	35.71	2.38		
The OSCE evaluated my knowledge	Arabic	62.22	28.88	6.66	0.331	
	English	54.76	38.09	4.76		
Performance on this examination was an accurate reflection of my clinical skills	Arabic	55.55	26.66	17.77	0.038	
	English	38.09	35.71	26.19		
The OSCE allowed me to feel more like a pharmacist than a student	Arabic	73.33	13.33	11.11	0.004	
	English	59.52	33.33	7.14		
Which examination style would best test your clinical skills? OSCE MCQ [‡] SA [¶] Essay	Arabic	OSCE 66.66	MCQ 8.88	SA 8.88	Essay 11.11	0.609
	English	73.8	11.9	7.14	7.14	
Which examination style would best test your knowledge? OSCE MCQ [‡] SA [¶] Essay	Arabic	OSCE 15.55	MCQ 53.33	SA 15.55	Essay 13.33	0.630
	English	14.28	47.61	19.04	19.04	
Logistics		Agree	Neutral	Disagree		
Adequate directions were given prior to the OSCE	Arabic	48.88	37.77	13.33	0.744	
	English	50	40.47	9.52		
Prior to the OSCE, I felt fully aware of the nature of the examination and level of clinical skills needed	Arabic	60	26.66	13.33	0.061	
	English	57.14	38.09	4.76		
Adequate time during the examination was given to prepare for the OSCE station	Arabic	51.11	37.77	11.11	0.462	
	English	50	33.33	16.66		
Adequate time was allotted at the OSCE station to allow time to complete required tasks	Arabic	66.66	22.22	8.88	0.611	
	English	62	28.5	8.5		
The OSCE was more stressful than written examinations	Arabic	62.22	22.22	15.55	0.003	
	English	85.7	11.9	2.38		
The OSCE was more stressful than pharmacy practice tutorials	Arabic	57.77	24.44	17.77	0.016	
	English	66.7	28.5	4.76		

*OSCE=Objective Structured Clinical Examination

[†]N = number of students participating in each group[‡]MCQ = Multiple choice questions; [¶]SA = Short answer

Students performed slightly better in the OSCE assessments in comparison to the end of semester final examination and the overall course grade. Table II shows that there is a small but significant correlation between the OSCE mean percentage and the Final exam mean percentage while there is no significant correlation between the OSCE mean percentage and the overall course grade.

Students' Rating of the OSCE Stations

Students evaluated three aspects of the OSCE experience including Content, Assessments and Logistics (Table III). Most students completing both English and Arabic OSCE's thought that the case scenarios reflected learnt material and that the cases were realistic (significant for Arabic) but they were mostly neutral concerning the OSCE difficulty level. Similarly, most students agreed that the OSCE's measured clinical knowledge, application of clinical skills and abilities (significant for English), and communication skills (significant for Arabic), and that performance in the OSCE was an accurate reflection of student's clinical skills (significant for Arabic). The majority of students in both assessments (significant for Arabic) approved that the OSCE allowed them to feel more like a pharmacist than a student. In addition, the majority of students in both assessments perceived OSCE as an examination style that best tests their clinical skills in comparison to multiple choice questions, short answer tests or essay-type assessments, while they perceived multiple choice questions as the examination style that best tests their knowledge in comparison to other assessments. About half the students said they were given adequate directions prior to the OSCE, but about 60% felt fully aware of the nature of the examination and level of clinical skills needed to be portrayed in the assessments. Students were mostly satisfied with the amount of time allotted at the OSCE station to allow completing required tasks. As expected, the vast majority of students thought that the OSCE was more stressful than other types of assessments (significant for English).

Notably, students did not raise complaints of case variability or mismatch in difficulty level after completing the assessments, a reflection of the extensive case validation process carried out early in this study.

End of semester student evaluation of the overall course was very good (Table IV). The course was evaluated by students using the same standardised evaluation form used in all didactic courses at the college. Items were rated on a 5-point Likert scale (5 = strongly agree and 1 = strongly disagree). The average course score was 4.56 which was well above the Department, College and University averages.

Discussion

A new OSCE assessment has been developed in English and Arabic and applied successfully within a pharmacotherapeutics course covering the management of

Table IV. Overall Clinical Pharmacy IA course student evaluations, N*=95

Question	Course level	Department level	College level	University level
	Mean	Mean	Mean	Mean
Course content was adequate and reasonable	4.30	4.16	4.16	4.15
The course was well-organized	4.70	4.18	4.18	4.17
The course was very interesting	4.40	4.07	4.07	4.02
Required work was appropriate	4.80	4.14	4.14	4.16
Assessment tools reflected the course content and outcomes	4.60	4.19	4.19	4.15
Course material (handouts, textbooks, visual material) was useful	4.30	4.17	4.17	4.14
Grading criteria were clear	4.70	4.15	4.15	4.21
Effective integration of IT in course delivery & communication	4.80	4.22	4.22	4.13
Distribution of assessment (assignments, exams, studiowork, presentations) was appropriate	4.30	4.16	4.16	4.19
Teaching & learning methods were effective	4.80	4.22	4.22	4.18
Feedback on assessments was returned in a reasonable length of time	4.30	4.16	4.16	4.18
Overall, the course was a good learning experience	4.70	4.21	4.21	4.20
Overall	4.56	4.17	4.17	4.16

*N = number of students completing evaluation

asthma. Overall, students achieved better scores in communication and general patient assessment items rather than specific individualised patient management. Students had access to the evaluation form before their assessments, which may have helped them practice these skills before the exam, knowing that these items contribute equally to their final scores as other case-specific items. Additionally, this may indicate that didactic teaching carried out in this course, may not result in high clinical skill achievement (Gardner *et al.*, 2001), other approaches such as team-based learning, problem-based learning where more application is imbedded within course delivery need to be expanded in the future (Hasan, 2008; 2011).

In this study, students' scores in the OSCE assessments were superior to the end of semester final examination scores and at least as good as the overall course scores. The Final exam included questions related to asthma management which depend on problem solving and case management, in a multiple choice format, this possibly explains the significant (although weak) correlation between OSCE scores and the Final exam scores. The overall course grade, on the other hand, comes from a

variety of assessment types and topics within the course including asthma; which may explain the poor correlation between the OSCE and the overall course grade scores.

Despite that Arabic is mother language of students, they were initially very apprehensive about taking an assessment in Arabic considering that learnt material is in English. Other concerns raised were related to whether standard Arabic or spoken Arabic dialects should be used during the communication, and whether these different dialects would pose misunderstandings during the communication. Students were encouraged to use their original spoken dialect since this was what they would actually do in real practice. In countries where English is used for instruction but is not the local spoken language, students may face difficulties when it comes to actual provision of care and communication with patients during their experiential training and future professional practice (Ahmadi *et al.*, 2013), highlighting the importance of training students on the use of local language and context in their interactions with patients. Austin and Dean described a study in Canada that indicated that pharmacists trained outside Canada in non-English speaking countries, were more frequently cited for the incorrect interpretation of prescriptions and practice-related errors that led to patient harm. The authors cited case reports of patient mishandlings and showed that, while most of these pharmacists possessed a high degree of pharmaceutical knowledge, they had difficulty in applying it to the Canadian clinical context due to miscommunication (Austin and Dean, 2004). The effect that lack of specific language knowledge can have has been highlighted in other areas of clinical practice; the field of emergency paediatric care (Selbst *et al.*, 2004). This study described situations where clinical paediatric care was potentially compromised by a language barrier in certain parts of the United States (Selbst *et al.*, 2004).

Interestingly, students performed similarly in Arabic and English assessments and evaluated their experience in both languages positively. The significant results for student experience in Arabic assessments were that they felt OSCE evaluated their communication skills, performance on the examination was an accurate reflection of clinical skills, and that it allowed them to feel more like a pharmacist, had a clear implication; students appreciated their experience of OSCE assessment - and possibly acknowledged its value in enhancing their capabilities to provide patient care in the future. Enhanced communication skills and better interactions among healthcare team members and the patient through proper use and understanding of language, along with classical pharmacological interventions could significantly help in the reduction of medication errors (Benjamin, 2003).

The literature on the impact of English pharmacy curricula on pharmacist provision of care in a language other than English remains scant. It is also unclear if introducing a portion of "local" language into the curriculum would affect the type and quality of future provided patient care. In the UAE, several studies have

pointed out the need for Arabic-speaking personnel in community pharmacies to allow for effective communication and better use of services (Hasan *et al.*, 2015a; 2015b). Obviously, there is an urgent need for pharmacy curricula that enhance language competence. Inclusion of locally-suited language-specific modules within a curriculum may be a helpful and reasonable endeavour to explore. Areas dealing with communication, self-care, patient education and health promotion, and disease management may be of most relevance.

Limitations

The most obvious limitation in this experience is the assessment of students using different cases due to the large number of students enrolled in the course and the limited number of faculty and staff administering the assessments. This limitation may have been minimised by the extensive case validation carried out in this study. Student perspectives on obtaining language training in managing and counselling patients were not explored and the effect of student preparation and exposure to Arabic content before assessments is an implication for future research.

Conclusions

An OSCE assessment administered in English and Arabic languages within an English curriculum has been introduced successfully to a disease management course focusing on asthma and the pharmacist's role in its management. No significant differences between OSCE scores in either language was observed. Students' scores were slightly better in the OSCE assessments than the end of semester final examination, but similar to the overall course grade. Students positively evaluated their experience in both languages and reported increased sense of feeling more like a pharmacist. They perceived OSCE as an examination style that best tests clinical and communication skills in comparison to other type of assessments but they also perceived it to be more stressful. Future explorations should focus on whether introduction of local language content into certain parts of pharmacy curricula would impact on pharmacist practice and readiness to deliver linguistically-competent pharmaceutical care.

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Conflict of interest

The authors declare no conflict of interest.

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