

Review

# Integrating Language Instruction into Pharmacy Education: Spanish and Arabic Languages as Examples

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**Abstract:** Effective communication is key for healthcare providers to provide optimal care for patients. Pharmacists' fluency in a patient's native language is important for effective communication. Additionally, language concordance improves patients' trust and ensures health equity. In the United States (US), Hispanics are the largest minority group, but only 36% of the pharmacy schools in the US offer Spanish courses in their curriculum. Conversely, Middle Eastern countries have implemented English as the language of instruction in pharmacy schools, though the native language of the patient population is Arabic. The discrepancy between the language of education and the language used by patients might lead to communication problems, thus limiting a pharmacist's role in practice. This review aims to describe the efforts of pharmacy schools both in the US and Middle Eastern countries to incorporate a second language (Spanish and Arabic, respectively) in their curriculum. Spanish language content has scarcely been introduced into the pharmacy curriculum in the US, either as didactic elements (elective courses, lab sessions, modules within a course, or co-curricular programs) or as language immersion experiences (rotations and internships, nationally or abroad). In Arabic-speaking countries, an Arabic course was introduced to the pharmacy curriculum to enhance students' communication skills. This review provides an overview of the steps taken in various pharmacy programs to prepare students for adequate multilingual speaking. The findings reveal the need for additional strategies to assess the impact of language courses on student performance and patient experience, as well as language competence in pharmacists and pharmacy students.

**Keywords:** communication skills; language competence; pharmacy education; Arabic; Spanish



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## 1. Introduction

In the healthcare field, effective and efficient communication is vital. This is especially relevant for pharmacists, who are often portrayed as the most accessible healthcare professionals in the United States (US) [1]. A report from the World Health Organization (WHO) about the role of the pharmacist, which was published over 20 years ago, pointed to the key position that the pharmacist holds between physicians and patients and stressed the communicator role as part of what they named the “seven-star pharmacist” [2]. As the role of pharmacists continues to transform and expand, the communicator role remains a pivotal one. Effective communication with patients, caregivers, and healthcare providers is an expected skill in pharmacists. Therefore, effective communication skills should be included in the training of pharmacy students. Indeed, the Center for the Advancement of Pharmacy Education (CAPE) includes Communication (subdomain 3.6: “Effectively communicate verbally and nonverbally when interacting with an individual, group, or organization”) in its 2013 Educational Outcomes [3]. Similarly, the Canadian

Council for Accreditation of Pharmacy Programs (CCAP) focuses on providing students with the experiences required for acquiring communication skills with both patients and other healthcare providers in the medical field (Standard 6) [4].

In an effort to provide inclusive healthcare to a diverse patient population, certifying bodies also emphasize the importance of training health professionals to exhibit cultural competence. For example, the CAPE Educational Outcomes include cultural sensitivity (subdomain 3.5: “Recognize social determinants of health to diminish disparities and inequities in access to quality care”) [3]. Also, the AFPC (Association of Faculties of Pharmacy of Canada) Educational Outcomes emphasize and define the communicator role of pharmacists: “As Communicators, pharmacy graduates communicate effectively in lay and professional language, using a variety of strategies that take into account the situation, intended outcomes of the communication and diverse audiences” [5].

Providing language-concordant care is not directly addressed in the CAPE or AFPC Educational Outcomes, but language also constitutes a social determinant of health [6,7]. Molina et al. [8] suggested that language concordance is fundamental to gaining trust, optimizing health outcomes, and for advancing health equity, and, hence, made a call to health professional schools to provide language courses in order to prepare students to deliver language-concordant care. One of the important issues preventing effective communication between pharmacists and patients is the language barrier, and earlier studies suggested that higher rates of medication errors, lack of patient adherence, lower patient health literacy, and poorer health outcomes are associated with the existence of language barriers [9–15]. Additionally, studies have shown that community pharmacists provide less patient education when dispensing medications to patients with a language barrier [16], but when the pharmacist is able to provide language-concordant care, health outcomes remain similar among diverse patient populations [17,18]. However, despite the clear evidence that language discordance contributes to health disparities, language competency training in schools of pharmacy is still in its infancy [19,20].

The teaching and learning of a second language can be integrated into health-related programs in different ways. The purpose of conducting this narrative review was to review the existing literature that describes the current methods and challenges of incorporating language training into pharmacy education. Two distinct scenarios are described for which language training is necessary: (1) pharmacy programs teaching a second language, due to demand from patients in the community they serve who speak that language, and (2) pharmacy programs where the language of instruction differs from the country’s official language and, therefore, that of the community they serve. We describe different ways for the inclusion of a language curriculum in pharmacy education, and we present the current status of language inclusion in pharmacy schools’ curricula, focusing on one prominent example for each of the aforementioned scenarios: (1) the teaching of Spanish as a second language in pharmacy schools in the US, and (2) the teaching of Arabic as a native language in pharmacy schools in Middle Eastern countries that use English as the primary language of instruction.

For both scenarios, a language curriculum in pharmacy school allows students to develop the skills necessary to provide language-concordant care to their patients. The following sections of this review will explore how language initiatives have been incorporated into the pharmacy curriculum, with a special focus on the Spanish language experience in the US and the Arabic language in the Middle East. The assessment of these language initiatives is summarized in Table 1.

**Table 1.** Language assessments.

Reference	Assessment Type	Assessment Description	Language Assessed/Program First Language	Country
[21]	OSCE	The English OSCE included 10 cases. Two case blueprints were chosen for the Arabic OSCE. Students received short instructions (in English or Arabic). Stations duration: 8 min/Student performance in standardized patient encounter	English, Arabic/English	Qatar

Table 1. Cont.

Reference	Assessment Type	Assessment Description	Language Assessed/Program First Language	Country
[22]	Examination	Test of 30 multiple choice questions was developed by six faculty members from the department of clinical pharmacy/Latin medical terms examination score	Medical Latin/English	Saudi Arabia
[23]	Simulated patient assessment and examination	Arabic and English assessments were scheduled and conducted separately. Students were allowed to use learning resources/Arabic verbal and non-verbal communication/patient counselling skills; examination	Arabic/English	United Arab Emirates
[24]	Quizzes, assignments, participation, attendance, examinations, and OSCE	Examinations: multiple-choice, short answer, matching, or fill-in-the-blank questions related to pharmacy practice. OSCE: four different stations evaluated on an S-/S/S+ scale/Patient education, pharmacotherapy knowledge, Spanish- language skills, and cultural competency	Spanish/English	US
[25]	Pre-/post-intervention questionnaire	13-item questionnaire about previous training in Spanish and contact with Spanish-speaking patients in prior pharmacy work experience, interaction with patients, interpreter availability, and frequency of use in pharmacy work setting/Efficacy of the Spanish learning module	Spanish/English	US
[26]	Reflection, attendance, class participation, homework, and examinations	Part of each 4-week APPE assessment, each student at the Alivio clinic was required to submit a written reflection on their experience/Written reflection on clinical experience and student performance	Spanish/English	US

OSCE: objective structured clinical examination.

## 2. Second Language Education in Pharmacy Programs: Spanish in US Schools of Pharmacy

Hispanics represent 18.7% of the US population, constituting its largest minority group, according to the US census in 2020 [27]. However, recent studies indicated that while 66% of US medical schools offer a medical Spanish curriculum, only 36% of pharmacy schools reported offering a Spanish curriculum [28,29]. As a result, pharmacists are often forced to use interpreters (including non-professional interpreters, such as a patient's family member), communicate non-verbally, or write directions in Spanish, which results in ineffective interactions with Spanish-speaking patients [16,30]. Dilworth et al. [31] suggested that curricular strategies should be implemented in pharmacy programs to improve the ability of future health professionals to provide quality healthcare to their diverse patient population. While there is not a single approach to second language education that is universally recommended in pharmacy schools, Ortega et al. [32] proposed three structural elements to be considered when implementing a medical Spanish program in medical schools that could be adapted by pharmacy schools: institutional endorsement of the role of medical Spanish education within a national health disparities context; pre-course proficiency testing to establish student starting level; and learner post-course communication skills and limitations assessment to provide individualized recommendations and assure patient safety.

Given the growing Spanish-speaking population in the US, this section focuses on the teaching and learning of Spanish in schools of pharmacy in the US. It is worth noting, however, that there are at least 350 spoken languages in the US [33], and the lessons learned can easily be applied to any other language in order to provide equitable healthcare to all patients.

### 2.1. Didactic Courses

Didactic courses provide the theoretical knowledge of the target language with varying levels of practice and interaction. These are used in medical or pharmacy curricula in the form of elective courses, core courses, or laboratory sections. However, the most commonly reported barrier to offering medical Spanish courses in the schools of pharmacy in US is the lack of instructors with a dual experience in the Spanish language and in pharmacy [28]. Other barriers include lack of space in the curriculum, perceived low demand due to a low Hispanic population in the institution's area, or low student interest [28].

### 2.1.1. Elective Courses

Elective courses are the most commonly used format to integrate medical Spanish in the US pharmacy curriculum, with 62% of the schools' Spanish offerings falling under this format [28]. Elective elements provide the advantage of being easily implemented without the need for formal curricular modification. The fact that students choose to take the course implies intrinsic motivation, which is usually associated with a higher level of commitment compared to required core courses [24]. One challenge to the implementation of a single elective course is determining the prerequisites for enrollment. In order to adequately prepare students to provide healthcare to Spanish-speaking patients, students need to develop skills in patient counseling that expand beyond simply learning Spanish medical terminology. Therefore, ideally, a student would take basic Spanish courses in the first years of their college education and would then take a "medical Spanish for pharmacists" course at an intermediate level that favors a more patient-focused approach to teaching. However, many schools of pharmacy do not include a second language in the pre-pharmacy required coursework, depending on the geographical area of the institution [26]. Even if students complete several years of high-school Spanish, the time elapsed without practice until they take Spanish in the professional program is often enough to place them back in the beginner's category [34]. Mospan et al. [28] reported in 2016 that 60% of the pharmacy students enrolled in a medical Spanish elective entered the class at the beginner level. The accessibility of the course to the highest number of students (i.e., with zero or few prerequisites) needs to be carefully balanced with the available time to reach the desired course outcomes. If no prerequisites are in place, then it is likely that students with varying levels of Spanish language competence co-exist in the same course. Therefore, if a specific level of Spanish competence is expected to ensure that students benefit from the course, a competency evaluation might be provided before allowing students to enroll. In US medical schools, only 21% of schools offering medical Spanish require previous language proficiency; however, 59% offer multiple levels of medical Spanish curricula [29]. The offering of multiple levels of medical Spanish courses, although more complex and time- and resource-consuming, will likely be of greater benefit to pharmacy students and has been used in the Butler University College of Pharmacy and Health Sciences [26]. VanTyle et al. [26] suggested offering a Spanish/PharmD certificate program when such an approach is taken.

The elective nature of the course, the need for prerequisites in order to enroll in the course, and the lack of awareness of the need for culturally responsive care might be the reasons for a small class size, which seems to be a constant in courses of this nature in the US [24,35,36]. Generally, Spanish for pharmacists is designed as a one- or two-credit elective course focused on acquiring the skills to be able to obtain patient information and provide medication counseling in Spanish. The detailed structure of elective Spanish courses for pharmacists was published by Mueller and by Griffiths et al. [24,35].

### 2.1.2. Module within a Laboratory Course

In the University of North Carolina Eshelman School of Pharmacy, Dinkins et al. [25] reported the implementation of a Spanish language module in a first-year-required Pharmaceutical Care Laboratory course. This approach exposed the whole cohort of students to a lecture on medical Spanish and Hispanic culture and included a 6-week module related to medication label and administration instructions, patient information questions, patient counseling, and medication side effects. While a short exposure to the language might not result in a significant improvement in communication skills, it could, however, increase the interest and confidence to pursue further language training in a large proportion of the students. Ninety-seven percent of the students in the Dinkins et al. [25] study reported being interested in future Spanish language learning opportunities.

### 2.1.3. Other Approaches for a Multilingual Education

Some universities mandate enrollment in the target language courses and make the language training courses mandatory. These are programs within universities that serve com-

munities with an exceptionally large Hispanic population, such as the Doctor of Physical Therapy program at the University of Texas at El Paso, which have documented improvements in language skills [36,37], or universities in countries with more than one official language.

Some universities opted for co-curricular training programs that involve didactic components. At Western University of Health Sciences College of Pharmacy in Pomona, California, a faculty mentor prepares Spanish-speaking students to act as facilitators in a co-curricular training program [38]. In these programs, the training sessions are led by students and are scheduled at times that do not conflict with other curricular components. The training sessions are offered at different levels: beginner (most attended), intermediate, and advanced. Such an approach is valuable for schools that wish to offer students profession-specific language training but has limitations in faculty availability for all sessions and for all skill levels [38]. Recognition should be provided for faculty members for their mentorship of student facilitators, for student facilitators for their time and effort, and for student learners for the completion of the training.

Multiple learning platforms for medical Spanish as well as other languages are available online. These can be utilized as an element of a course or independently by students and also practicing pharmacists. Some of these platforms also offer bilingual certifications. These certifications validate the learner's proficiency in both the native and target language, which not only boosts the learner's confidence but also enhances their professional credibility, opening up new opportunities for career advancement and patient care. The learning materials available on these platforms are often designed by language experts and medical professionals, ensuring the accuracy and relevance of the content. Learners can access a range of resources, including interactive lessons, vocabulary exercises, audiovisual materials, and simulated scenarios, enabling them to practice and apply their language skills in realistic medical contexts.

## 2.2. *Experiential Learning through Language Immersion Programs*

Either as a component of a course or as a stand-alone initiative, the didactic learning of a language is often paired with experiences that enhance the language acquisition and the cultural competency of the students. One example of such experiences is service-learning opportunities by providing free health screenings/care to Spanish-speaking patients [24,26,39]. If the students are located in an area with strong Hispanic influence, a shadowing experience in a pharmacy that serves a primarily Spanish-speaking population can provide students with real-world scenarios. The anticipation of such experiential events may magnify the student's sense of responsibility and motivate them to learn the language beyond what a single didactic course might achieve. Immersion programs in Spanish-speaking countries have been shown to improve language proficiency over domestic coursework alone [40].

### 2.2.1. *International Service-Learning Trips*

Advanced pharmacy practice experience (APPE) rotations during the final year of pharmacy school comprise an essential part of the curriculum in the majority of pharmacy schools in the US [41]. Under the mentorship of a preceptor, the four- to six-week APPE provides students with unique opportunities to discover and experience different types of pharmacy services in diverse settings. In addition to participating in the required APPEs (community, clinical, or institutional sites), students are allowed to participate in several elective APPEs. Several pharmacy programs in the US offer opportunities to participate in international medical mission trips or international service-learning trips (ISLTs) during elective APPEs [42–48]. These trips help students improve their clinical skills, experience personal and professional growth, and serve underserved populations while expanding specific language skills [49]. Although interest in this type of elective experience is increasing, students may express initial concerns about participating [43,44]. Chuang et al. [43] conducted a study to identify student concerns before and after an ISLT to different countries in Latin America. Prior to the trip, students were more concerned



about diseases/epidemics, language barriers, financial issues, food, or travel issues. Interestingly, all these concerns significantly decreased during the trip, except for the language barriers. For students who did not speak Spanish, language was the only concern that increased after the trip, even with the use of language aids, which includes medical translators, smartphones, and bilingual dictionaries. However, students who spoke Spanish at a conversational or fluent level (34%) experienced a decrease in language concerns after the trip. The authors suggested that pharmacy and medical schools could offer courses in basic medical Spanish to help students address this concern [43]. Although language proficiency before and after the ISLT was not assessed in this study, a decrease in language concerns might be indicative of skills improvements in Spanish speakers. For those students who did not speak Spanish, the increase in language concerns could be interpreted as a “wake-up call” that might act as motivation to learn the language.

In preparation for an ISLT, the participants usually dedicate time to team-building exercises, familiarization with the destination country’s geography, culture, and common diseases, and reviewing medication counseling [42,44]. In terms of language, the preparation is highly variable among programs; the University of Mississippi, Palm Beach Atlantic University, or Mercer University, for example, offer a “Spanish for pharmacists” elective course that is useful for students participating in trips to Spanish-speaking countries [44,48,50]. Similarly, at North Dakota State University (NDSU), the ability to speak Spanish was desired but not required, and the APPE preceptor provided students with medical and introductory Spanish lessons for 60 to 90 min on a daily basis for one week before the trip [42]. It is worth noting that the majority of studies indicated that even when interpreters are available during the ISLTs, language barriers continue to be reported as a common struggle [42,43,47].

#### 2.2.2. Sponsored Summer Programs

In the US, pharmacy students have the opportunity to apply for a Spanish Immersion Summer Internship program, which is usually sponsored by one of the major retail pharmacies [51]. In this Summer Internship program, students enhance their Spanish language skills while serving at locations where the majority of patients are Spanish-speaking. In addition to the immersive experience of serving mostly Hispanic patients, students receive training in Spanish, Hispanic culture, and prevalent disease states in the Hispanic community.

#### 2.2.3. Student Exchange Programs

The International Pharmaceutical Students’ Federation (IPSF) is an advocacy organization that connects pharmacy and pharmaceutical science students across 92 countries. In the US, IPSF membership is automatically included in student membership to the American Pharmacist Association (APhA-ASP). IPSF offers professional pharmacy internship opportunities at international levels to student members through a program called the *Student Exchange Program* (SEP) [52]. Currently, there are 88 countries that offer SEPs, which are usually between two weeks to three months in duration. These internship opportunities allow students to choose between community, hospital, clinical, industry, research, or governmental settings. There are various language requirements for SEPs in different countries; for example, students placed in Colombia are required to speak intermediate Spanish when placed in research settings and fluent Spanish when placed in hospital and industry settings [52]. Each exchange program is a unique experience and allows students to enrich their knowledge and skills about new cultures and languages while developing their knowledge and skills in specific domains of pharmacy.

#### 2.2.4. Short Study Abroad Programs

Several schools across the US offer short study abroad programs as part of the PharmD curriculum. These courses are usually offered as electives that provide students with the opportunity to engage in international pharmacy experiences for about two to three weeks. This offering is ideal for students who prefer traveling to other countries for a shorter

period, rather than completing an international APPE or IPSF SEP internship. The University of Florida (UF) College of Pharmacy and the NDSU School of Pharmacy usually offer their short study abroad programs in mid-May, when professional classes are completed for the spring semester and before offering IPPEs and APPEs in the summer semester [53]. For eligibility, UF requires students, who are strong academically, to complete an application essay and rank their top preferred countries for the short study program. NDSU, however, requires students to take a prerequisite course in Global Health to orient students to various models of pharmacy practices in countries other than the US [54]. In addition to learning about various pharmacy practice settings and healthcare delivery systems in other countries, students are given the opportunity to engage with and explore the country's language, culture, and communities [53,54].

A critical student-reported barrier for enrollment in the short study abroad experiences is the associated expenses of the program. Owen et al. [55] indicated that while 90% of students studying abroad reported their inability to pay the costs of participation in the international study program, more than 50% of students emphasized that the lack of knowledge of the foreign language negatively influenced their studying abroad experiences. Most students indicated that their familiarity with the host country language greatly influenced their interest, with English-speaking regions attracting the majority of students. However, some students reported their motivation to have their study abroad program in specific regions of the world, such as Latin America, because they are interested in learning the native language and expanding their language skills. To overcome the language barrier, Owen et al. [55] suggested orienting students to study abroad opportunities in the early years of their pharmacy education in order to give students the time to improve their foreign language skills through pharmacy electives or language courses offered by the university.

### *2.3. Limitations to Second Language Training in Pharmacy Education*

Coss [56] highlighted the shortcomings of current medical Spanish courses and programs, specifically the lack of clear objectives and the misalignment of the course content and assessment with the real-world needs of the student's professional path. To address these shortcomings, he proposed a Task-Based Language Teaching (TBLT) approach in which the completion of "tasks"—defined as "the professional (and other) behaviors in which a person engages throughout their day using their second language"—drives the program objectives, methods of instruction, and assessment of competence and provides a step-by-step framework to design a successful second language program for healthcare professions [56]. While the shortcomings are similar in courses of medical schools [57], recommendations have been issued to standardize the teaching of medical Spanish courses in medical schools, establish curricular and competency guidelines, and propose best practices for skill assessment and certification [58]. The teaching of second languages in pharmacy schools would benefit from similar consensus recommendations.

It is important to recognize that ensuring adequate communication between patients and pharmacists will likely require more than a single course or program during pharmacy education. Post-graduate training and practice opportunities should be provided so that pharmacy graduates may continue to improve on their language skills through Continuing Education programs that focus on the acquisition and practice of an additional language [59,60]. Additionally, the level of language proficiency required to provide linguistically competent patient care should be standardized and evaluated before a pharmacist offers bilingual consultations [61]. Several studies highlighted the potential health risk associated with an underutilization of medical interpreters by healthcare providers due to a false feeling of language proficiency [11,32,61–63]. Even if no direct medical harm results from deficient communication, patient trust in their provider may be affected [64]. Students should always be aware of their language limitations, which can be achieved with the use of a validated proficiency scale, such as the Interagency Language Roundtable scale or the Physician Oral Language Observation Matrix (POLOM) [65,66]. The implications

of overestimating language skills and underutilizing interpreters might be discussed with students as part of their orientation and training on an additional language, and they may be trained on the proper utilization of interpreters [63].

While studies support higher patient satisfaction when both the provider and patient speak the same language and an interpreter is not needed, students and pharmacists need to be aware of all options available to them in the pharmacy when language discordance exists to ensure patient safety [67]. These resources include bilingual staff (e.g., pharmacy technicians), which are preferred to ad hoc interpreters such as family members due to their technical knowledge, professional interpretation services (in-person, telephone, internet), software to translate prescription labels and drug information sheets, app-based translation services, or books of common Spanish phrases. The most accessible and, therefore, most commonly used language assistance resources in pharmacies are computer-based Spanish medication labels and leaflets. These resources provide basic information and do not allow patients to ask questions but are often perceived by pharmacists to be easier to use and more helpful in comparison to paper-based resources and personnel [68]. Potentially due to time constraints, language assistance telephone lines that connect with an off-site interpreter and other forms of professional interpretation are less commonly used [68,69].

### **3. Native Language Education in Pharmacy Programs: Arabic Counseling in Middle Eastern Countries**

In non-English-speaking countries, English is still used as the language of instruction in many pharmacy programs in an effort to prepare students to use the universal scientific language [70]. In addition, in some countries in the Middle East, particularly in Gulf countries, the majority of the population comprises foreign labor and, as a result, English has been implemented as the language of instruction in various universities and programs, though the native language of the local population is Arabic, and the main language of the country is Arabic. This presents a challenge because of the discrepancy between the language of program delivery and assessment and the primary language of practice. This discrepancy places non-English-speaking patients at a higher risk of medication errors and/or inappropriate use of medications, as a result of inadequate provision of medication counseling in their native language [21]. It also challenges pharmacists' ability and confidence in communicating effectively with their patients [71]. Furthermore, the variability in Arabic dialects, which sometimes differ even from one region to another in the same country, makes the communication between patients and pharmacists even more difficult [72]. This issue is more prevalent in multicultural Middle Eastern countries, such as the Gulf countries, in which Arab expatriates represent a significant sector of the population [73,74]. Therefore, the need for including the Arabic language within the pharmacy curriculum in Middle Eastern countries has been highlighted by both pharmacy students and pharmacists [75,76]. In particular, pharmacists indicated that teaching the management of chronic illnesses and common ailments, such as cold and flu, in the Arabic language is necessary. Pharmacists also stressed the importance of enhancing students' communication skills in different situations using the Arabic language. Furthermore, pharmacists recommended delivering Continuing Education programs for pharmacists in Arabic. The significance of communication in Arabic was also demonstrated in other studies that highlighted Arabic patients' preference for communicating with Arabic-speaking healthcare providers [77,78].

However, the introduction of the Arabic language in pharmacy schools in the Middle East is still new. The only documented implementation is from the University of Sharjah's College of Pharmacy in the United Arab Emirates, where Arabic topics were introduced into a pharmacy practice course in the third professional year [23]. In each session of pharmacy practice course, a specific topic is delivered as a lecture; thereafter, students are expected to practice the topic through a role-playing activity representing the patient and pharmacist.

Researchers at the University of Sharjah College of Pharmacy have simulated patient assessment to evaluate student Arabic skills after the introduction of Arabic courses into the curriculum [23]. They argued that including Arabic language content in courses as well



as simulated patient assessments enhanced student communication skills, with students scoring similarly in the Arabic assessment and English assessments within the course, and with students favorably rating the Arabic content as useful and adequate [23].

Enhancing communication skills in a native language during pharmacy school can also help meet patient preferences in countries or jurisdictions where more than one official languages coexist, especially when one of them is minoritized, such as Welsh in Wales, where patients who speak the minoritized language primarily report feeling more at ease and able to explain symptoms and ask questions easier when the pharmacist also speaks Welsh [79].

#### 4. Limitations and Future Directions

In order to advance and optimize language competency training in pharmacy schools, future research should explore several key aspects. It is important to evaluate course effectiveness and learner competency upon completion of the program with standardized assessments that can reliably indicate the students' proficiency level. Currently, variability in outcome measures and lack of standardized course design or assessments prevent the establishment of recommendations for the development of an effective language training program for schools of pharmacy [57]. Such an approach would allow for direct comparisons among training strategies in terms of effectiveness and equip schools with the resources to establish a good language program. Moreover, a reliable assessment of proficiency can prevent provider's overestimation of their language skills (false fluency) and avoid potentially dangerous miscommunications. These research efforts will inform the development of evidence-based teaching strategies and help strengthen the integration of language education in pharmacy schools, ultimately leading to improved healthcare experiences for a diverse patient population.

One major challenge to the implementation of language education in pharmacy school is the limited time available in the curriculum. Pharmacy programs already have a comprehensive set of coursework and training requirements, making it difficult to allocate sufficient time for language training without sacrificing other essential components. Also, the availability of qualified instructors who can effectively teach the required languages while also having the necessary healthcare knowledge can be challenging [28]. Furthermore, language training may not cover all the diverse languages encountered in practice, making it challenging to cater to every patient's needs. Pharmacists may encounter patients who speak languages for which they have not received specific training, posing communication difficulties, in which case professional interpretation services are granted.

Lastly, language training alone does not address all cultural aspects that impact patient care. Cultural competence encompasses a broader understanding of cultural beliefs, values, and healthcare practices, which require ongoing education and exposure beyond language skills [18]. In addition, non-verbal cues, such as body language and tone, play a significant role in effective communication.

We acknowledge that the examples of Spanish and Arabic presented in this review article are only a few of the many examples in which language competency contributes to medication-related encounters. Another example includes Arabic-speaking communities living in English-speaking countries who also encounter medication-related issues, which has been attributed to multiple factors, including inappropriate counselling and lack of information about medicines and diseases [80].

Despite these challenges, integrating language training into pharmacy education is a crucial step towards enhancing patient-centered care and improving health outcomes. Collaboration with language departments or community language programs, leveraging technology for language resources, and incorporating cultural competency training can help overcome some of the limitations associated with language training in pharmacy schools.

## 5. Conclusions

Effective pharmacist–patient communication is a cornerstone of pharmaceutical care. Given the unique accessibility of pharmacists among healthcare professionals, language competency should be ensured, encouraged, and, indeed, introduced as a key component of pharmacy education. Through this inclusion, pharmacy schools will contribute to improving patients’ trust in their pharmacist, optimize therapeutic outcomes for the patient, and advance health equity. There are multiple options available to help achieve the goal of language competence among pharmacists, including elective courses in the pharmacy curriculum, co-curricular experiences, or immersion programs. Future studies are needed to explore the best practices for language instruction in pharmacy schools according to the needs of the patient population they serve and best practices for the assessment of language competence.

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