

BRIEF

Sign Language in Brazilian Pharmacy Education

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Objective. To evaluate undergraduate pharmacy curricula at Federal Institutions of Higher Education in Brazil in order to identify sign language courses and other content related to the provision of care to deaf patients.

Methods. A cross-sectional, descriptive study was conducted between March and June 2017. Data were collected from the websites of undergraduate pharmacy education programs in Brazil. Sign language courses were classified according to type (mandatory or elective), nature (theoretical or theoretical-practical), course period and workload. The course contents were extracted and analyzed by content analysis.

Results. Of the 35 schools of pharmacy included in the study, 18 (51.4%) included a sign language course in their curriculum. Eighteen (100%) of the sign language courses were elective, one (5.6%) was theoretical-practical, 16 (89.0%) did not have a predetermined point in the curriculum for students to complete the course, and 11 (61.1%) had a workload equal to or greater than 60 hours. The main pedagogical content identified related to the teaching and learning of sign language.

Conclusion. Learning sign language in undergraduate pharmacy is important for these professionals could provide humanistic and integral care to deaf patients. Therefore, there is considerable room for improvement in teaching sign language to undergraduate pharmacy students in Brazil.

Keywords: Pharmacy Education, curriculum, sign language, deaf patient;

INTRODUCTION

About 50 million people across the globe are deaf, and 360 million have hearing difficulties.¹ In several countries, the deaf community uses a sign language that has its own grammar, structure, and syntax.²⁻⁴ The sign language used in Brazil is LIBRAS (Língua Brasileira de Sinais). In Brazil there are about 3.5 million deaf people (1.2% of the population); however, the number of sign language users is unknown.⁵

Members of the deaf community generally have low reading levels and their health literacy is significantly poorer than that of people with normal hearing.⁶ Several factors contribute to this low health literacy, including difficulty with understanding written information and communication barriers with healthcare professionals.⁷⁻⁹ In practice, studies have highlighted that healthcare pro-

fessionals, such as pharmacists and pharmacy students, have low knowledge about deafness and deaf culture.¹⁰⁻¹² Consequently, patients' low health literacy, along with with pharmacists' inadequate communication skills and lack of training, can cause problems with pharmacotherapy and result in negative healthcare outcomes.¹³⁻¹⁵

According to Mathews and colleagues, the challenges of pharmaceutical communication with deaf patients goes beyond the difficulty of understanding these patients' needs and the challenge of learning basic skills in sign language.¹⁶ Medical terms must be accurately communicated, complicated drug instructions must be given correctly, and pharmacotherapy problems must be prevented or resolved. The literature has highlighted the importance of pharmacists knowing how to communicate with deaf patients since 1993, but difficulties associated with pharmacists' lack of training for these consultations generate discomfort for both professionals and patients.¹⁷ Ferguson and Shan, for example, point out that only 30% of pharmacists feel comfortable interacting with deaf people.¹³ However, the need to learn sign language and how to provide

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healthcare to deaf patients are topics seldom discussed in most training seminars for pharmacists.^{16,18,19}

In Brazil, according to national legislation, all university health professions programs must include sign language as an elective course, except for speech therapy programs, for which this course is mandatory.²⁰ Despite the seemingly obvious advantages of investing in the training of pharmacists to meet the specific health needs of the deaf community, there are no studies evaluating the inclusion of a sign language course in undergraduate pharmacy programs in Brazil. In addition, this analysis has not been done in other countries either. Thus, this study aimed to evaluate curricula in undergraduate pharmacy education of Federal Institutions of Higher Education in Brazil regarding the frequency and content of courses that taught LIBRAS.

METHODS

The authors completed a descriptive, cross-sectional study that involved an analysis of Brazilian undergraduate pharmacy curriculum between March and June 2017. There were more than 500 schools of pharmacy in Brazil (publics and privates) in 2017; however, only schools of pharmacy from Federal Institutions of Higher Education (FIHE) were chosen to include in the study sample. Only FIHE programs had to make their curriculum available on their web page as recommended by the Brazilian Ministry of Education.²¹⁻²² In Brazil, the pharmacy curriculum takes four years to finish, with students completing a minimum of 4000 hours of training. Pharmacy students must develop an understanding of drugs and medicines, clinical and toxicological analyses, the food industry, and the provision of health care.²³

A list of schools of pharmacy of Federal Institutions of Higher Education in Brazil was extracted from the National Institute of Educational Studies and Research (INEP).²² The websites of all schools of pharmacy were located and analyzed. To be eligible for the study, the school had to provide its complete curriculum on the website.

The data were extracted by two researchers working independently. Before the study, the researchers discussed the terminology that would be used to ensure consistency. The following variables were identified and extracted from each school's website: classification of sign language course (mandatory or elective), nature of the course (theoretical or theoretical-practical), workload, course year, and course contents. All of these variables should have been described in the curriculum. After the data extraction, the researchers compared their results. Differences were discussed and resolved by consensus.

The content of each course was analyzed using content analysis in which data were organized and sys-

tematized into categories.²⁴ Descriptive analysis (means of absolute and relative frequencies) was used to analyze the data.

RESULTS

According to INEP, there were 49 pharmacy schools from FIHE in Brazil, and 35 met the inclusion criteria for the study. Among the 35 curriculums analyzed, 18 (51.4%) offered a sign language course. All of the courses were elective offerings. The content of one (5.6%) course was both theoretical and practical, while the content of the other 14 were theoretical only. In addition, 16 (89.0%) sign language courses could be completed at any time during students' pharmacy studies. Eleven courses (61.1%) had a workload greater or equal to 60 hours (Table 1).

From the content analysis, three themes emerged: the clinical, educational, historical, social, and anthropological aspects of deafness; the teaching and learning of sign language; and public policies and legislative aspects related to the deaf community (Table 2). Two of the courses included all three of the categories identified.

DISCUSSION

Teaching sign language to pharmacists would help remove one of the major barriers in the pharmacist-patient relationship with regards to this specific population. Recently, the Brazilian Federal Pharmacy Council, entity of professional regulation, published guidelines for the pharmacist's role in the care of people with disabilities. The

Table 1. Characteristics of Sign Language Courses Offered as Part of the Undergraduate Pharmacy Curriculum Among Responding Universities in Brazil (n=18)^a

	Courses No. (%)
Classification of Sign Language	
Mandatory	-
Elective	18 (100)
Nature	
Theoretical	14 (77.8)
Theoretical-practical	1 (5.6)
Not described	3 (16.7)
Course year	
Third year	1 (5.6)
Fourth year	1 (5.6)
No predetermined year	16 (88.8)
Workload	
< 60 hours	7 (38.9)
60 hours	9 (50)
>60 hours	2 (11.1)

^a Study data were obtained from the websites of undergraduate pharmacy programs at Federal Institutions of Higher Education (FIHE) in Brazil in 2017

Table 2. Themes Identified in the Contents of Sign Language Courses in the Undergraduate Pharmacy Curriculum Among Respondents in Brazil (n=18)

Themes	Description	Courses, No. (%)
Teaching and learning of sign language	Presents aspects of sign language teaching, language diffusion, and communication practices in sign language	18 (100)
Deafness: clinical, educational, historical, social, and anthropological aspects	Presents biological, historical, sociocultural and linguistic aspects of the deaf and their social insertion	12 (66.7)
Public policies and legislative aspects	Presents policies and legislative aspects related to deafness and Brazilian sign language	4 (22.2)

results of this study can be used to discuss the planning and implementation of courses that teach sign language in pharmacy schools in Brazil and around the world. In Brazil, the National Curricular Guidelines for undergraduate programs in pharmacy were published in 2002. However, there is no mention of the competencies required for providing care to minority groups, such as deaf patients. In the United States, the Accreditation Council for Pharmacy Education (ACPE) Standards require that graduates demonstrate competency in providing patient-centered care, including the ability to address issues of cultural diversity and "demonstrate sensitivity and responsiveness" to culture, disability, and other aspects of diversity when interacting with patients and caregivers.²⁶⁻²⁸

Oliveira and colleagues evaluated 24 undergraduate programs of study (nursing, physical therapy and dentistry) in Brazil and found that 14 (58.3%) offered sign language instruction with 12 (87.7%) being elective courses.²⁹ According to Souza and Pozzori, simply offering an elective course in sign language may not stimulate students' interest. This may be because they do not understand the importance of sign language in professional practice.³⁰ The need to provide humanistic and integral care to minority groups, including deaf people, may require those in higher education to expand the discussion on this important topic.

In most of the pharmacy schools analyzed, students could take the sign language course at any time during their studies. In health professions education programs in other countries, content related to deaf culture and sign language is most commonly taught early in the curriculum.^{16,31-34} A study by Smith and colleagues found that students had lower discomfort when interacting with people with disabilities in the last year of their pharmacy undergraduate curriculum than in their first year, possibly because of the training they received earlier in their academic career.¹⁸ There is no problem with taking the sign language course at any time during pharmacy studies. However, after acquiring clinical skills, students may be more mature and sensitive to understanding the low health

literacy and bigger health needs of patients with deafness, and better at facilitating communication and management of pharmacotherapy for these patients.

Sign language is a visual-spatial language and has a completely different structure from oral-auditory language.³⁵ The methodology used to teach a sign language course should avoid the superficiality of the conventional teaching-learning process and include theoretical-practical content. Our study found that most sign language courses had workloads greater or equal to 60 classroom hours. Considering the curricular demands for training pharmacists, 60 hours seems like a reasonable amount of time to devote to this area. Ideally, time spent teaching pharmacy students how to care for deaf patients should be distributed throughout the pharmacy curriculum. Therefore, more educators should be trained to teach communication skills with minority groups, including deaf people.

An elective program in medical education in Ondokuz Mayıs University (Turkey) and a mandatory sign language course in the Undergraduate Dental Programme curriculum at The University of the West Indies (Jamaica) used 50-120 hours in order to allow the students time to master the skills and build self-confidence in their use of the language.^{34,36} According to the literature, theoretical-practical disciplines have enhanced students' knowledge about and reduced their discomfort in caring for patients with compromised hearing abilities through the use of patient simulation and interaction with actual deaf patients.^{16,18,31,34,37}

The study of the clinical, educational, historical, social, and anthropological aspects of deafness is essential to understanding the deaf community as a distinct cultural group.³⁸ All of the curricula we analyzed focused only on teaching and learning sign language. None mentioned teaching medical terminology in sign language or the aspects of pharmaceutical orientation and consultation with deaf patients, which highlights low application in health area. Learning sign language for specific health- and pharmacy-related terminology will improve students'

proficiency in sign language and enhance patient care and safety.

This study has some limitations. Pharmacy schools of Federal Institutions of Higher Education correspond to only 8.5% of all pharmacy schools in Brazil, which makes it impossible to generalize our findings to other schools in Brazil and internationally.²² The other educational institutions in Brazil do not have to provide their complete curriculum on the website. Furthermore, in Brazil on-line syllabi which document instructional plans and details of the instructional process are not commonly available. This study also focused on a single nation in South America.

CONCLUSION

This study demonstrates that there is considerable room for improvement in teaching LIBRAS to undergraduate pharmacy students in Brazil. Despite that most of the pharmacy programs that we analyzed included a sign language course in their curriculum, the absence of course content regarding specific healthcare or pharmaceutical terms suggests that what is being taught is not adequate to ensure that students will be able to communicate with deaf patients.

In addition, our findings emphasize the need to provide sign language course, discussions and exposure of students to real practice scenarios with these patients in undergraduate health professions education. Pharmacy schools should consider revising their curriculum to better prepare students to provide humanistic and integral care to deaf patients.

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