ADDRESSING THE LACK OF MEDICAL SPANISH COURSES WITHIN THE CALIFORNIA HIGHER EDUCATION SYSTEM

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ABSTRACT

The Hispanic population within the United States has been steadily growing since the 1970's, so that today it comprises the second largest group. In conjunction with this, Spanish is the second most spoken language within the home with about 62 percent of the population using it to communicate (Dietrich and Hernandez). Despite this, Latino or Hispanic physicians only make up about seven percent of active physicians in the United States. Preventing Spanish speaking or limited English proficient patients from receiving adequate medical care, since it has been shown that the language barrier is responsible for a 20% increase in harm to the patient, when compared to their English speaking counterparts (Divi et al.). Patients most often use family as language brokers, which again can cause negative impacts on patient care due to mistranslations or omissions. Therefore, it is imperative that we encourage more people interested in the medical field to learn how to communicate with their patients through Medical Spanish courses.

The ideal population with both the time and ability to learn the required medical terms would be undergraduate students that are interested in developing adequate language skills to effectively communicate with their Spanish speaking patients in the future. However, the California higher education systems do not have sufficient courses to teach undergraduates the Medical Spanish that they can use in their future careers. Across the 148 California campuses, including the California State Universities (CSUs), California Community Colleges (CCCs), and Universities of California (UCs) there are only 79 courses. We used their course offerings to outline the structure for a Medical Spanish program on the University of California, Riverside campus. There will be a minimum of two Medical Spanish courses, which is in line with the CSUs. Additionally, the courses will be 4 units and require that students have an intermediate

knowledge of the Spanish language, based on the information collected from the course catalogs of the UCs and the CSUs.

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POPULATION BACKGROUND

Steadily since the 1970's the Hispanic population has continued to spread across the country, with the highest percentages settling within three states: California, Florida, and Texas. However, in recent years the population has grown most notably within South Dakota and North Dakota (Funk and Lopez). Within the past few years, since 2010, the population demographic within the United States has changed drastically, with the Hispanic population increasing by fifty percent. This is best seen within California, where there are a total of five counties with the highest percentage of Hispanics in the nation. These counties include Los Angeles, with the highest percentage in the nation, followed by Riverside, San Bernardino, San Diego, and Orange (Passel et al.). Altogether, according to the 2020 census, the Hispanic or Latino population makes up the second largest population within the US after white Americans (Jensen et al.). In accordance with this, the languages spoken have also changed. From the 1980's the various languages spoken outside of English have increased threefold from around twenty three million to sixty eight million people. The second most spoken language is Spanish at around sixty two percent of the population, when evaluated in 2019 (Dietrich and Hernandez). Furthermore, of the sixty two percent around thirty nine percent speak English with limited proficiency. Consequently, the Spanish speaking population within the hospitals has increased. Although it is difficult to estimate the number of Spanish speaking patients across the United States, one study predicts that there are at least nine million that have limited English proficiency (Fernández and Pérez-Stable). Within California hospitals it is easier to predict, with one estimation of around twelve percent or approximately two million of the patients preferring to speak Spanish rather than English ("Preferred Languages").

According to the Association of American Medical Colleges, or AAMC, within approximately six thousand hospitals, including community, federal, and non federal hospitals there are around nine hundred thousand practicing physicians with an MD ("Fast Facts"; "Active Physicians With"). Despite the large number of open hospitals and working physicians, approximately only seven percent of actively practicing physicians identify as being Hispanic or Latino ("Active Physicians Who"). The lack of representation of Latinos or Hispanics within healthcare and specifically within the physician population demands the use of outside resources and considerations for these patients. Specifically, healthcare systems must employ medical interpreters or other forms of translators to enable Spanish speaking patients to receive their health information in their preferred language.

The majority of patients rely on their family to translate for them. This phenomenon is called language brokering, which most frequently consists of a child or adolescent from the same family translating not only the direct words from the healthcare provider, but also the cultural context (Martinez et al.). Although in some circumstances communications that are simple in both translational terms and without complex cultural nuances, language brokering is an acceptable interaction to aid the patient in receiving care. However, in circumstances that require more complex translations or draining emotional situations, such as a terminal diagnosis, the language broker is placed in a compromising position. A child may not be capable of relaying difficult information if they feel it would hurt their family member. Or there could be a miscommunication between the provider and patient due to the incorrect translation of the instructions. Additionally, depending on the role of the language broker they could be sharing some information over others, or a bias, which could inevitably hurt the patient. Lastly, the language broker role is often taken by that of a family member, which in certain circumstances,

such as the discussion of reproductive health or other personal information, may cause a strain in the relationship between patient and broker (“Why Medical”).

Due to the negative associations of using a child language broker, having a trained and certified medical interpreter is thought to be the best solution for limited English proficient speakers. In 2021, there were approximately seventy thousand medical interpreters and translators within the United States. Although there is a slight difference between the responsibilities of interpreters and translators, in which translators focus on written materials and interpreters specialize translation within a dialogue between patients and their providers, colloquially the two words are used interchangeably (“Interpretation and Translation”). Additionally the need for interpreters is estimated to increase by twenty percent in the next eight years in response to the changing population (“Interpretation and Translators”). However, despite the growing demand there is still an insufficient number of interpreters in comparison to patients with limited English proficiency.

Medical interpreters and family translators are important for patient care as they are responsible for connecting the patient with the provider; however, with the continued changes in healthcare availability, many patients are unable to have either a language broker or trained interpreter, which has been shown to contribute to patient harm. According to one study that reviewed data from six different hospitals, patients with limited English proficiency experienced more adverse events in comparison to English proficient patients (Divi et al.). Adverse events are considered anything that was given to the patient or omitted or misunderstood by the patient, that causes the patient suffering outside of their diagnosis. Specifically, across the six hospitals there were a total of nearly one thousand adverse events. Of these events, around fifty percent caused direct harm to non-native English speaking patients in comparison to the thirty percent of events

that caused harm to native speakers (Divi et al.). This indicates that there is a relation to language barriers and physical harm in healthcare.

INTRODUCTION

To combat the harm that native Spanish or limited English proficient patients face within the medical field, we must increase the use and practice of Medical Spanish. Medical Spanish is the Spanish language in the context of the medical fields (nursing, medicine, etc.) and is typically employed by medical interpreters. However, other health professionals such as physicians and nurses are able to communicate with their patients in the languages that they know. Regardless of who is translating between patient and provider, California requires that all hospitals provide interpreters in the patients' preferred languages every day of the week either present in the hospital or through an online format ("Language Assistance"). Additionally, these services are to be paid for by the hospital rather than the patient, reducing the burden on patients and providing them the services they require. This helps with addressing the language barrier that often prevents non-native English speakers from obtaining adequate medical care.

As previously stated, there are too few physicians and resources for patients that can not communicate in the English language; therefore, we have to teach healthcare professionals the terminology required for communicating with their Spanish speaking patients. However, many physicians are burnt out due to the stresses of their positions, so that encouraging physicians to take on the work of learning medical Spanish terminology, as well as cultural contexts, is not a feasible answer. Including medical Spanish programs into the curriculum of medical students is also difficult due to the demands of the material, and therefore is also less realistic. The population that would benefit the most from medical terminology and would be more capable of fitting it into their schedule would be undergraduate students. In light of this, there must be undergraduate courses that prepare students to understand medical terminology and cultural context, with practical experiences, such as dialogues, immersed into the coursework. The

structure of the classes that provide Medical Spanish materials are important in preparing future healthcare workers to serve Spanish speakers.

Despite the significance of this issue, the University of California (UC), California State University (CSU), and the California Community College (CCC) systems offer few opportunities to their students to learn Medical Spanish. The few classes that are offered to undergraduate students vary in the prerequisite Spanish courses, from no previous experience to intermediate Spanish language, thus under-valuing the importance of a basic understanding of the Spanish language, which can lead to gaps within a student's conversational skills.

The undergraduate system in California should take the lead in providing a comprehensive Medical Spanish education, including courses with resources to learn the language and the cultural influence. This would greatly improve the quality of care for the Spanish speaking population. To that end, the University of California, Riverside (UCR) is ideal for a Medical Spanish program, as there is a large Spanish speaking population and the campus has the goal of serving the underserved population of Riverside. In addition to being a campus with the goal of serving the underserved since 2008, UCR has been classified as a Hispanic Serving Institution, or HSI, defined as an accredited university that contains a population of Hispanic students greater than twenty five percent ("White House"; "Hispanic Serving"). The Riverside Community has a high percentage of native Spanish speakers, a total of forty one percent, who frequently experience miscommunication and subsequent confusion with their healthcare (Rumbaut and Massey; Al Shamsi et al.). By increasing Medical Spanish proficiency within the pre-health undergraduate community, Spanish speaking patients will be better served in the future. The aim of this project will be to investigate the educational gaps that exist in higher education which contribute to a negative impact on the care of non-native English

speakers. This will be done by conducting a systematic assessment of the UC, CSU, and CCC course catalogs for Medical Spanish options. Reviewing syllabi and prerequisites within the different higher education systems is crucial in understanding the successes and failures of previous coursework to generate a Medical Spanish program within the University of California, Riverside that will vastly improve students' abilities to provide care.

METHODS

The initial collection of Medical Spanish or health professions preparation course data was obtained via the most recent edition of a university's course catalog. Initial course research was undertaken for the Universities of California, also known as the UCs, followed by the California State Universities, or CSUs, and by the California Community Colleges, or CCCs. The search included information from the one hundred and sixteen CCC campuses, the twenty three CSU campuses, and nine undergraduate UC campuses. All of the higher education available course offerings for undergraduate students from each campus was recorded. Although these campuses may have contained offerings for graduate students or extension programs for undergraduates, the focus for this research was on courses within the undergraduate curriculum.

The search function of each catalog was used to determine the available undergraduate curriculums that incorporate medical terminology, translation, and interpretation in the Spanish language. Examples of how the search tool was used are as follows: catalog keywords such as "Medical Spanish," "Spanish for the Health Professions," or "Health Spanish." However, if these words did not return any searches, an additional search would be completed by reading the descriptions (course description) of all of the Spanish courses that were offered at the university. The catalogs also functioned to report course titles, course descriptions, applicable units, and any course prerequisites. Initially, all data was collected onto a single document and then transferred to another document for the data analysis. The names of the colleges were paired into columns that contained the number of courses, the units required for the course(s), and the prerequisite courses. Further research was then done on the prerequisites required for each course and were categorized into the following: None, Prior Language Knowledge, Elementary Language Skills, Intermediate Language Skills, and Advanced Language Skills. Additionally, the number of

courses and the skills required for each were gathered.Numerical data was calculated for the average number of units required for each higher education system from taking the average of the general courses from each campus. As the majority of courses from the same campus were under the same number of units, only one data point for units was obtained per campus. Recorded data guided the study to determine the pitfalls of current undergraduate Medical Spanish offerings and to structure the course offerings at the University of California, Riverside.

RESULTS

Through the individual catalog searches we determined that the majority of Medical Spanish classes can be found within the Universities of California, followed by the California State Universities, and lastly by the California Community Colleges. We found that throughout California and the 148 undergraduate campuses there are only around seventy nine Medical Spanish courses.

Specifically, within the nine undergraduate UC campuses a total of seven courses or around seventy eight percent were found that included Medical Spanish classes (fig. 1). Across the twenty three California State University campuses only fifteen or sixty five percent have Medical Spanish courses (fig. 2) and across the one hundred and sixteen California Community College campuses there are only twenty seven or twenty three percent that have preparatory courses for health students interested in speaking Spanish with their future patients (fig. 3).

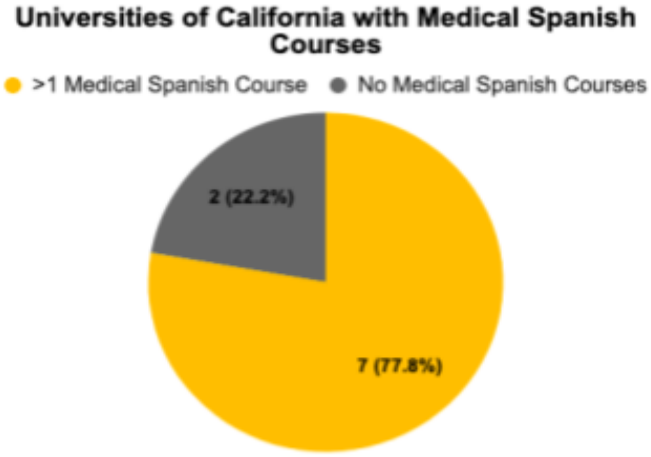

Figure 1. The percentage of Universities of California with medical Spanish courses.

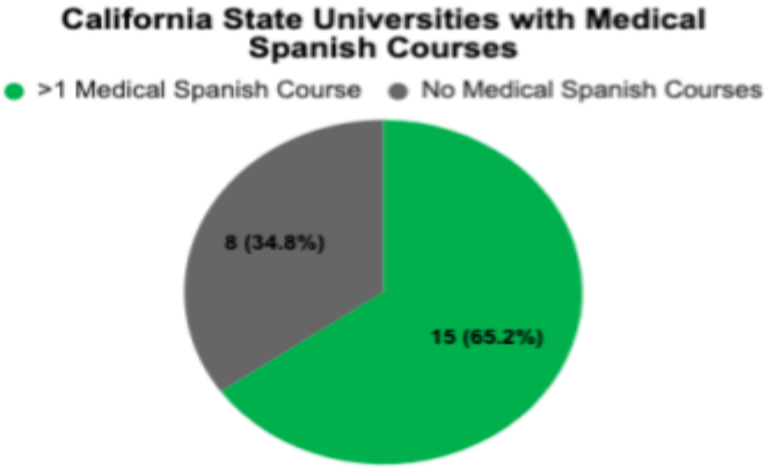

Figure 2. The percentage of California State Universities with medical Spanish courses.

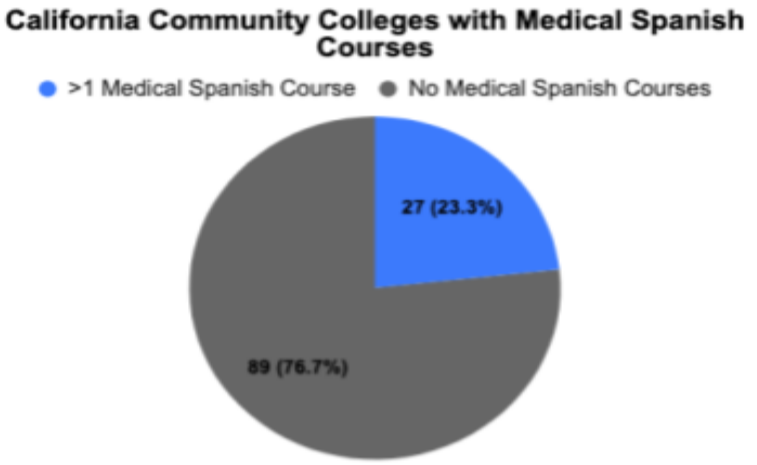

Figure 3. The percentage of California Community College campuses with medical Spanish courses.

For the campuses that did contain at least a single Medical Spanish course within the undergraduate curriculum, the number of courses at each campus were then analyzed to determine how many courses were offered. The California State Universities have the greatest number of courses per university with an average of one or two courses (fig. 4). The highest number of courses found on a single campus were four courses per campus. The California Community Colleges and the Universities of California have the same average course number,

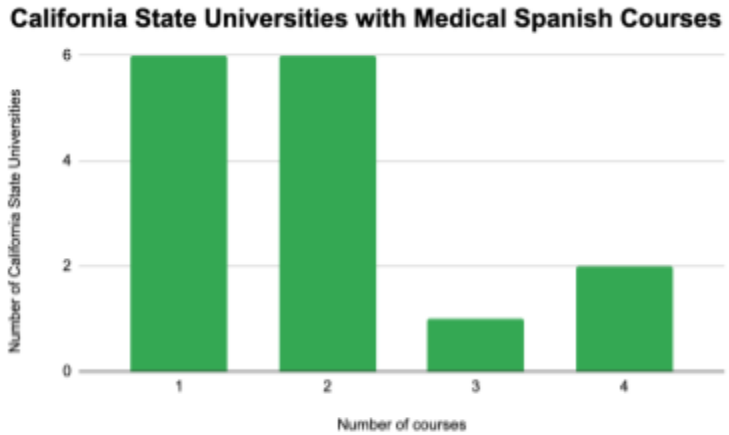

Figure 4. Number of medical Spanish courses within the California State Universities

only providing a single course in Medical Spanish for undergraduate students per campus (figs. 5 and 6).

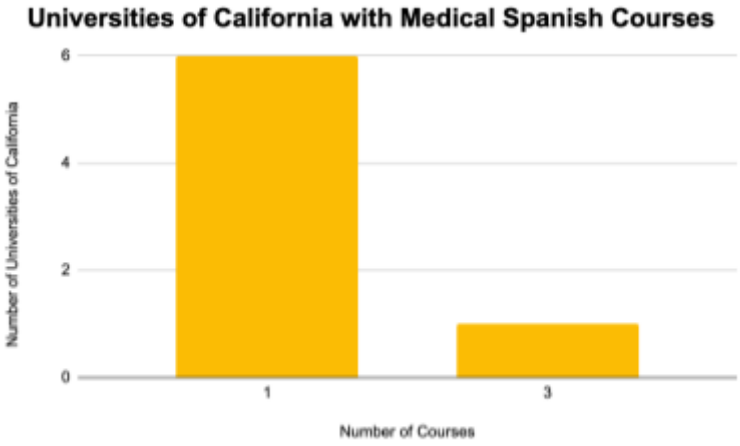

Figure 5. Number of medical Spanish courses within the Universities of California

Figure 6. Number of medical Spanish courses within the California Community Colleges.

Each of the courses that were listed had accompanying units. For the Universities of California the average units for the courses were 4 and for both the California State Universities and California Community Colleges they were an average of 3 units. Lastly, further analysis was done of the prerequisites required for each course at the higher education campuses. Each higher education system demonstrated varying requirements for similar Medical Spanish courses. The University of California had the majority or fifty seven percent of their courses requiring Intermediate Language Skills (fig. 7). Although at a lower frequency, the majority or fifty three percent of the California State Universities similarly required intermediate language skills (fig. 8). Lastly, the California Community Colleges varied the most in the requirements for Medical Spanish, but the majority, around forty eight percent, did not require any previous language knowledge (fig. 9).

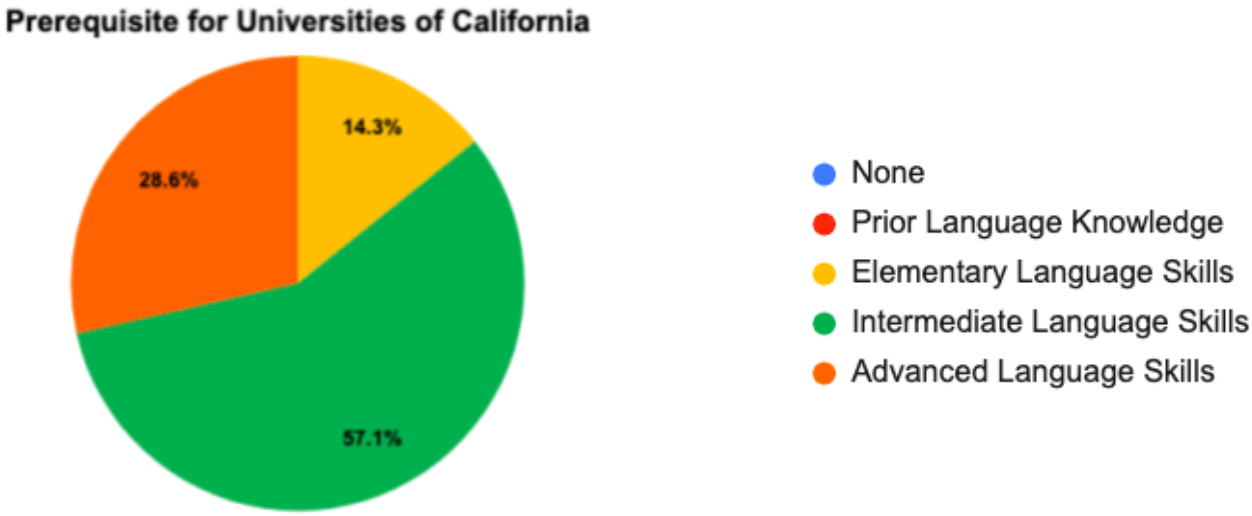

Figure 7. Percentage of prerequisites within the Universities of California.

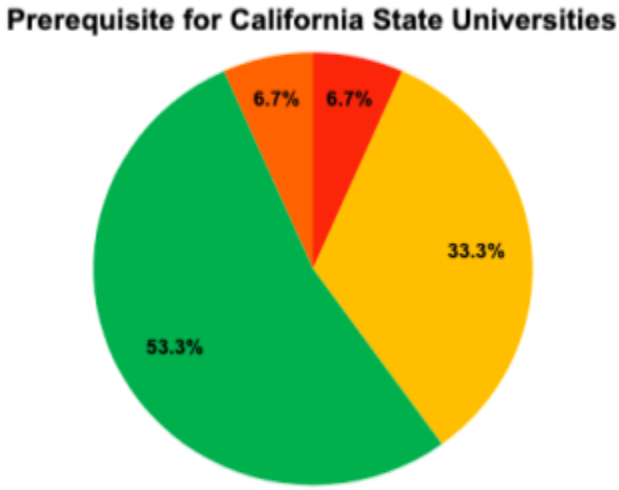

Figure 8. Percentage of prerequisites within the California State Universities.

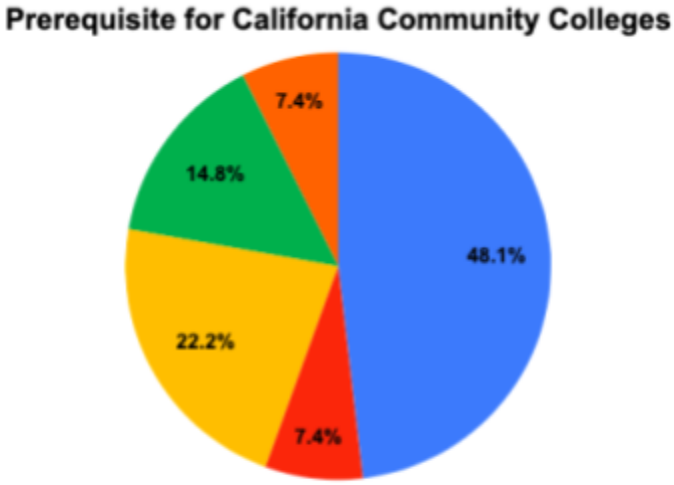

Figure 9. Percentage of prerequisites within the California Community College.

DISCUSSION

Using the analyzed data from the college catalogs, we were able to understand the educational gaps that occur within language courses throughout the state of California. Specifically, we parsed out the varying characteristics of each of the Medical Spanish courses available to undergraduates in the higher education systems. There were obvious variations when we compared the number of courses, prerequisites, and the materials discussed. This information helped us determine what a well-rounded Medical Spanish course should include. Focusing on the averages from each higher education system, we were able to outline a program within the University of California, Riverside that mimicked either the average or minimum amount of each course characteristic of the other education systems.

The initial proposal was based on the number of courses within the majority of California State Universities. The California State system had a higher number of offerings than both the Universities of California and the California Community Colleges, where the majority of campuses offering Medical Spanish had one or two courses. Therefore, for the program on UCR's campus, we set the number of courses in Medical Spanish to at least two.

The second core portion we evaluated was the language skill level the undergraduate students were required to have before they enrolled in the courses, or the prerequisites. For our purposes, we based this on two higher education systems. Specifically, we mirrored the Universities of California and the California State Universities since their language requirements were the most demanding in order to enroll in a first course. Consequently, we required that all students have at least an intermediate level of Spanish before entering the course. The intermediate level can be determined using the established system of language testing at UCR, in which all students interested in taking a language course are required to take an online language

course and depending on the level, may also have to speak with a professor to establish knowledge of the language. As the second course is a continuation of the first Medical Spanish course, the only requirement would be that the student would have taken and successfully passed the first course. Additionally, due to the large variances within the Medical Spanish courses, students would be unable to transfer units from another Medical Spanish course taken outside UCR.

The last essential portion of the curriculum structure is the number of units that are offered to the students. As the majority of students are required to take a minimum of twelve units each quarter, it is essential that the course counts towards this number. Too low of a unit number would discourage students from taking the class. Following the data from the Universities of California we determined that both of the Medical Spanish courses should be at least four units, which is standard for UCR's language courses and corresponds to the amount of work to be completed by the students.

Although the structure of a course would follow the above format, the implementation of the course within the university requires several steps, including discussion with the deans from the College of Humanities, Arts, and Social Sciences or CHASS and the College of Natural and Agricultural Sciences or CNAS. Although the dialogue could also be extended to all colleges to allow students from the other two to gain credit for these courses.

To begin to integrate Medical Spanish courses into the University of California, Riverside and familiarize the student body with them, implementation of the course at a smaller level would be ideal and allow for setting a strong syllabus that met the needs of the UCR community. To that end, we would first propose an R'Course, which is a unique one unit course on UCR's campus that allows undergraduate students to create a course that is taught to other

undergraduate students (“Original Topics”). This course is tailored to the undergraduate student’s interest and goes through several phases of implementation. Initially the student has to find a faculty mentor with a background that is similar to the course (“Teach a Course”). The professor will also support them throughout, specifically in the design, which consists of constructing the syllabus and compiling resources. Once the course has been established the faculty mentor will also become an advisor for the duration of the class. During the developmental stage, the undergraduate student must take Education 102 also known as Democratic Pedagogy (“R’Courses”). This course is essential in understanding not only how to teach a course, but also classroom techniques that will facilitate learning and communication for use in a classroom setting. After these steps have been completed, along with the approval of the course by the R’Course Coordinator, one is able to teach other undergraduates about their topic of interest. Therefore, the creation of an R’Course, is a crucial step in the implementation of a successful program that incorporates the learning strategies required for Medical Spanish and the unique interests of the student body. The input from students would allow for further customization of the course, as well as what the material should be emphasized. This would then allow for the growth of Medical Spanish into a formidable college course worth four units.

LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS

The limitations of the study are present primarily in the methods used to collect the course data, as it depends on the assumption that all catalogs have been updated with the current academic year and that they do not contain any errors. Therefore, if any courses were not listed in the course catalog, they would not have been factored into the analysis. In a similar manner, if the keywords such as “Medical Spanish” or “Spanish for the Health Professions” were not found and no translation or interpretation descriptors were used within the Spanish courses, the courses would be excluded. So there is the risk that if any class descriptions did not include these, the course or courses were not considered for further analysis. All of the course data was collected from the undergraduate campus and analysis did not contain any information from extension centers or courses that were available to special programs, such as the nursing degrees or continuing education degrees, meaning the analysis reflected only that available to undergraduate students. Lastly, due to the utilization of current catalogs, the data will not be accurate if there are changes to the curriculums in the coming years. This means that in order to have robust Medical Spanish courses that align with other California institutions, continued research on this subject would need to be done every few years. As demonstrated within the data, each of the higher education systems contains its own respective system and structure for Medical Spanish courses, and UCR would need to ensure that they were adequately preparing their students to be competitive within that space.

We have shown the importance of understanding the gaps in Medical Spanish through the collection of course catalog data from the various California higher education systems and how creating a sufficient Medical Spanish education within the University of California, Riverside would contribute to improving health in the underserved. However, the research

conducted is only an initial step in the creation of a Medical Spanish program within the university. Further research should be conducted that emphasizes pedagogy. Specifically, the materials that are created and their format within the classrooms, with a focus on medical terminology, cultural contexts, and practice simulations administered in the classroom setting.

To do this additional research, focus on materials from other Medical Spanish courses at institutions outside of California may be used to assist in modeling a program at UCR. For example, the Medicina Scholars program within the University of Illinois, Chicago supports pre-health Latino students initially by providing advising (Guzman). And, within this program they recently implemented a Medical Spanish course called "Temas de Salud." This course was produced with the goal of aiding the Latino students that were already in the Medicina Scholars program to learn a portion of the medical terminology they would need in their medical careers (Ortega et al.). As the reasoning behind the Medical Spanish course on UCRs campus is similar, modeling our own course on the components of "Temas de Salud" would tremendously benefit the undergraduates. According to Pilar Ortega, the main themes of this course are health knowledge, Spanish terminology, sociocultural contexts, and understanding medical learning formats (Ortega et al.). Additionally within Ortega's study, it was demonstrated that the success of the program was in providing students with Medical Spanish knowledge. Through the completion of surveys, they determined that around ninety two percent of their students had applied the information that they learned in the course outside of the classroom setting (Ortega et al.). Although there are several other similar courses within the United States, this course is crucial due to the four main components within it that address both the language requirements and the cultural contexts that are crucial in providing successful care to patients.

An additional area of research should be conducted around the use of Medical Spanish programs to certify undergraduate students as medical interpreters. Although there are several medical interpretation programs within extension centers and through community colleges for students that are interested, none are embedded in the universities or easily accessible due to the fees that correspond to them. If taken as an undergraduate course with accumulation of units, as well as the benefit of certification, it would allow better access to becoming an interpreter. Currently, UCR's medical interpretation course costs an additional six hundred dollars, which many undergraduates cannot afford on top of their tuition of thirteen thousand dollars ("Medical Interpretation"; "Cost"). Due to the extra cost, students are either discouraged from or are unable to afford taking the course and becoming an interpreter.. Therefore, a dual program that contains both the components of the Medical Spanish course, such as the cultural context, as well as training for the medical interpretation certification, would likely be successful in recruiting students and preparing them for their future careers, as the certification process would allow them to work within the medical field without previous medical training.

Finally, UC Riverside's School of Medicine contains a four year designated emphasis in medical Spanish through the Hispanic And Bilingual Ambulatory Medical Studies or HABLAMoS program. The program is available to first year medical students and requires the students to complete a minimum of 200 hours throughout their four years by interacting with Spanish patients in clinical settings ("Medical Spanish"). So an additional line of research would be to set up a program that connects students from the undergraduate campus and the medical students within HABLAMoS. This may contribute to more undergraduate students being comfortable speaking about medical terminology and conditions. Plus, it would introduce

undergraduate students to medical students that are also learning to communicate with Spanish patients, reinforcing their learning.

CONCLUSION

Through the in-depth study of the course catalogs, with an emphasis on all Medical Spanish courses and programs open to undergraduate students from California's higher education systems, including the California State Universities (CSUs), California Community Colleges (CCCs), and Universities of California (UCs), we have outlined the needs for a course within the University of California, Riverside. There is not yet a Medical Spanish program within UCR's undergraduate division, but there are two from the School of Medicine and extension center. However, due to budget or education level these are unavailable to undergraduate students. Based on the analysis of the current course offerings to undergraduate students across California, the structure of the course to be implemented at UCR has been established. Specifically, 2 courses would be proposed, with pre-requisites of intermediate Spanish and each course receiving four units of credit.

The implementation of the course should begin with the creation of an R'Course led by an undergraduate student to determine the requirements and interests of the Riverside community. Once the undergraduate courses are implemented, further research should be conducted to ensure the courses remain relevant, as well as investigation into whether the implementation of a certification process or connection with the HABLAMoS program would enhance the learning of the undergraduate population.

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