Title: The Influence of Pre-Trip Medical Spanish Education on a US-Based, Medical Student Service Trip

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Discussion Points: How can #MedicalStudents or #StudentDoctors make the best of #InternationalService trips? Will #MedicalSpanish classes in #Medical School increase the confidence and experience of students abroad? #PublicHealth #Underserved #Spanish #ServiceLearning

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ABSTRACT.

Background: International service trips are increasingly common in medical school curricula. Medical Spanish is an essential tool in healthcare interactions with Spanish-speaking patients globally. Medical Spanish classes are offered at many medical schools, but it is not known whether they increase confidence for medical students on Spanish-speaking service trips.

Methods: Medical students attending one of two sister campuses completed pre- and post-international medical service trip questionnaires. Data collected includes participant demographic information, confidence levels, and perceived experiences. Data analyses involved a multivariable regression assuming an ordered multinomial response, FREQ procedure, and the GLIMMIX procedure on SAS STAT v.9.4. Significant differences were declared at $p \leq 0.05$.

Results: Demographics significantly associated with confidence categories are female sex, length of Spanish education, previously having lived in a Spanish country, and experience speaking Spanish with patients. Confidence communicating in Spanish shows the highest gain in significant categories post-trip while confidence working with interpreters and feeling adequately trained to treat Hispanics showed the lowest. Participants having taken Medical Spanish before did not improve their confidence. However, participants with prior Medical Spanish experience reported significantly higher benefit from this education in that it gave them an advantage and helped them connect better with patients.

Conclusion: Our findings reinforce the importance of language-concordance and confidence in patient interactions while demonstrating that prior Medical Spanish experience may not significantly improve confidence on a Spanish-speaking international trip, especially among non-fluent students. Spanish experience and proficiency should not be a deterring factor for students looking to go on a medical trip.

Key Words:
MeSH: *Students, Medical; Public Health; Travel Medicine; Education, Medical*
Not in MeSH: Medical Spanish

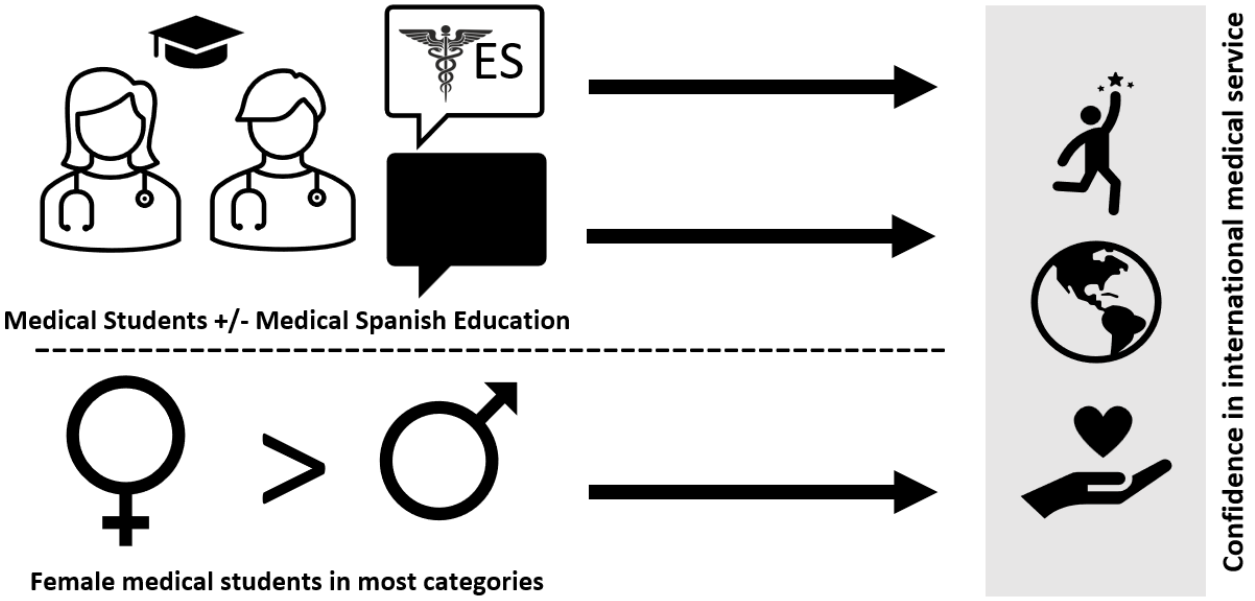

Figure 1: Graphical abstract showing that both prior and lacking prior Medical Spanish experience does not limit confidence or experiences on international medical trips. Additionally, female medical students had more categories with statistically significant confidence levels.

INTRODUCTION.

International trips and service learning have been increasingly used as educational tools for medical students since the 1990's.[1] Benefits of global service-learning trips include exposure to healthcare disparities and increased cultural sensitivity.[1] Many medical students perceive global health opportunities as favorable due to the benefit of improving clinical knowledge,[2] communication skills,[2] and self-reported clinical or language skills.[3] Beyond clinical experience, these trips enable an understanding of global health disparities, cultural sensitivity, and empathy toward patient's backgrounds[4]. Experiences like these can instill a sense of social responsibility, inspiring students to advocate for global health equity and address healthcare inequalities upon their return[5]. While global service trips have increasingly been studied, medical student confidence and experiences relating to prior Medical Spanish has not.

Medical Spanish courses offered at Rocky Vista University differ based on campus, instructor, level of student, and even semester taken. However, they typically contain some commonalities which include the following: essential vocabulary and common phrases for communicating in medical encounters spanning the various body systems, basic grammar reviews, and cultural tips for interacting with Spanish speaking patients from diverse areas and backgrounds. Methods of teaching also vary but include online and in-person sessions centered on interactive situational practicing with partners, groups, and standardized scenarios.

As Latin America is a popular destination for American medical student global service trips, one may assume Medical Spanish education could be beneficial pre-trip. Most medical schools in the United States offer Medical Spanish courses in formal curricular or extracurricular programs; many classes have a standard course length of 10 weeks.[6] These courses are created to increase student language and cultural competence,[7] yet have little research in their efficacy for international trips. There is a general recommendation for students to take a cultural class and learn some of the host country's language prior to a trip,[8] and studies show that students in a peer-led, interactive Medical Spanish course for credit have improved self-ratings and demonstrate increased markers of Spanish fluency.[9] However, not all international medical trips offer a language course tailored to the population of interest, there are not standardized courses, and only a small percentage of schools provide clinical experiences abroad where students can implement their language skills.[10]

However, brief Medical Spanish education does not equate to medical interpretation competency. Often, medical service trips utilize interpreters to facilitate communication[11] which may increase medical student comfort and confidence in the patient interview. However, if there are few to no qualified or trained interpreters on a trip, Medical Spanish and a basic understanding of the Spanish language could provide an advantage to those students. Untrained interpreters may convey incorrect information for the patient and increase the risk of poor outcomes.[12] This may negatively impact the experience for medical students, especially those who do not speak the language of the population with which they are interacting. To our knowledge, the influence of a Medical Spanish course on medical student's confidence pre- and post-global trip has not been studied.

This project aims to explore how a prior Medical Spanish education influences the self-perceived confidence and experiences of medical students before and after taking a one-week global medical trip to a Spanish-speaking country, something that has not been encountered in the literature. These findings can be used to guide medical schools' interest in implementing Medical Spanish curriculum, provide students with

options for learning Spanish, and examine the effect of Medical Spanish classes on medical student confidence.

METHODS

Participants

Participants for this study were selected from the pool of medical students from Rocky Vista University who attended any of the three Spring break global medical trips. Students from Rocky Vista University are primarily white adults, between the ages of 20 and 40, and from the mountain West region. Trip locations included Ecuador, the Dominican Republic (DR), or Panama and were organized by the medical school. These trips took place over Spring break in March of 2023. All students attending the trips were contacted for participation. Inclusion criteria included medical students attending a global medical trip, participants 18 years or older, and participants who could answer the questionnaire independently (excluding interpretation, writing capabilities, or technological capacity). The exclusion criteria included non-medical students, medical students not attending a global medical trip, and participants younger than 18. Participant emails, obtained from the list of participants attending the three global trips, were the only identifying information collected. Participants received links via email to complete a Qualtrics questionnaire, both pre- and post-trip.

Questionnaire

Questionnaires were sent to participants pre-tip (one month prior to leaving) and post-trip (immediately on return with one month to complete) and were completed between February and April of 2023. The questionnaire took a total of 10-20 minutes to complete (5-10 minutes each, pre- and post-trip) and was developed in several parts. Participants were required to complete the pre-trip questionnaire prior to taking the post-trip questionnaire.

The first survey (pre-trip) collected participant demographics and then asked about their confidence levels. In the second survey (post-trip), participants reentered demographics, answered the same confidence questions, and answered new post-trip-specific questions regarding the trip and personal opinions on the benefit of Medical Spanish courses.[2]

The demographics section was designed from multiple studies and compared to established CDC categories. Questions, adapted from previous studies, were added regarding Spanish comfort levels,[13] Medical Spanish coursework,[13] and confidence.[14–16] Included in the demographics section was the question of a medical school track, which is a specialized pathway for students to gain additional learning opportunities while in medical school (ex. a Global Health track often teaches students how to work with interpreters and diverse communities).

Data management and data analysis

Data was obtained through a Qualtrics survey and compiled into an MS Excel spreadsheet for analysis. Likert score values were converted to numeric (from 1 to 5) however they were always analyzed as ordered multinomial responses. And were assessed using Spearman's Correlation, this part would establish the pairwise associations across variables. A regression model was used to identify relationships between the variables of interest, these morels were run assuming an ordered multinomial response distribution. All correlation analysis was performed using the FREQ procedure and the modeling was performed using the GLIMMIX procedure on SAS STAT v.9.4 (SAS Institute Inc. Cary, NC). Significant differences were declared at $p \leq 0.05$.

RESULTS.

Sample Size, Participant Demographics, and Prior Experiences

Of the 70 participants contacted for participation, 39 and 37 responded, pre- and post-international trip, respectively; two participants were lost to follow up. There was an average participant age of 26-27 years old (see Table 1). The cohort was represented by mostly white females of a European-American background, with a similar number of first- and second-year medical students.

The sample is English-dominant with a minority of Spanish-proficient speakers (see Table 2). Participants were equally enrolled in the Global Health Track (31%) or not involved in a track (23%). Although most participants had previous Spanish education (85%; 64% with more than two years of Spanish education), fewer participants received formal Medical Spanish education (33%; 27% with fewer than six months of Medical Spanish education). Regardless of education, reported Medical Spanish levels were low (46% of those who had Medical Spanish education reported a beginner level of Spanish proficiency). Most participants have interacted with Hispanic communities, both in general (92%) and clinical (85%) spheres, have visited a Spanish-speaking country (92%), have not lived in a Spanish speaking country (74%), and have experience speaking Spanish with patients (59%).

Demographics Analysis

Participant demographics and self-reported confidence levels were analyzed together using Spearman Correlation Coefficients. Results show an overall higher number of significantly correlated categories pre-international trip (see Table 3). Female sex was highly associated with pre-trip confidence in nearly all categories but only remained significant when explaining conditions (p=0.0099) and in overall average confidence (p=0.0178), post-trip. Some demographics showed no significant associations (age, Medical Spanish level) or associations that remained significant both in pre- and post-trip surveys [female sex (p=0.0270 and 0.0099, respectively) with confidence explaining medical conditions]. The only demographics significantly associated with confidence questions in the post-trip group were sex [confidence explaining conditions (p=0.0099), average (p=0.0178)], length of Spanish education [confidence taking complaints in Spanish (p=0.0425)], having lived in a Spanish-speaking country [confidence taking complaints in Spanish (p=0.0024), feeling adequately trained to treat Hispanics (p=0.0470)], and experience speaking Spanish with patients [confidence taking complaints in Spanish (p=0.0383)].

Self-Reported Confidence Analysis

Analyses of Spearman Correlation Coefficients among self-reported confidence questions show significant values in every category (see Table 4). Overall, the average confidence was significant for every category in both pre- and post-trip groups. Confidence communicating in Spanish showed the highest number of gains in significance from pre- to post-trip (4/8 categories) while confidence working with interpreters and feeling adequately trained to treat Hispanics showed the lowest (1/8 categories). Confidence in working with an interpreter had the highest number of losses in significance (3/8 categories).

Prior Medical Spanish Education Analysis

Separating participants by Medical Spanish shows no significant differences in experiences during and after the global trips (see Figure 2). However, participants who took Medical Spanish rated two questions significantly higher – they felt that taking a Medical Spanish course helped them connect better with patients and that their prior courses gave them an advantage on the trip (see Figure 2). It must be addressed that questions varied based on participants' status of Medical Spanish – those who have taken a class responded based on if they felt the Medical Spanish enhanced their experience while those without previous experience responded based on if they think taking a Medical Spanish course would have helped.

DISCUSSION.

Analysis of participant demographics with responses to confidence questions demonstrates many expected and unexpected outcomes. Some expected outcomes include significant associations of confidence speaking Spanish with patients to Spanish education, living in a Spanish speaking country, and previous experience speaking Spanish with patients. These findings, while expected, reinforce the idea that previous experiences with language and patient populations of interest prove useful in language- and culture-concordant patient interactions.

Interestingly, the female sex showed many significant associations with confidence across most questions, including feeling more confident verbally communicating with patients, working with an interpreter, explaining medical conditions, and feeling adequately trained to treat Hispanics. The explanation for these findings is unknown. In fact, previous research finds that female medical students demonstrate lower self-reported confidence in their abilities in medical school.[17] As far as we are aware, no studies have examined medical student confidence by sex with international educational medical trips.

Additionally, prior Medical Spanish education shows few significantly increased confidence levels in the pre-trip survey and no significant categories post-trip. While participants with prior Medical Spanish education are significantly more confident in their ability to engage physically with patients and ask sensitive questions (pre-trip survey), Medical Spanish does not significantly increase student confidence in speaking Spanish with patients, obtaining a medical history, or explaining managements and conditions to patients. These are unexpected findings – we expected that a better understanding of medical terms in Spanish would improve confidence in handling medical topics and previous research shows increased self-reported proficiency and preparedness in Spanish communication, post-Medical Spanish education, during clinical rotations.[18] These findings may be due to several factors, including the varying curricula established for Medical Spanish classes (i.e., the lack of standardized lesson plans across campuses), the duration and delivery of Medical Spanish courses (e.g., the varying timeframe for additional learning during medical school, the uncertainty of instructor qualifications, and the isolated classroom learning), the lower number of participants reporting past Medical Spanish education, and/or the reliance of medical students on interpreters to know the Spanish medical vocabulary. Additionally, while Medical Spanish takers are more confident pre-trip in these areas, the experience of working with trained interpreters during a service trip may equalize the language experiences of the participants, creating a more uniform presentation of confidence levels.

Data comparing confidence questions show additional expected and unique associations. Confidence in verbally communicating with patients in Spanish shows the highest increase in significant categories from pre- to post-surveys (4/9 categories). This is expected – the more experience one has speaking to a patient in their native language (whether directly or through an interpreter), the more likely they would be to engage with them, explain conditions and management, and feel adequately prepared to engage with this populations. However, confidence in verbal Spanish communication is the only category significantly associated with adequate training to work with the Hispanic population. These findings reinforce the importance of language-concordance to improve confidence in patient interactions, especially with preparedness to manage needs of Hispanic patients.

Unexpectedly, confidence working with an interpreter did not show many increases in category significance in the post-trip group. As the interpreter serves to bridge the communication gap between the

medical student and the patient, we expected more significant categories for those well-adjusted to working with an interpreter. This expectation was based on previous research findings that indicated increased confidence among medical students when working with interpreters[11]. However, pre-trip significance in verbal Spanish communication and explaining conditions and management did not persist after the trip. These findings may be attributed to variations in interpreter experience and overall lower self-reported experience speaking Spanish with patients (65% self-reported experience in the post-trip group).

Confidence in being adequately trained to address the needs of Hispanic patients shows persistent significant categories across both survey collection times. Categories of sustained significance include working with an interpreter, physically engaging with patients, and explaining conditions and management with patients. These findings demonstrate that adequate training to work with a specific population is an important factor in determining medical student confidence in various aspects of international patient care. Additionally, confidence in training showed significance in communicating verbally in Spanish with patients post-trip, attesting to the importance of an international trip as a training experience for medical students.

The post-trip questionnaire data, separated by Medical Spanish education, demonstrates no significant differences in experiences during and after the global trips, which correlates with previously discussed findings of Medical Spanish education and confidence. It may be that the number of participants having prior experience was too small or the duration of education was too short to significantly impact the international experience. Subjectively, those participants who previously took Medical Spanish feel that this additional education prior to the trip gave them an advantage and helped them connect better with patients compared to those who did not. This data is contradictory to the findings in participant confidence, and it may be that, while subjectively it appeared to help more, objectively it did not have a significant impact. As mentioned, a conceptual explanation of our findings is also possible; since a portion of the students are asked to respond on their perceived value for something they do not have, there is a possibility of a conceptual discrepancy among respondents. Students who took Medical Spanish in the past respond on their perceived appreciation while students who did not take Medical Spanish in the past respond on a hypothetical. These two notions may not be equal or even comparable. However, because overall appreciation for the trip is high, we know that this discrepancy may not be the top determinant of their experience. These nuances could be further investigated.

Limitations

This research is limited primarily by the location of the service trips (i.e., three locations that are all Spanish-speaking) and traveling experiences of the participants while on the service trip. These may confound some of the findings since each location has its own context with its own limitations and challenges that affect the overall perception of the trip. For example, while students at the Panama trip lived in the urban city and traveled fewer than two hours to their location sites, students in Ecuador lived in a much more rural setting with less access to resources. These differences may have influenced how students perceived their trip and the challenges associated with their location.

Additionally, the sample size was small (n = 39 pre-trip and 37 post-trip) and consisted of participants from sister campuses of the same university. It may not accurately represent the medical student body as a whole. However, this number is consistent with previous studies in terms of participant involvement.[19,20] Also, students may have been assigned roles on the trip where their interactions with the Spanish-speaking

community was limited. For example, many students rotated through the pharmacy in 2-hour shifts where this did not interact with patients but filled medications ordered by providers. This may have changed their perceived experience by decreasing their total patient exposure time, although the trip leaders rotated students through these positions to vary experiences and no student worked more than one shift.

Future Research

Although research on global medical trips for medical students is increasing, there is still a dearth of knowledge. Future research can investigate the effect of sex on medical student confidence in international trips and variations in Medical Spanish education on medical student confidence. As far as we are aware, no studies have investigated the influence of sex on confidence for international trips, although, as mentioned, prior studies show lower confidence among female medical students in medical school.[17] More research is needed to understand the "why" behind this variation – is it a social phenomenon? Can males achieve the same increases in confidence? Etcetera.

Additionally, increasing the number of countries, participants, and medical schools involved in the survey may yield results that are widely applicable across populations, students, and educational programs. Although participant participation is similar to other studies[19,20], limiting the scope of the data to three Spanish-speaking countries, 39 medical students, and two sister campuses does not yield the generalizability of results desired. If further research with higher numbers of the above categories finds similar (or different) findings, we may be able to make clearer decisions on the efficacy of Medical Spanish classes and explore/invest in other methods of enhancing international medical experiences for medical students.

Finally, the subjective experiences of students who have and have not taken Medical Spanish can be investigated to explore the nuances of perceived versus actual confidence. Qualitative data is increasingly useful in healthcare research[21] and its collection from participants would provide insight into the students' own written perspectives of their experiences; a quantitative-only description of the experiences does not accurately represent the entirety of the medical student experience and may hint at future directions that medical students desire for improved education.

SUMMARY - ACCELERATING TRANSLATION

This project aims to explore how prior Medical Spanish education influences the self-perceived confidence and experiences of medical students before and after taking a one-week global medical trip to a Spanish-speaking country. Key findings include 1) significant associations with confidence in verbally communicating with patients in Spanish, 2) significant associations with confidence being adequately trained to address the needs of Hispanic patients, 3) higher confidence levels of female participants across most categories, 4) no significant increase in student confidence with prior Medical Spanish in various categories, and 5) no significant differences in experiences during and after the global trips, regardless of previous Medical Spanish education. These findings reinforce the importance of previous, non-medical language experiences, patient population exposure, language- and culture-concordant patient interactions, and adequate training to work with Hispanic populations. Additionally, we find that lacking Medical Spanish education should not discourage medical students from participating in a Spanish-language medical trip. As such, school educators can encourage holistic exposure to medical and non-medical practices (to increase student confidence on international trips) and recommend Spanish-dominant, international medical service trips to students without prior Medical Spanish backgrounds (knowing that their confidence before and after will resemble those with prior experience).

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FIGURES AND TABLES.

Table 1. Participant Demographics, Pre- and Post-International Trip

Demographics	Pre-International Trip (n = 39)
Age [average (std dev)]	26.94 (4.22)
No answer	1
Sex	
Female	27
Male	12
Year in Medical School	
First-year medical student	17
Second-year medical student	22
Cultural background	
African	1
Asian	1
European	26
Hispanic	2
Mixed	3
Other	5
No response	1
Racial Origin/Lineage	
Asian	1
Black	1
Hispanic	2
Mixed	1
White	34

461 **Table 2**. Participant Experiences with Languages, Education, and Hispanic/Latino Communities
462

Language, Education, Community Experience	Pre-International Trip (n = 39)
Native Language	
English	35
Spanish	3
Russian	1
English Speaking Proficiency	
Not Well	0
Slightly Well	0
Well	0
Very Well	39
Spanish Speaking Proficiency	
Not Well	11
Slightly Well	19
Well	4
Very Well	5
Medical School Educational Track	
Academic Medicine and Leadership Track	5
Digital Health Track	3
Global Medicine Track	12
Long Term Care Track	0
Physician-Scientist Track	2
Rural and Wilderness Medicine Track	4
Urban Underserved Medicine Track	4
None	9
Previous Spanish Education (Class Format)	
Yes	33
No	6
Duration of Spanish Education	
<2 years	7
>2 years	25
Previous Medical Spanish Education (Class Format)	
Yes	13
No	26
Duration of Medical Spanish Education	
6 months	10
2 years	1
3 years	1

4+ years	1
Medical Spanish Level (Self-Reported)	
Beginner	6
Intermediate	4
Advanced	3
Interacted with Hispanic Communities (General)	
Yes	36
No	3
Visited Spanish-Speaking Country	
Yes	36
No	3
Lived in a Spanish-Speaking Country	
Yes	10
No	29
Duration Living in Spanish-Speaking Country	
1 year	2
2 years	6
5 years	1
No response	1
Clinical Experience with Hispanic Communities	
Yes	33
No	6
Experience Speaking Spanish with Patients	
Yes	23
No	9

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464 **Table 3.** Participant demographics & self-reported total confidence in the pre- and post-trip questionnaires
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	Pre-trip Total confidence			Post-trip Total confidence		
Coded Question	Estimate	Error	P-value	Estimate	Error	P-value
Age (each additional year)	0.041	0.049	0.4164	-0.020	0.021	0.3612
Rank						
OMS I	Reference		0.0523	Reference		0.8966
OMS II	0.346	0.172		-0.023	0.179	
Sex						
Female	Reference		0.0176	Reference		0.0178
Male	-0.449	0.181		-0.465	0.187	
Speak Spanish						
Not well	-0.778	0.263	0.0070	-1.111	0.287	0.0023
Slightly well	-0.702	0.245		-0.741	0.291	
Well	-0.083	0.327		-0.597	0.305	
Very well	Reference			Reference		
Academic Global Track						
No	-0.128	0.194	0.5145	0.105	0.200	0.6025
Yes	Reference			Reference		
Taken Spanish						
No	-0.333	0.243	0.1789	-0.392	0.198	0.0550
Yes	Reference			Reference		
SpanishHowLong						
Never	-0.323	0.256	0.4099	-0.320	0.207	0.1271
Under 2 years	0.053	0.241		0.230	0.240	
Over 2 years	Reference			Reference		
TakenMedSpanish						
No	-0.380	0.180	0.0418	-0.083	0.184	0.6536
Yes	Reference			Reference		
MedSpanishHowLong						
6 Months	-0.467	0.305	0.0053	-0.395	0.505	0.7534
1 Year	-1.889	0.411		-0.556	0.791	
2 Years	-0.444	0.411		2.9E-15	0.646	
4 or more years	Reference			Reference		
MedSpanishLevel						
Beginner	-0.259	0.325	0.1951	-0.852	0.334	0.0773
Intermediate	0.324	0.351		-0.528	0.366	
Advanced	Reference			Reference		

InteractedHispanics						
No	-0.306	0.334	0.3661	Not assessed		-
Yes	Reference			Reference		
VisitedSpanishCountry						
No	-0.145	0.337	0.6692	Not assessed		-
Yes	Reference			Reference		
LivedSpanishCountry						
No	-0.408	0.195	0.0434	-0.426	0.217	0.0571
Yes	Reference			Reference		
ClinExpHispanics						
No	-0.465	0.237	0.0579	-0.516	0.385	0.1894
Yes	Reference			Reference		
SpokenSpanishPatients						
No	-0.315	0.213	0.1502	-0.215	0.184	0.2523
Yes	Reference			Reference		

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467 **Table 4.** Participant post trip self-reported confidence Spearman correlation coefficients (top) and p-values
468 (bottom).
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	ConfComplaint	ConfCommunicating	ConfComplaintSpanish	ConfWorkInterpreter	ConfPhysEngaging	ConfAsking	ConfExplainingConditions	ConfExplainManagement	AdeqTrainedTreatHispanics	ConfAVERAGE
ConfComplaint	1	0.67554	0.18174	0.19628	0.35885	0.54833	0.21555	0.28474	0.2159	0.60276
		<.0001	0.1161	0.0892	0.0015	<.0001	0.0615	0.0127	0.0611	<.0001
ConfCommunicating	0.67554	1	0.35632	0.2511	0.54868	0.49117	0.35217	0.32371	0.22613	0.66906
	<.0001		0.0016	0.0287	<.0001	<.0001	0.0018	0.0043	0.0495	<.0001
ConfComplaintSpanish	0.18174	0.35632	1	0.33008	0.35605	0.25514	0.30385	0.24827	0.39353	0.61763
	0.1161	0.0016		0.0036	0.0016	0.0261	0.0076	0.0306	0.0004	<.0001
ConfWorkInterpreter	0.19628	0.2511	0.33008	1	0.48561	0.42392	0.45782	0.40471	0.60481	0.61082
	0.0892	0.0287	0.0036		<.0001	0.0001	<.0001	0.0003	<.0001	<.0001
ConfPhysEngaging	0.35885	0.54868	0.35605	0.48561	1	0.60335	0.56573	0.43803	0.48073	0.71636
	0.0015	<.0001	0.0016	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001
ConfAsking	0.54833	0.49117	0.25514	0.42392	0.60335	1	0.56853	0.5083	0.39651	0.7205
	<.0001	<.0001	0.0261	0.0001	<.0001		<.0001	<.0001	0.0004	<.0001
ConfExplainingConditions	0.21555	0.35217	0.30385	0.45782	0.56573	0.56853	1	0.66975	0.53402	0.71785

	0.0615	0.0018	0.0076	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001
ConfExplainManagement	0.28474	0.32371	0.24827	0.40471	0.43803	0.5083	0.66975	1	0.60386	0.72449
	0.0127	0.0043	0.0306	0.0003	<.0001	<.0001	<.0001		<.0001	<.0001
AdeqTrainedTreatHispanics	0.21759	0.22613	0.39353	0.60481	0.48073	0.39651	0.53402	0.60386	1	0.70775
	0.0611	0.0495	0.0004	<.0001	<.0001	0.0004	<.0001	<.0001		<.0001
ConfAVERAGE	0.60276	0.66906	0.61763	0.61082	0.71636	0.7205	0.71785	0.72449	0.70775	1
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	

Legend

ConfComplaint	I am confident in taking a patient's chief complaint/medical history.
ConfCommunicating	I am confident in verbally communicating with patients.
ConfComplaintSpanish	I am confident in verbally communicating with patients in Spanish.
ConfWorkInterpreter	I am confident in my ability to work well with an interpreter.
ConfPhysEngaging	I am confident in physically engaging with patients.
ConfAsking	I am confident with asking sensitive or probing questions of patients.
ConfExplainingConditions	I am confident in explaining medical conditions to patients.
ConfExplainManagement	I am confident in explaining medical management to patients.
AdeqTrainedTreatHispanics	I feel adequately trained to manage the needs of Hispanic/Latino patients.
ConfAVERAGE	Average confidence levels

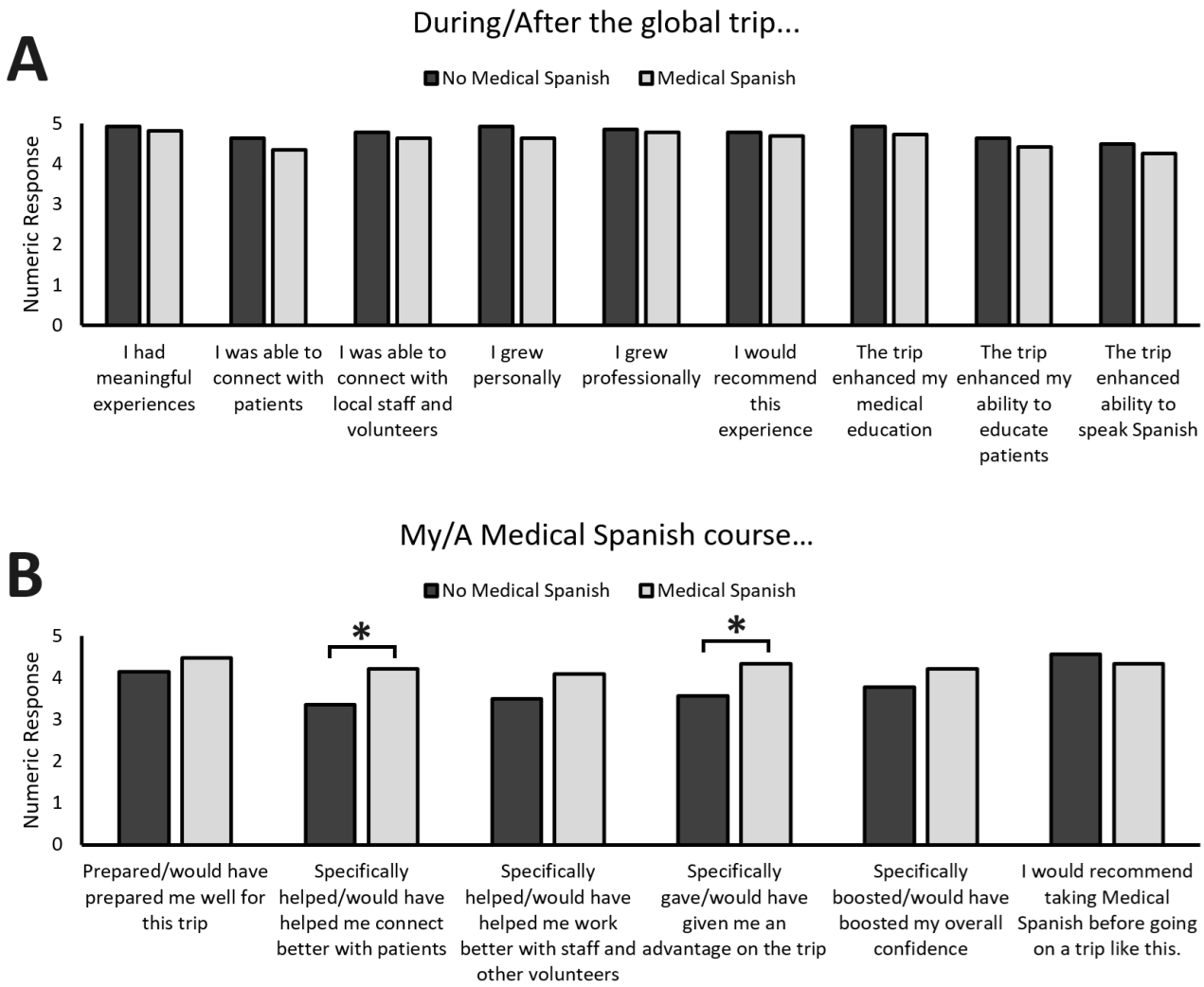

Figure 2. Feelings/beliefs of Medical Spanish importance for a global trip, A) During and After the global trip. B) Post-Trip participant experiences and perceived benefits, based on Medical Spanish experience. Mean self-related scores rated from 1-5 (1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree). Asterisk Indicates a significant association, $p < 0.05$.