On Top of the World: Reaching Underserved Domestic and International Populations through PM&R Residency Training

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Introduction

- Increased **globalization** has forced healthcare to be prepared to treat patients with conditions from all around the world
- **Domestic underserved populations require nearly 100,000 physicians** to have the same medical services as the rest of the United States population[1]
- In **2015**, the World Health Organization (WHO) reported that over **400 million individuals** across the world **lack access to medical care**[2]
- It has been shown that clinicians are more likely to treat underserved patients during their careers if they have exposure to these populations during their training[3]
- A systematic literature review paper in 2016 showed that there were global health medical education studies published in 12 specialties; Physical Medicine & Rehabilitation (PM&R) was **NOT** one of the 12[4]

Objectives

Specific Aim #1

- To describe the access to didactics and resources related to domestic and international underserved populations that are available at PM&R residencies across the United States

Specific Aim #2

- To evaluate the PM&R interest and perceived importance of having global health and domestic underserved population training and experiences in residency and what are the current barriers to developing this curriculum

Specific Aim #3

- To compare the survey responses between PM&R residents and PM&R Program Directors for global health curriculum

Hypothesis

1. PM&R residency program access to didactics involving domestic and international populations would be near 50-70%
2. Residents would view global health/domestic underserved training experiences more favorably then program directors and that they will recognize multiple barriers that limit their pursuit of such training opportunities.

Design/ Methods

- **Cross Sectional Survey Study**
- **Setting**: PM&R residency programs in the USA
- **Participants**: Residents and Program Directors from ACGME-accredited PM&R Programs
- **Outcome Measures via REDCap**: demographic data, residency training experiences involving domestic and international underserved populations (Likert scale); barriers that may impede these educational experiences and if they affected overall resident recruitment
- **Distribution:** Email listserv for residency Program Directors (who forwarded to residents) with individual program follow-up afterwards
- **Statistical testing**: Mann-Whitney U and Chi-Squared tests

Results

- Response rate:
- Residents: 113/~1273 (9%)
- Program Directors: 24/105 (23%)

- PM&R programs did not offer **global health lectures (61.3%), simulations (91.2%), journal clubs (81%), educational tracks (75.2%), established international electives (71.5%), or rotations with domestic underserved populations (48.9%)**

- Participants from **ALL regions outside the Midwest** reported that access to these educational opportunities would affect residency recruitment **(56% vs 31%).**

Table 1: Demographic data for overall survey participants
Table 2: International and domestic underserved population training opportunities offered at PM&R residency programs
Table 3: Barriers to international and domestic underserved population training opportunities for PM&R trainees and whether availability of these experiences would effect how they evaluated residency programs when interviewing

Table 1: Demographics	Response	Overall	Resident	Attending	p Value
Gender (%)	Male	77 (57.0)	63 (56.8)	14 (58.3)	1.000
	Female	58 (43.0)	48 (43.2)	10 (41.7)	
Age (median [IQR])		31.00 [29.00, 35.00]	30.00 [29.00, 32.00]	40.50 [38.75, 55.00]	**<0.001**
Race (%)	Caucasian	79 (59.8)	61 (56.5)	18 (75.0)	0.370
	Black/African American	7 (5.3)	7 (6.5)	0 (0.0)	
	Asian	28 (21.2)	23 (21.3)	5 (20.8)	
	Hispanic/Latino	8 (6.1)	7 (6.5)	1 (4.2)	
	Other	10 (7.6)	10 (9.3)	0 (0.0)	
Home Region (%)	Northeast	34 (26.2)	27 (25.5)	7 (29.2)	0.295
	Southeast	20 (15.4)	18 (17.0)	2 (8.3)	
	Midwest	29 (22.3)	23 (21.7)	6 (25.0)	
	Southwest	18 (13.8)	12 (11.3)	6 (25.0)	
	West	29 (22.3)	26 (24.5)	3 (12.5)	
Residency Region (%)	Northeast	33 (24.1)	28 (24.8)	5 (20.8)	0.792
	Southeast	12 (8.8)	11 (9.7)	1 (4.2)	
	Midwest	58 (42.3)	48 (42.5)	10 (41.7)	
	Southwest	16 (11.7)	12 (10.6)	4 (16.7)	
	West	18 (13.1)	14 (12.4)	4 (16.7)	
Academia (%)	Yes	81 (59.1)	57 (50.4)	24 (100.0)	**<0.001**
	No	16 (11.7)	16 (14.2)	0 (0.0)	
	Unsure	40 (29.2)	40 (35.4)	0 (0.0)	
Subspecialty (%)	TBI	15 (10.9)	10 (8.8)	5 (20.8)	NA
	SCI	5 (3.6)	3 (2.7)	2 (8.3)	
	Pain	31 (22.6)	29 (25.7)	2 (8.3)	
	Sports Medicine	29 (21.2)	28 (24.8)	1 (4.2)	
	Amputee	5 (3.6)	3 (2.7)	2 (8.3)	
	General	21 (15.3)	14 (12.4)	7 (29.2)	
	Other	19 (13.9)	14 (12.4)	5 (20.8)	

Table 2: Programs Offered	Response	Overall	Resident	Attending	p Value
Lectures (%)	No	84 (61.3)	70 (61.9)	14 (58.3)	0.921
	Yes	53 (38.7)	43 (38.1)	10 (41.7)	
Simulations (%)	No	125 (91.2)	102 (90.3)	23 (95.8)	0.692
	Yes	12 (8.8)	11 (9.7)	1 (4.2)	
Journal Club (%)	No	111 (81.0)	94 (83.2)	17 (70.8)	0.265
	Yes	26 (19.0)	19 (16.8)	7 (29.2)	
Educational Tracks (%)	No	103 (75.2)	80 (70.8)	23 (95.8)	**0.008**
	Yes	34 (24.8)	33 (29.2)	1 (4.2)	
Established Elective (%)	No	98 (71.5)	86 (76.1)	12 (50.0)	**0.020**
	Yes	39 (28.5)	27 (23.9)	12 (50.0)	
Independent Opportunities (%)	No	52 (38.0)	43 (38.1)	9 (37.5)	1.000
	Yes	85 (62.0)	70 (61.9)	15 (62.5)	
Domestic Underserved Rotations (%)	No	67 (48.9)	58 (51.3)	9 (37.5)	0.314
	Yes	70 (51.1)	55 (48.7)	15 (62.5)	
Projects (%)	No	75 (54.7)	63 (55.8)	12 (50.0)	0.773
	Yes	62 (45.3)	50 (44.2)	12 (50.0)	

Table 3: Barriers	Response	Overall	Resident	Attending	p Value
Recruitment Choice (%)	No	75 (54.7)	71 (62.8)	4 (16.7)	**<0.001**
	Yes	62 (45.3)	42 (37.2)	20 (83.3)	
Financial (%)	No	34 (24.8)	31 (27.4)	3 (12.5)	0.192
	Yes	103 (75.2)	82 (72.6)	21 (87.5)	
Mentorship (%)	No	40 (29.2)	34 (30.1)	6 (25.0)	0.802
	Yes	97 (70.8)	79 (69.9)	18 (75.0)	
Institutional Support (%)	No	28 (20.4)	24 (21.2)	4 (16.7)	0.783
	Yes	109 (79.6)	89 (78.8)	20 (83.3)	
Residency Schedule (%)	No	63 (46.0)	49 (43.4)	14 (58.3)	0.267
	Yes	74 (54.0)	64 (56.6)	10 (41.7)	
Health Concerns (%)	No	82 (59.9)	66 (58.4)	16 (66.7)	0.603
	Yes	55 (40.1)	47 (41.6)	8 (33.3)	
Other (%)	No	120 (88.2)	101 (90.2)	19 (79.2)	0.160
	Yes	16 (11.8)	11 (9.8)	5 (20.8)	

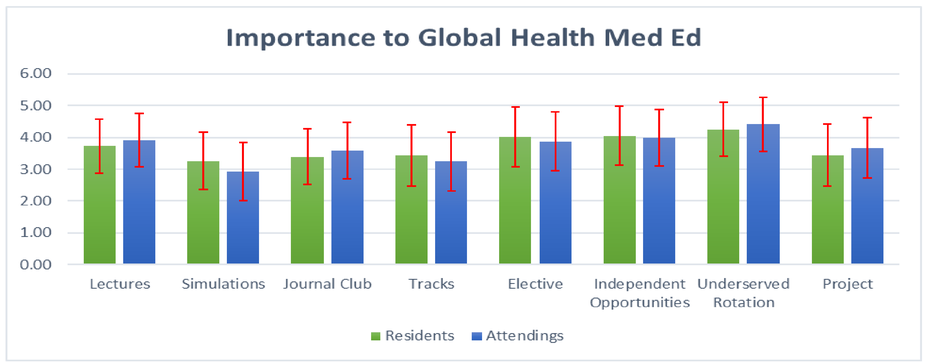

Figure 1: Importance of lectures, simulations, journal clubs, educational tracks, developed international elective time, independent elective opportunities, rotations with domestic underserved populations, scholarly projects pertaining to domestic and international underserved populations with respect to global health medical education. Error bars (red).

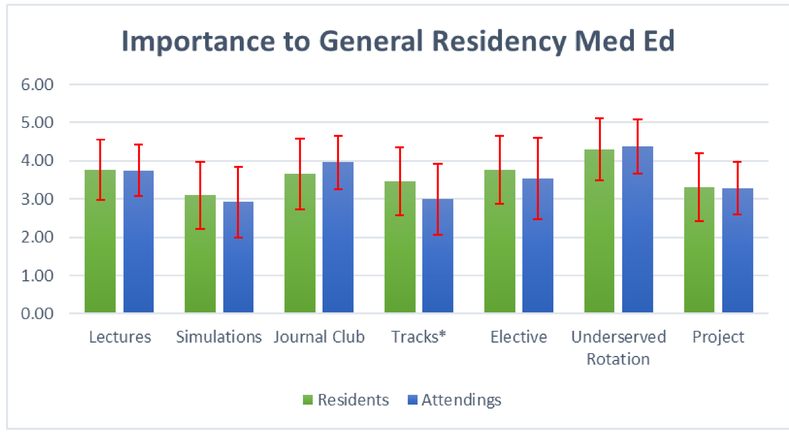

Figure 2: Importance of lectures, simulations, journal clubs, educational tracks, developed elective time, rotations with domestic underserved populations, scholarly projects pertaining to domestic and international underserved populations with respect to general residency medical education. Error bars (red); Statistically significant (*).

Discussion

- **Residents endorsed hands-on experiences** such as international/domestic underserved rotations, educational tracks, and simulation labs
- **Attendings** endorsed **traditional didactics** such as lectures, journal clubs, and projects
- Agreement with **pediatric GH studies** that for a successful longitudinal global health curriculum: a **GH rotation with international or domestic underserved experiences, preceptorship during GH electives; less emphasis on scholarly output and lectures**[5]
- Barriers endorsed were similar in studies across multiple specialties focusing mostly on **financial support, supervision, established international partnerships, and scheduling/coverage**[6,7]

Conclusion

- This is the **first study** assessing the **global health needs for PM&R residents**
- We are very fortunate to have the **McGaw Global Health Clinical Scholars Track**, but a substantial number of PM&R residents do **NOT** have the same **training opportunities** and are limited by **multiple barriers**
- More programs must be developed so that future trainees can have **more exposure to international and domestic underserved populations** and **incorporate these populations into their future practices.**

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