

# PERSISTENT POST-CONCUSSION SYNDROME IN ENTRY-LEVEL OCCUPATIONAL THERAPY CURRICULUM: A SURVEY

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## BACKGROUND

### mTBI & PPCS

- In one year 2.2 million people are admitted to emergency departments in the United States for a traumatic brain injury, with 75 percent being mild traumatic brain injuries (mTBI) <sup>7,20</sup>
- mTBI may lead to emotional, physical, behavioral, or cognitive symptoms. Some individuals will experience persistent symptoms decreasing quality of life and affect occupational functioning <sup>7, 18</sup>
- Ongoing symptoms affect 30 percent of individuals following a mTBI and lead to the secondary diagnosis of persistent post-concussion syndrome (PPCS) <sup>18</sup>
- Although PPCS lacks an accepted and clear definition, according to Mayo Foundation for Medical Education and Research (2020), PPCS occurs when concussion symptoms last longer than the expected recovery time from injury. PPCS symptoms are parallel to those experienced during a mTBI <sup>11</sup>
- PPCS symptoms have the potential to interfere with everyday functioning and may create barriers when engaging in everyday activities that are within the scope of occupational therapy (OT) practice.

### OCCUPATIONAL THERAPY'S ROLE

- OT facilitates engagement in occupations to achieve health, well-being, and participation in life <sup>3</sup>.
- OT evaluation includes a performance analysis to determine their client's ability and tolerance of engagement in an activity and then work with the client to reduce barriers from dysfunction when performing a task <sup>26</sup>.
- OT's may teach individuals with PPCS compensation and symptom management techniques, focusing on restoring function during the transition back to everyday activities

## METHOD

### INSTRUMENTS

- Self developed survey sent to entry level OT programs in the US
  - 18 questions
  - Categorical
  - Open-ended
- Uploaded to a university-based Qualtrics program (2022), which is a reliable tool used globally that protects data <sup>22</sup>.
- The survey questions include:
  - Demographic information
  - If PPCS is taught in their OT program
  - How the topic is delivered
  - Which courses the topic is presented
  - Assessments and tools taught with the topic of PPCS

### PARTICIPANTS

- Purposive sampling and snowball sampling
- Faculty contact information from the Accreditation Council for Occupational Therapy Education (ACOTE) website
- Respond anonymously
- Exclusion criteria:**
  - Teaching at a Certified Occupational Therapy Assistant program or post-professional doctorate program
  - Not an OT educator
  - Not in a program accredited by ACOTE
  - Not in a US based OT program
- Inclusion criteria:**
  - Being an educator in a US-based, accredited by ACOTE, entry-level OT program

### DATA COLLECTION

- 148 faculty members contacted from different ACOTE accredited programs in the US
- Survey opened: May 13, 2022
- Survey closed: June 24, 2022
- Reminder email send June 10, 2022

## RESULTS

### QUANTITATIVE

- 25/148 responses
- Data showed a majority of the participants taught in a Masters entry-level program.
- 36% (n=9) indicated that PPCS is being taught in their program while 52% (n=13) said it was not being taught and 12% (n=3) answered unknown.
- Of the nine respondents that indicated that PPCS is being taught in their program, five indicated that they were the professor who teaches the PPCS content while four respondents are not.

The participants who reported that they are the professor who teaches PPCS in their respective program were first asked to estimate the amount of hours their students spend on the topic of PPCS. The participants were next asked how information about PPCS is being delivered in the course(s) they teach. The participants were then asked which course(s) PPCS content is taught in. Finally, when participants were asked about which standardized assessments relevant to PPCS were presented. For the questions regarding content, courses, and standardized assessments, multiple answers were able to be selected. Participants who reported that they were not the professor who teaches PPCS in their respective program were asked similar questions. Below are comparison graphs of the data between those who teach and those who do not teach PPCS in their perspective programs.

### QUALITATIVE

Results are from the question "Is this a topic you believe would be beneficial to teach in your program?" Individuals who responded "Yes" to PPCS being beneficial to be taught in entry-level programs included the free responses below.

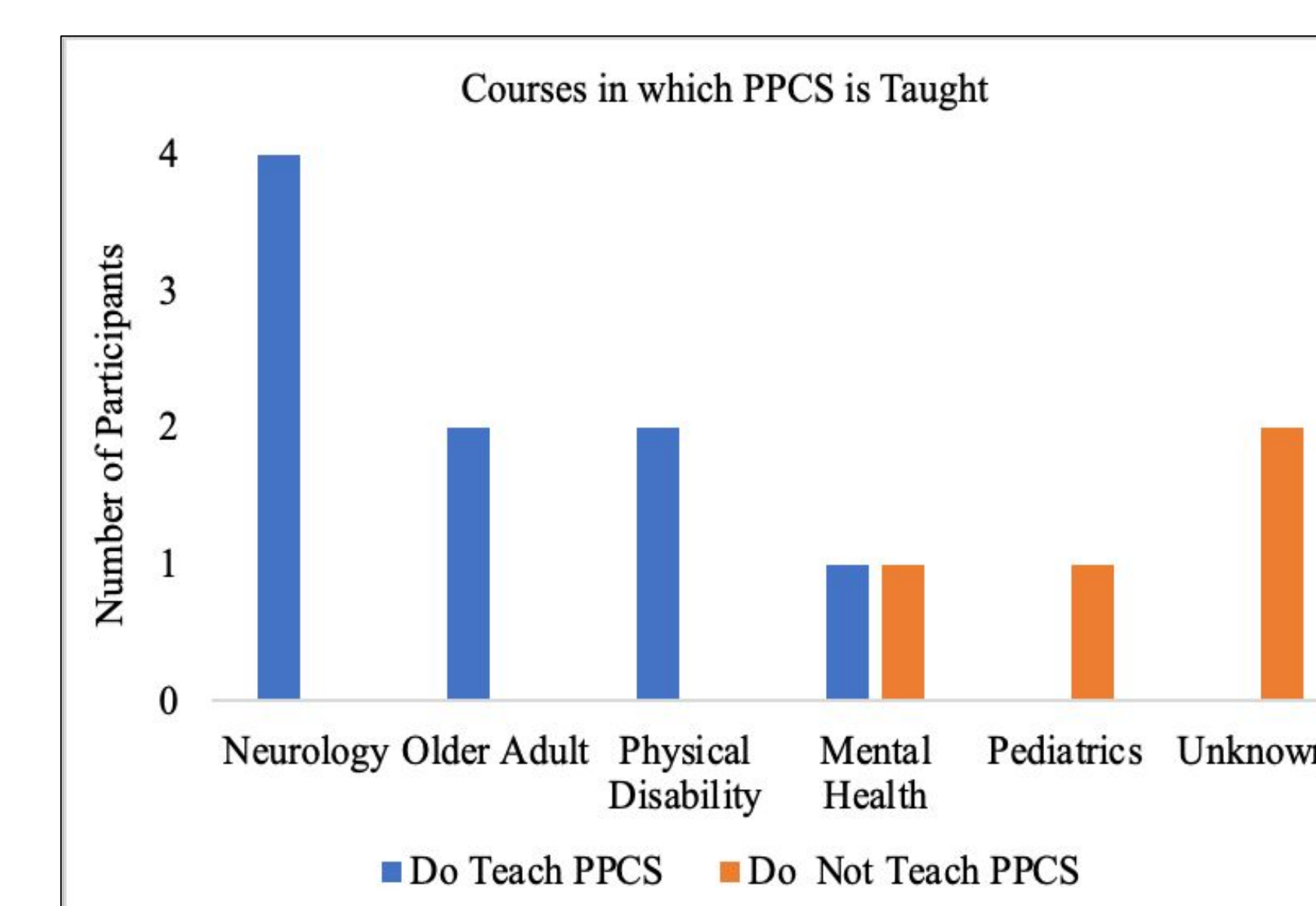
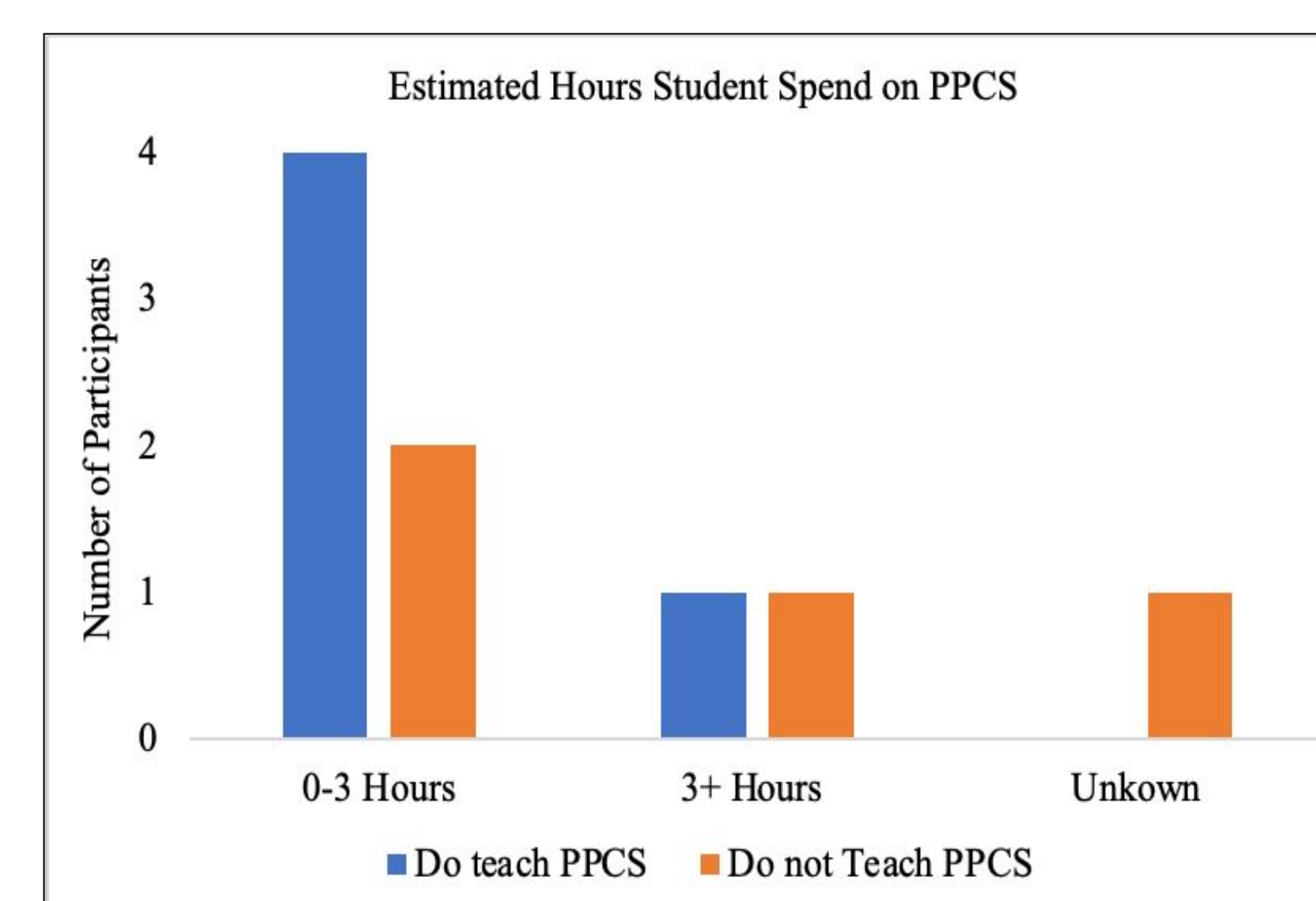
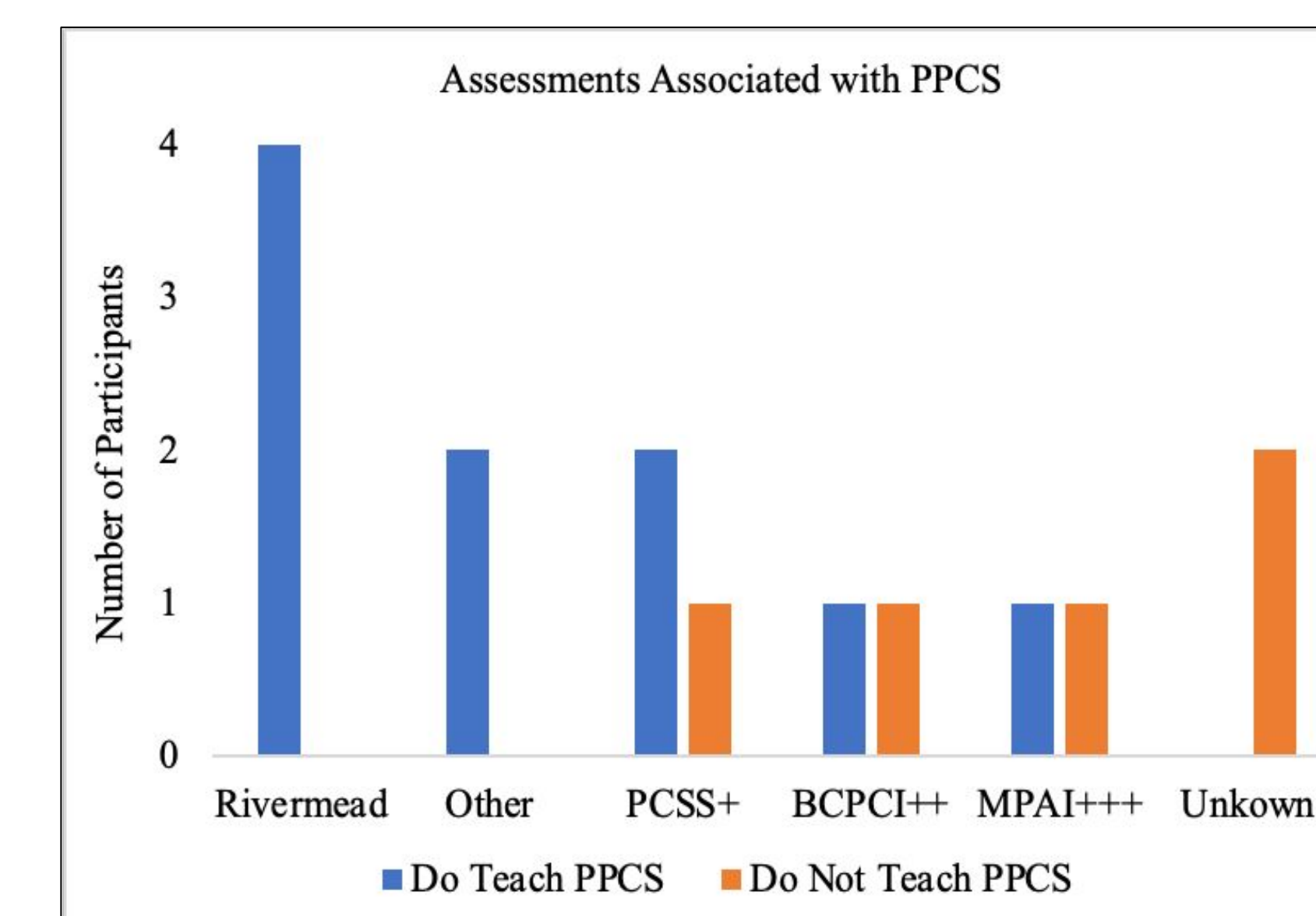
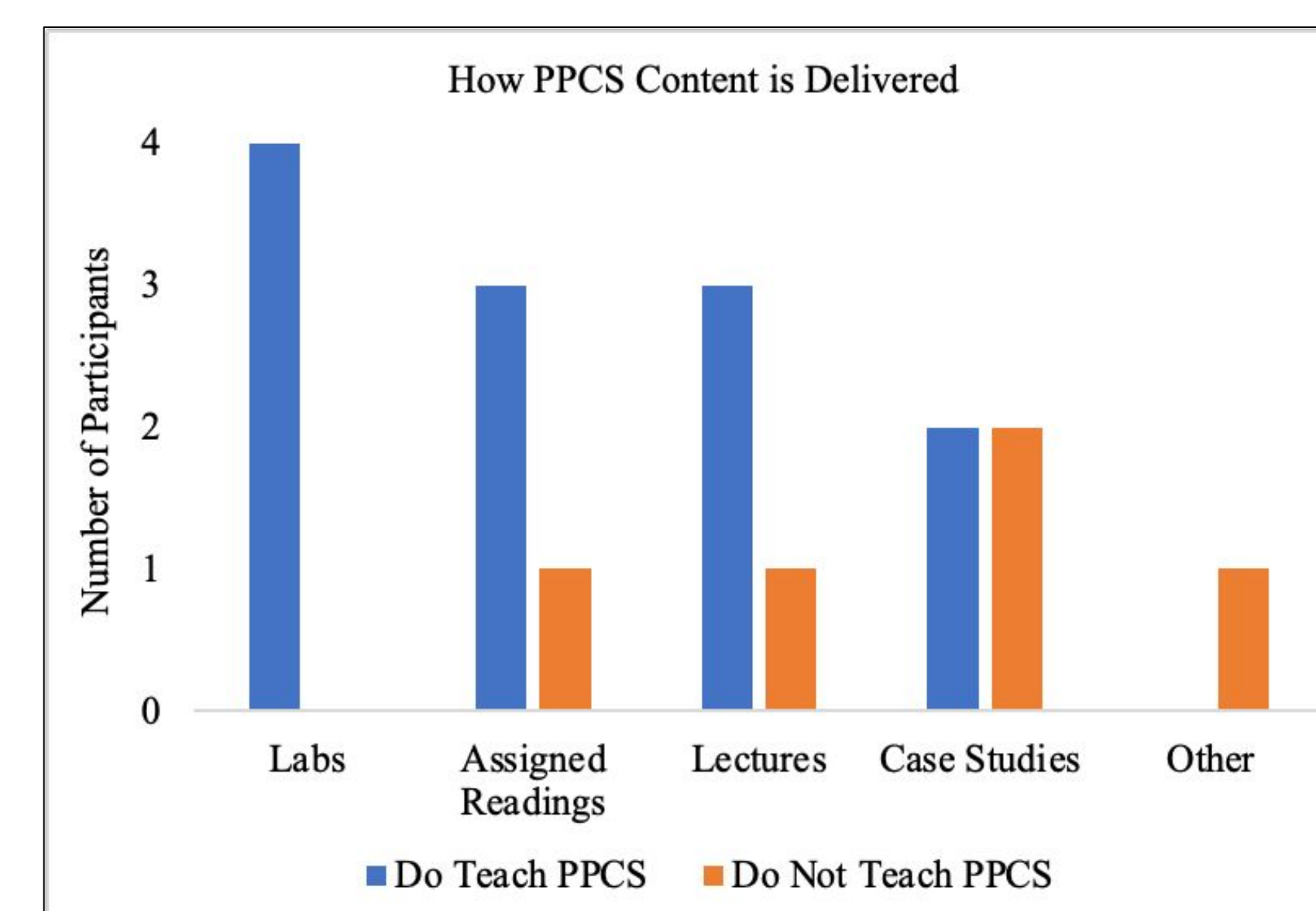
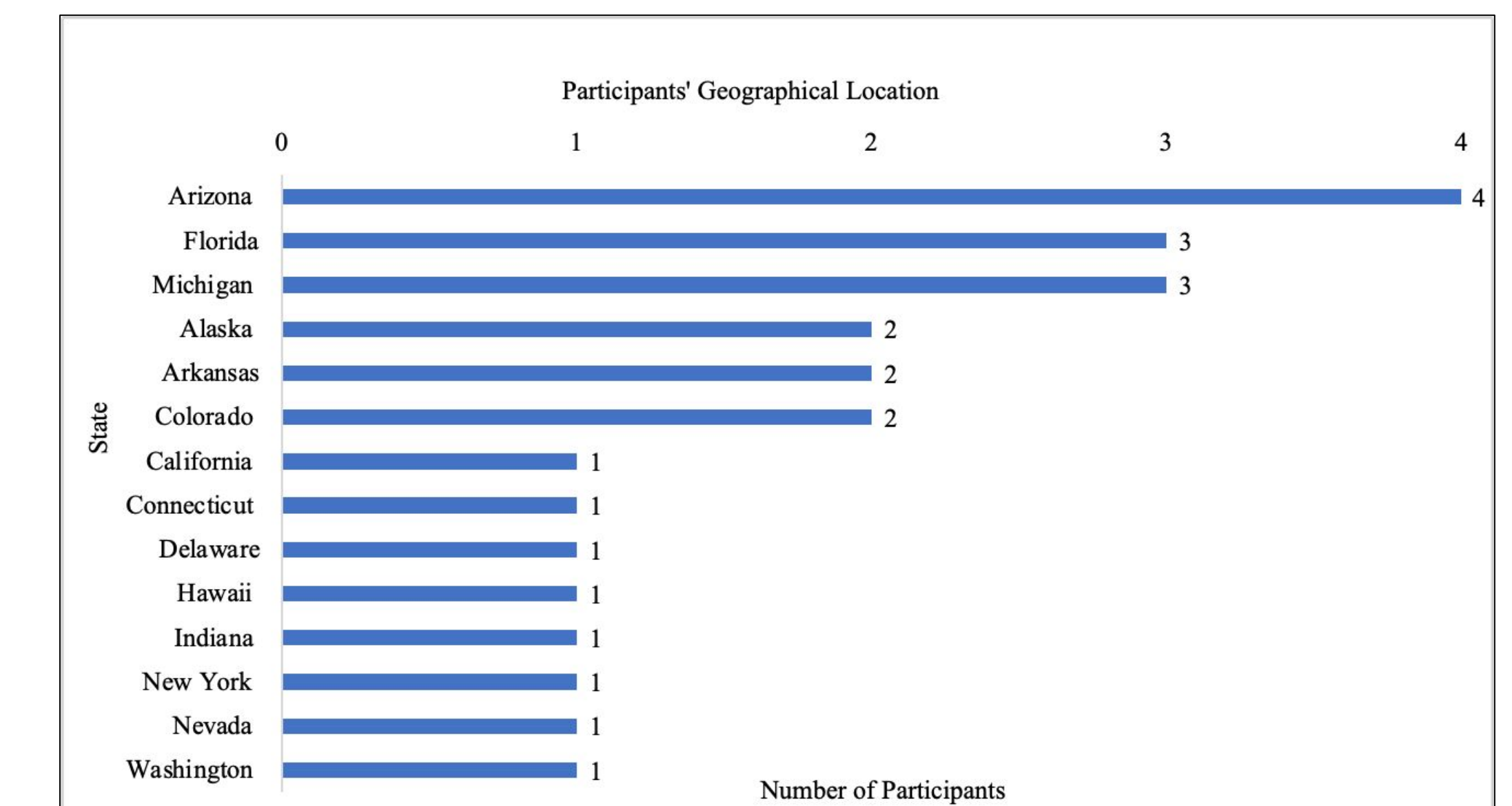
- "Important to understand such a chronic potentially debilitating condition"
- "As we learn more about this disorder it is becoming more common in rehab. We teach about post-concussion, but not PPCS"  
One individual who provided qualitative data when responding "No" to PPCS being beneficial to be taught in entry-level programs stated, "To give it a mention yes, but for detailed information for entry-level practice no."

### Professional Background and Practice Characteristics of the Respondents

Characteristic	%	n=
<b>Program Type:</b>		
Masters	56	14
Doctorate	32	8
Both	12	3
<b>Years of Teaching:</b>		
0-5 years	24	6
5-10 years	32	8
10-20 years	32	8
20+ years	12	3
<b>Content Area(s) Taught+:</b>		
Neurology	64	16
Mental Health	36	9
Physical Disabilities	36	9
Pediatrics	32	8
Older Adult	28	7
<b>Additional Certifications:</b>		
No	68	17
Yes	32	8
Concussion Certification	100	8
Certified Brain Injury Specialist (CBIS)	12.5	1
Specialty Certification in Low Vision (SCLV)	12.5	1
ImPACT	12.5	1
<b>Teach in a Program That PPCS is Taught:</b>		
Yes	36	9
No	52	13
Unknown	12	3

Note: n=25

+Participants were able to choose more than one content area that they may teach



## DISCUSSION

It is concluded that the topic of PPCS is not taught in the majority of entry-level occupational therapy programs. This is supported by the evidence of 52% of participants indicating that PPCS is not taught in their program, while only 36% indicated that it is currently being taught in their program. It is possible this is due to the fact that there is no ACOTE standard for this topic to be taught in the entry-level occupational therapy curriculum. This information may help explain the lack of carry over into the field that is evident by limited research on the topic of PPCS.

Of the respondents whose programs do not teach PPCS, 50% of respondents believe that it would be beneficial to teach about PPCS in their program, with only 25% indicating they do not believe it should be taught, and 25% declining to answer. This indicates a need for further research with opportunities for researchers to determine what mode of content delivery and amount of content hours students spend on the topic of PPCS is most beneficial in allowing the students to be competent entry-level practitioners and if entry-level programs that have focused on neurology are more inclined to teach PPCS within their program.

## CONCLUSION

The expansion of research on PPCS is necessary to work with clients and provide them with the best evidence-based practice to relieve their PPCS symptoms. This research sought out to determine the prevalence of PPCS being taught in entry-level programs, and further evidence is warranted from a larger sample size to determine if PPCS being taught in entry-level programs is more prevalent than what our research suggests. Further research is needed on PPCS, occupational therapy's role in PPCS, and evidence-based research to determine what is the best practice for those practitioners treating clients with PPCS. Further research should also be conducted to determine what is considered best practice for entry-level programs in order to produce entry-level practitioners who are competent.

## References

- <sup>1</sup>Accreditation Council for Occupational Therapy Education [ACOTE]. (2022). *School directory*. ACOTE. Retrieved from <https://acoteonline.org/schools/>
- <sup>3</sup>American Occupational Therapy Association [AOTA]. (2020). Occupational therapy practice framework: Domain and process (4th ed.). *American Journal of Occupational Therapy*, 74(Suppl. 2), 7412410010. <https://doi.org/10.5014/ajot.2020.74S2001>
- <sup>7</sup>Centers for Disease Control and Prevention [CDC]. (2015). *Report to Congress on Traumatic Brain Injury in the United States: Epidemiology and Rehabilitation*. National Center for Injury Prevention and Control; Division of Unintentional Injury Prevention. Atlanta, GA.
- <sup>11</sup>Finn, C. (2019). An occupation-based approach to management of concussion: Guidelines for practice. *Open Journal of Occupational Therapy*, 7(2), 1–15. <https://doi.org/10.15453/2168-6408.1550>
- <sup>18</sup>Mercier, L. J., Fung, T. S., Harris, A. D., Dukelow, S. P., & Debert, C. T. (2020). Improving symptom burden in adults with persistent post-concussive symptoms: A randomized aerobic exercise trial protocol. *BMC Neurology*, 20(1), 1–9. <https://doi.org/10.1186/s12883-020-1622-x>
- <sup>20</sup>National Center for Injury Prevention and Control. (2003). Report to congress on mild traumatic brain injury in the United States: Steps to prevent a serious public health problem. <https://www.cdc.gov/traumaticbraininjury/pdf/mtbireport-a.pdf>
- <sup>22</sup>Qualtrics. (2022). Survey Software. <https://www.qualtrics.com/core-xm/survey-software/>
- <sup>26</sup>Wheeler, S. & Yamkovenko, S. (2016). *Recovery and participation post concussion- AOTA everyday evidence* (Audio Podcast). AOTA. <https://www.aota.org/Practice/Researchers/Evidence-Podcast/post-concussion-recovery-participation-TBI-brain-injury.aspx>