

## Introduction

The Evidence-Based Review of moderate to severe Acquired Brain Injury (ERABI)<sup>1</sup> is a synthesized review of the current literature on acquired brain injury (ABI) rehabilitation and acute care interventions. ERABI is updated annually, and the 11<sup>th</sup> edition includes articles in English published up to August 2016. Randomized controlled trials (RCTs) represent a higher level of methodological design and with the current expansion of technology and information it is interesting to note if regions are prioritizing ABI research based on their individual ABI incidence rates. Over time, it is also assumed that the quality of RCTs should improve; however, it is not known whether this is the case. Other measures which can be considered indicators of methodological quality are sample size, as well as the Physiotherapy Evidence Database (PEDro)<sup>2</sup> tool which is used to determine the over all quality of RCTs.

## Objective

*To examine trends in ABI RCTs over time with respect to publication volume, methodological quality, and sample size, per economic region.*

## Methods

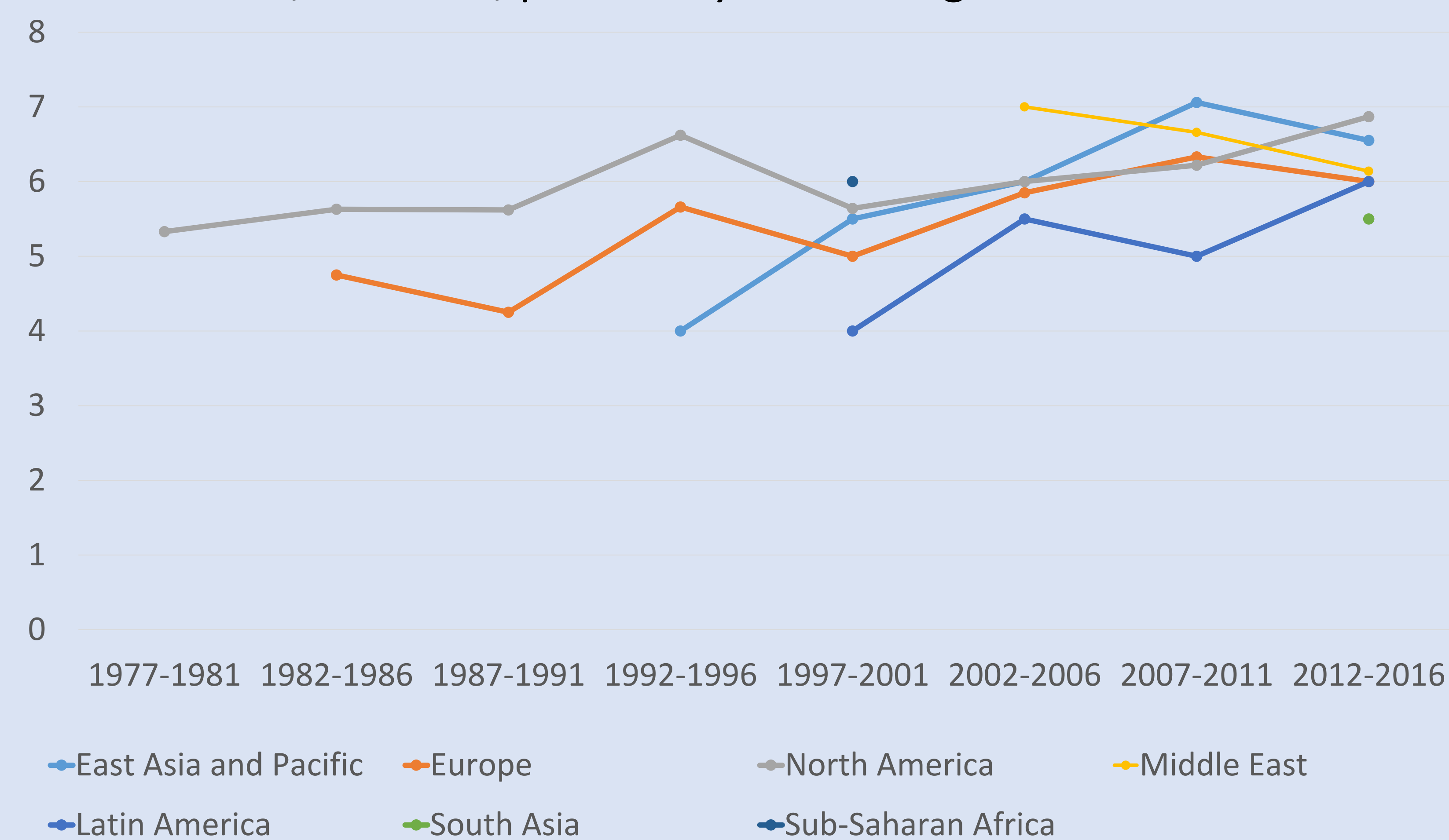
- Using the ERABI, all RCTs which met the following criteria up to 2016 were included:
  - the population sample was >50% moderate-severe ABI,
  - the sample was composed of ≥3 participants, and
  - all participants were adults (≥18 years).
- Author(s), year of publication, intervention, outcome, sample size, PEDro score, and country of origin were extracted from each RCT
- The Physiotherapy Evidence Database (PEDro)<sup>2</sup> tool was used to measure methodological quality
- Classification of countries into economic regions was based on the World Development Indicators Map (2017) by the World Bank<sup>3</sup>, and was designed using the World Bank Atlas method.



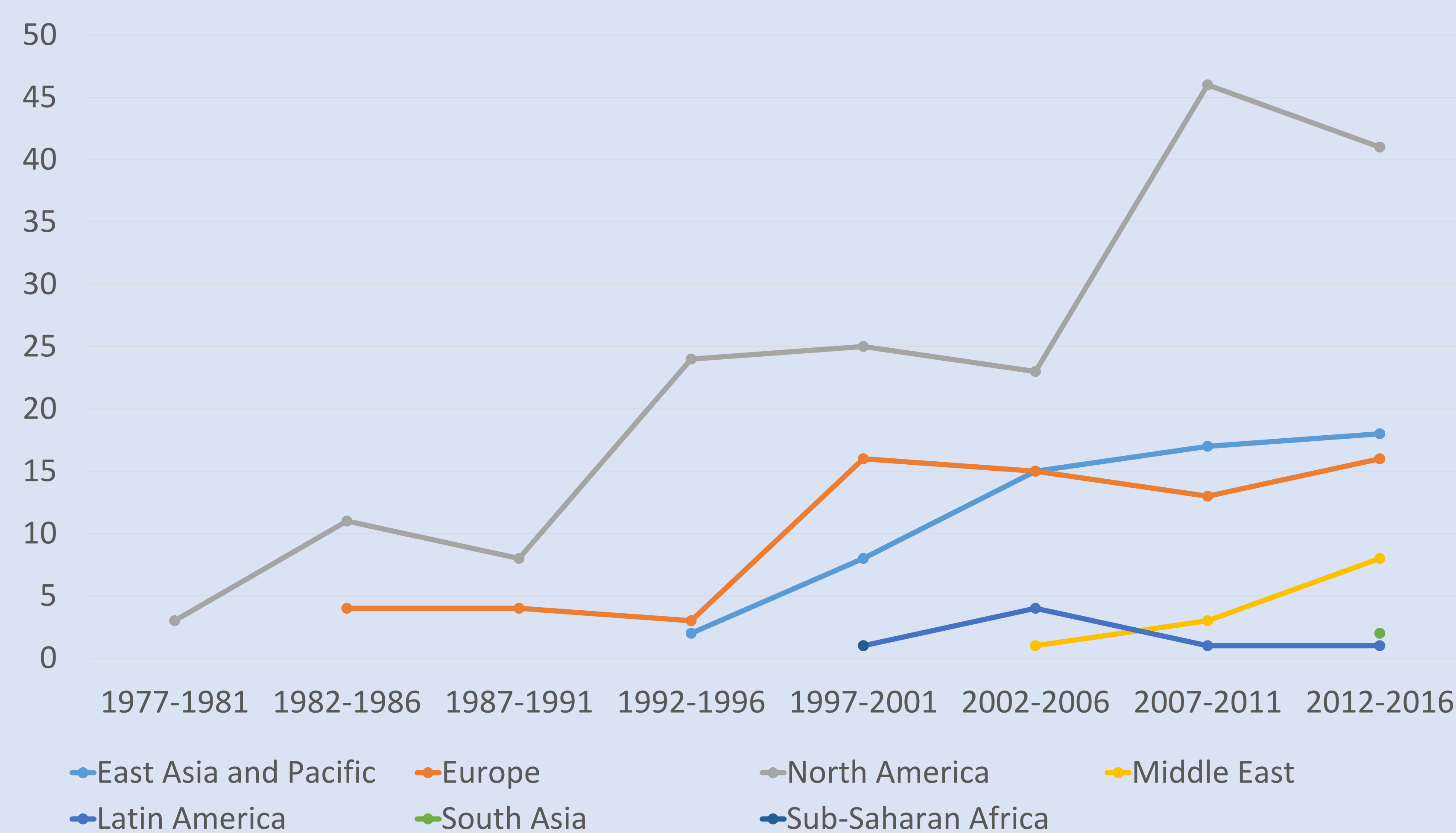
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www.abiebr.com

## Results

- A total of 334 RCTs were found, all of which were published between 1975 and 2016.
- North America has published the most RCTs over time, accounting for 54.19% of all RCTs published. East Asia and Pacific, and Europe have demonstrated the most growth over time; East Asia and Pacific has increased their RCT publication rate by 8 since 1992-1996, while Europe has increased their rate by 3 since 1982-1986.
- Although the number of RCTs published each half decade has been increasing, no corresponding rates of increasing PEDro scores or sample sizes were found.
- Between 2012 and 2016, all regions demonstrated a mean PEDro score within a 1.5 point range, indicating that all regions are publishing RCTs of similar quality.
- Mean PEDro scores did not improve over all, however, the East Asia and Pacific, and Europe have consistently increased PEDro scores over time compared to other regions.
- RCT publication rate has doubled in the last 20 years, with North America still publishing the most RCTs, however, previously absent regions are now contributing to RCT publication.

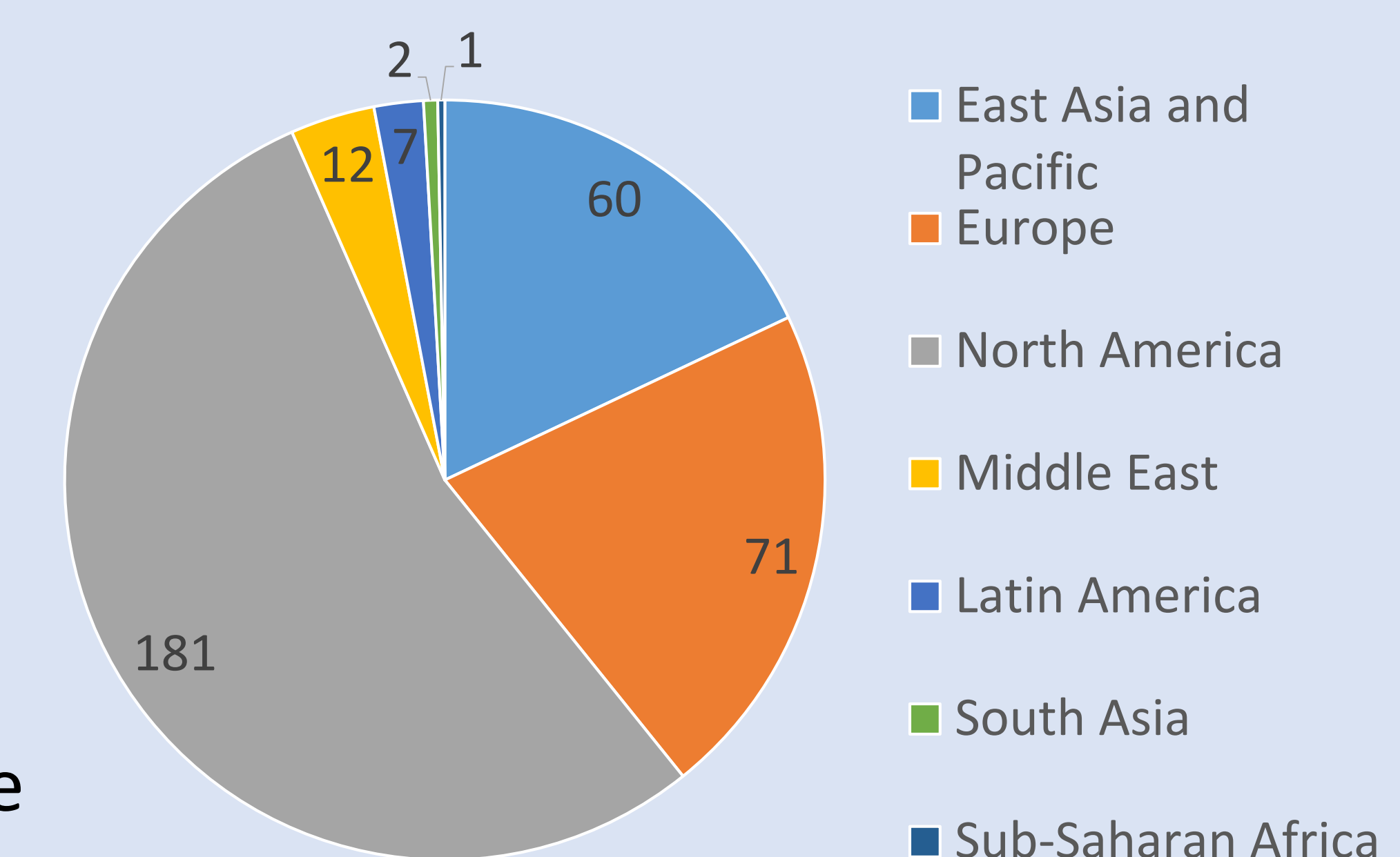


**Figure 1.** Mean PEDro score over time for each economic region.

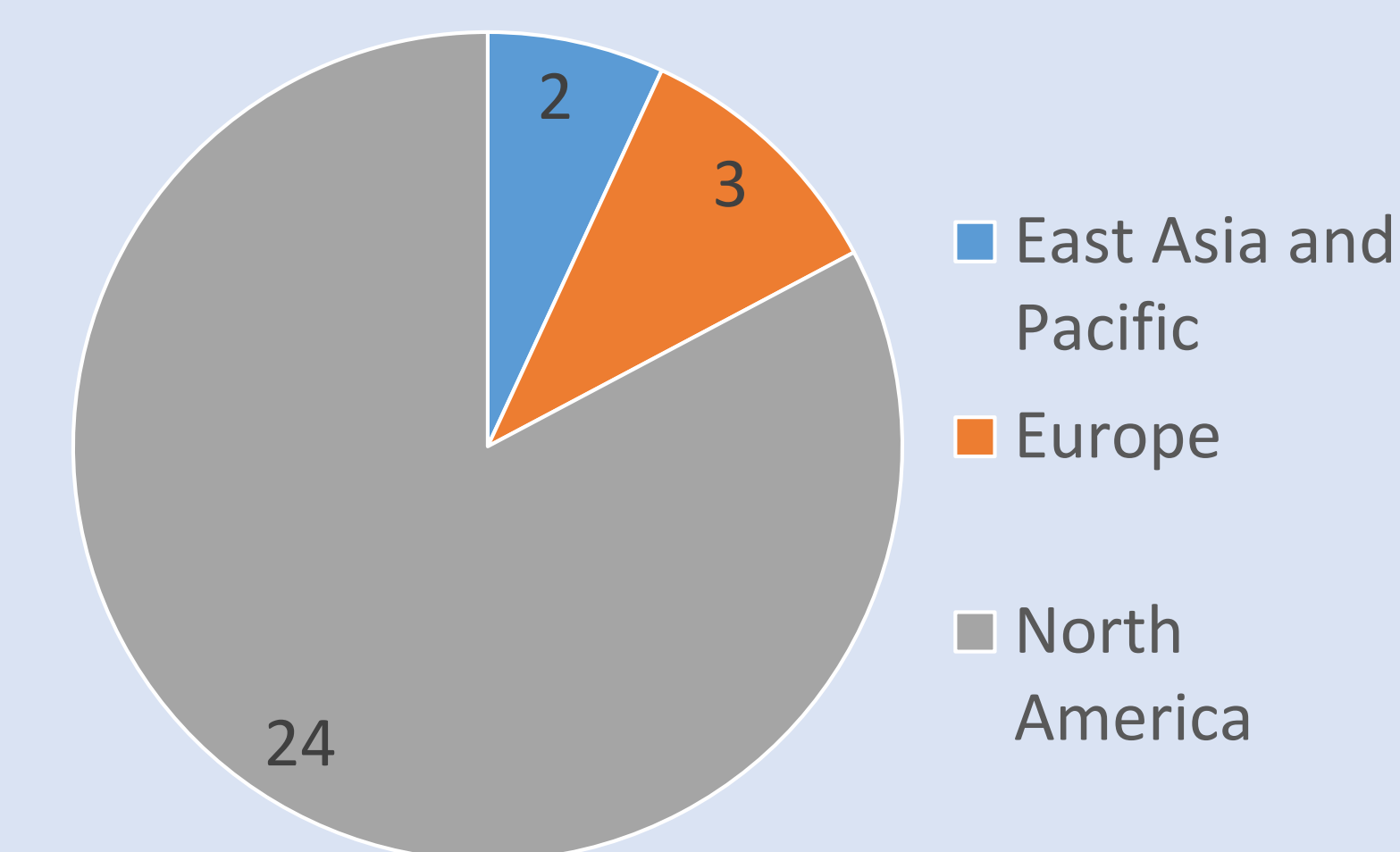


**Figure 2.** Mean number of RCTs published per half decade by economic region.

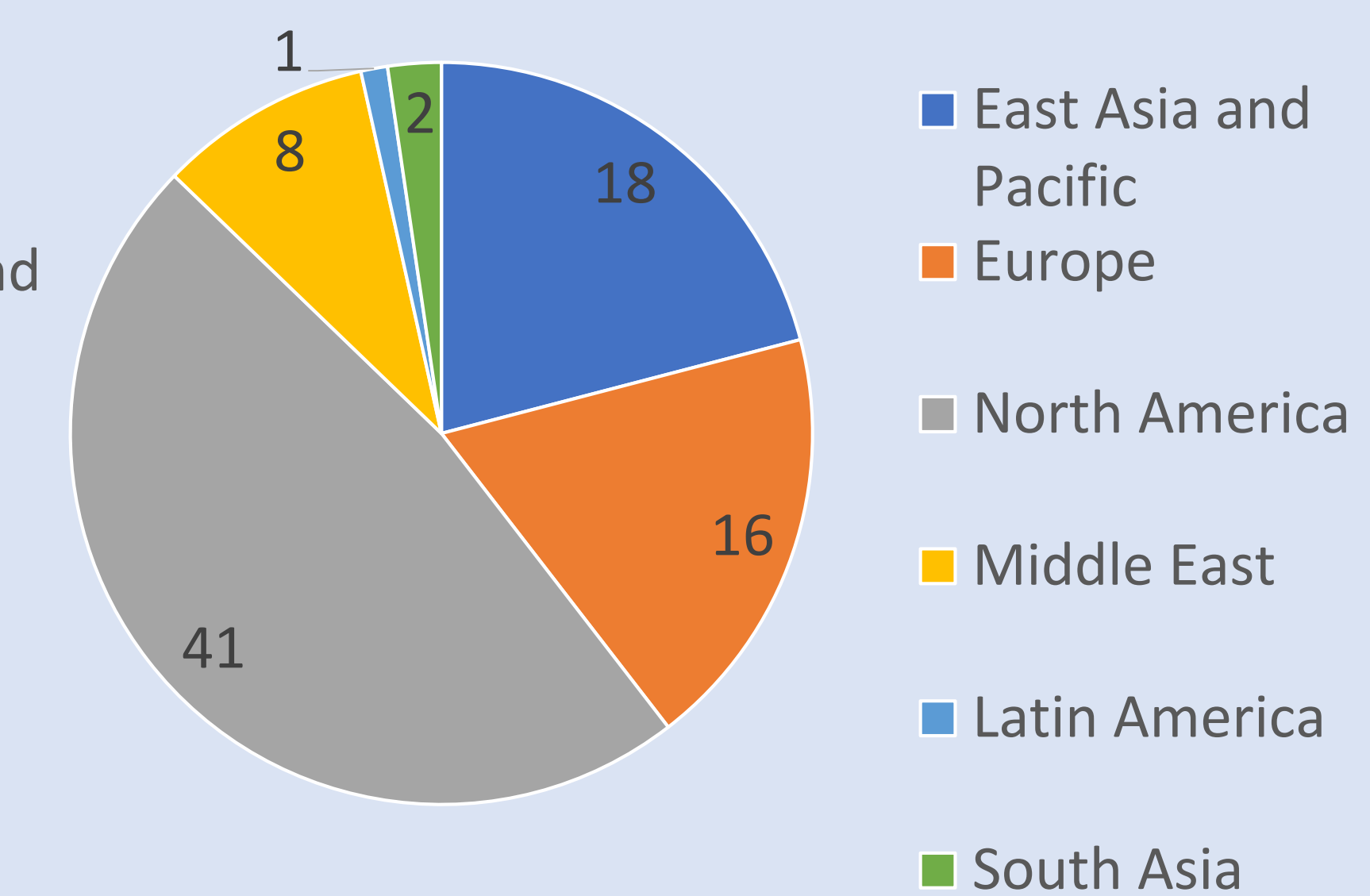
## Total RCTs



## 1992-1996 (n=29)



## 2012-2016 (n=86)



**Figure 3.** Number of RCTs published.

## Conclusions

Over all, the number of RCTs published has been steadily increasing each year over the last four decades. Contrary to what might be expected, overall mean PEDro scores do not seem to be increasing over time, despite specific regions seeing positive trends. The East Asia and Pacific region has seen the most dramatic increase in PEDro score, while North America is experiencing a much slower increase. There were also no recognizable trends in sample size, per region or over time. This information is valuable when examining how regions are directing healthcare resources, and evaluating how research overlaps with ABI incidence rates worldwide.

## References

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