A systematic review of the efficiency of recruitment to stroke rehabilitation randomised controlled trials

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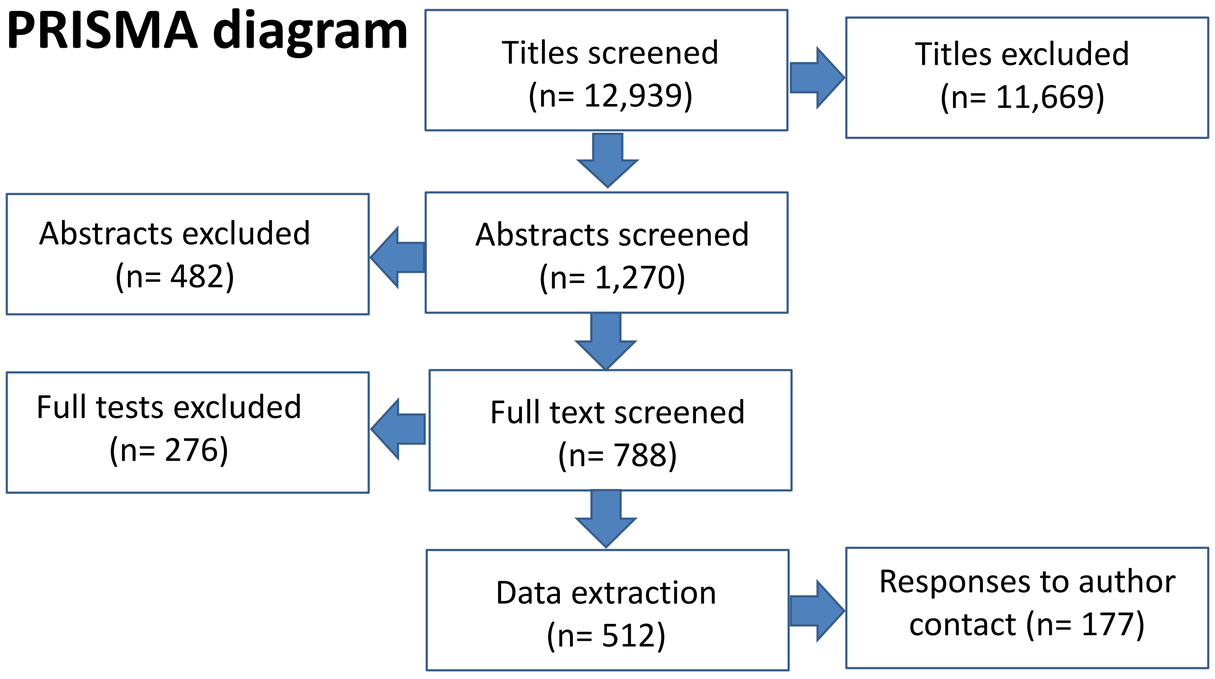
Background

More than 100,000 people have a stroke each year in the UK [1, 2]. Rehabilitation aims to enhance functional activities and participation in society and thus improve quality of life [3]. Successful recruitment to randomised controlled trials (RCTs) is essential for the effective evaluation of treatment effects and reduction of research waste. Currently it is estimated that fewer than half of RCTs meet their recruitment targets [4] and the recruitment of stroke survivors for acute trials can be particularly difficult [5]. Recruitment to stroke rehabilitation RCTs has not been explored.

PRISMA diagram



Methods

A systematic review of the recruitment efficiency of stroke rehabilitation RCTs published between 2005 -2015. Trials located within Cochrane stroke trials register. Two authors independently screening all RCTs and extracted data, any discrepancies were settled by a third author. Raw recruitment data was extracted to produced the recruitment efficiency outcomes used. A protocol for this project was published within the Prospero database: ID=CRD4201603307 http://www.crd.york.ac.uk/PROSPERO

Inclusion criteria:

- Stroke survivors only
- Non-pharmacological RCTs
- Rehabilitation interventions:
  - Administered by stroke rehabilitation team
  - Targeting stroke related impairment

Recruitment efficiency outcomes

Randomisation rate: $\frac{n\ Randomised}{n\ Screened}$

Recruitment rate: $\frac{\left(\frac{n\ Randomised}{Recruitment\ time\ (Months)}\right)}{n\ Sites}$

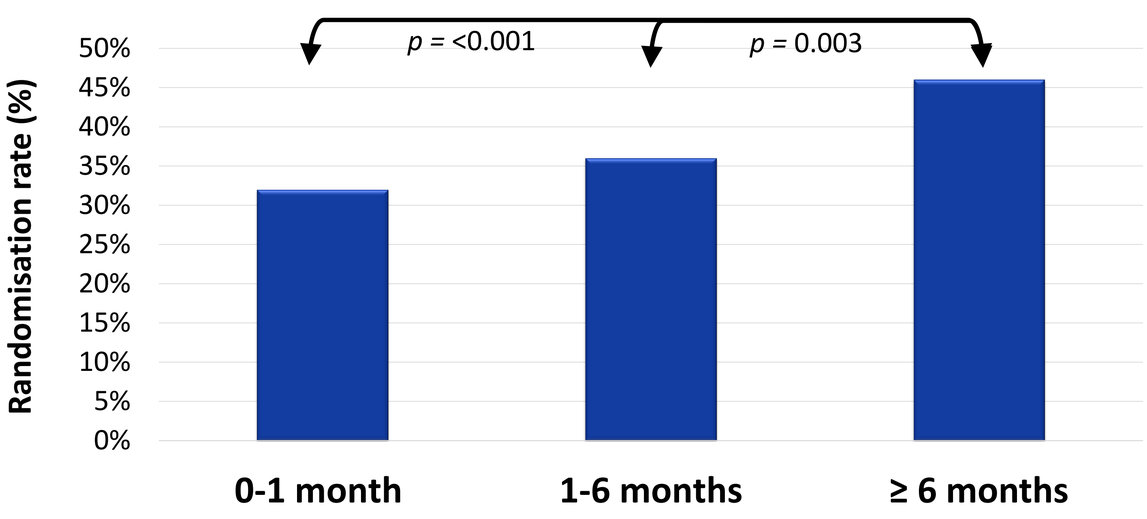
Dropout rate: $\frac{n\ Dropout}{n\ Randomised}$

Overall recruitment efficiency

	RCTs =512	Mean	SD	min-max
Randomisation rate *% randomised from those screened*	321	0.40 (40%)	.28	.02 - 1
Recruitment rate *Number randomised per site per month*	242	3.03	4.93	.08 - 40
Dropout rate *% of those randomised that dropped out*	414	0.09 (9%)	.11	.00 - .83

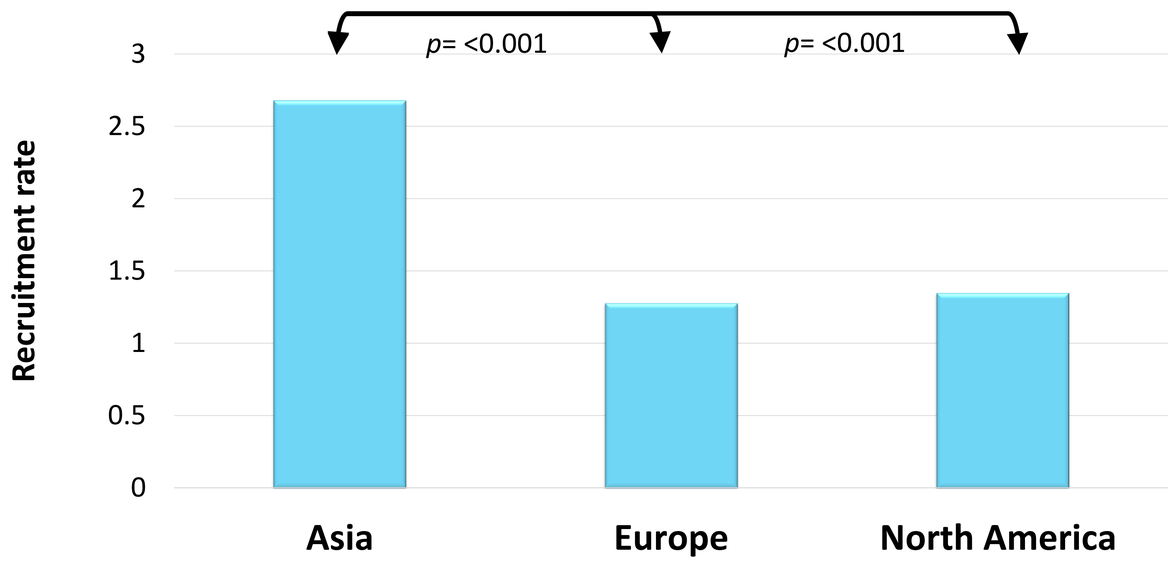
SD = standard deviation

Randomisation rate: stage of stroke rehabilitation



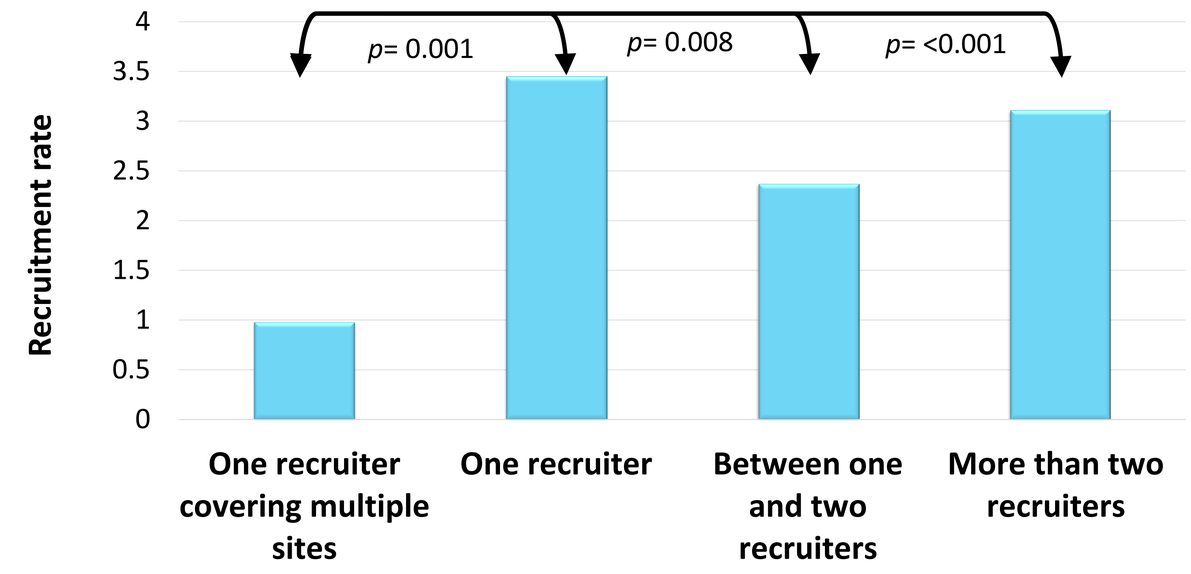
Randomisation rate significantly higher when recruiting chronic stroke survivors.

Recruitment rate: continent of recruitment



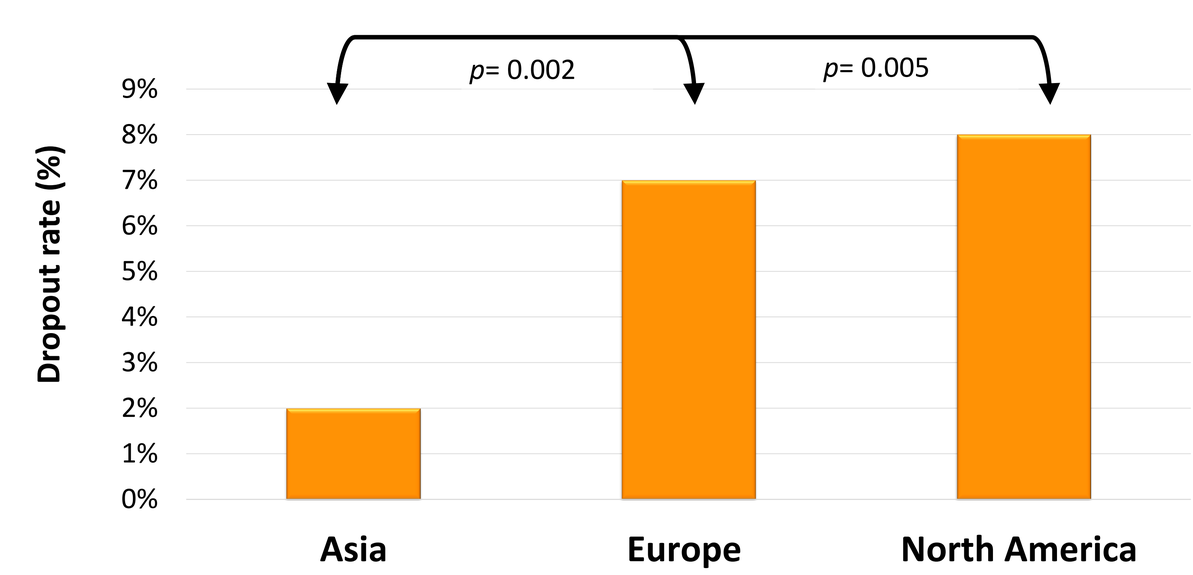
Recruitment rate significantly higher for trials conducted in Asia.

Recruitment rate: recruiters per site



Recruitment speed significantly slower for one recruiter covering multiple recruitment sites.

Dropout rate: continent of recruitment



Dropout rate significantly lower for trials conducted in Asian.

Conclusion

Stroke rehabilitation RCTs published between 2005 and 2015 experienced notable recruitment inefficiencies. Trials recruiting stroke survivors in the chronic stage of recovery experienced the most efficient recruitment. Having one recruiter covering multiple sites led to the least efficient recruitment. Trials conducted in Asian recruit more people per site per month and experience less dropout. Precise information from pre-existing trials could lead to more accurate recruitment estimations for future stroke rehabilitation RCTs.

References

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