

Perspectives and Use of Assistive Technology by Persons with MS: A Scoping Review

Alexandra Jackson, Rebekah Sandhu, & Marcia Finlayson

School of Rehabilitation Therapy, Faculty of Health Sciences, Queen's University, Kingston, Ontario, Canada



Background

- Persons with Multiple Sclerosis (PwMS) experience functional limitations, affecting daily activities^{1,2,3}
- Use of assistive technology (AT) provides PwMS assistance to engage in activities and delay nursing home entry^{4,5,6}
- AT matching is challenging (person, task, & environment)^{7,8,9}
- Synthesizing current knowledge about use & perspectives of AT by PwMS supports AT matching process

Research Question: *What is currently known about the perspectives and use of assistive technology by persons with MS?*

Methods

- Arskey & O'Malley (2005)¹⁰ approach was used
- Searches were conducted in Medline, CINAHL, PsychNet, & Engineering Village
- Used "assistive technology", "Multiple Sclerosis", terms capturing experience, attitudes, & feelings

Inclusion	Exclusion
<ul style="list-style-type: none"> • Study population is PwMS • Non-institutional settings • Reference to AT • Reference to feelings, perception, or experiences with AT 	<ul style="list-style-type: none"> • Children or youth with MS • Laboratory setting • Conference abstracts • Dissertation papers • Reviews

Table 1: Inclusion and exclusion criteria.

- Two reviewers conducted the screening, full-text review, & extraction in Covidence
- Third reviewer resolved any disagreements
- Extraction included citation, country, aim, design, methods, participant descriptors, type & purpose of AT, & quotes on experiences with the AT

Preliminary Findings

- Final extraction included 18 peer-reviewed journals & 11 consumer publications

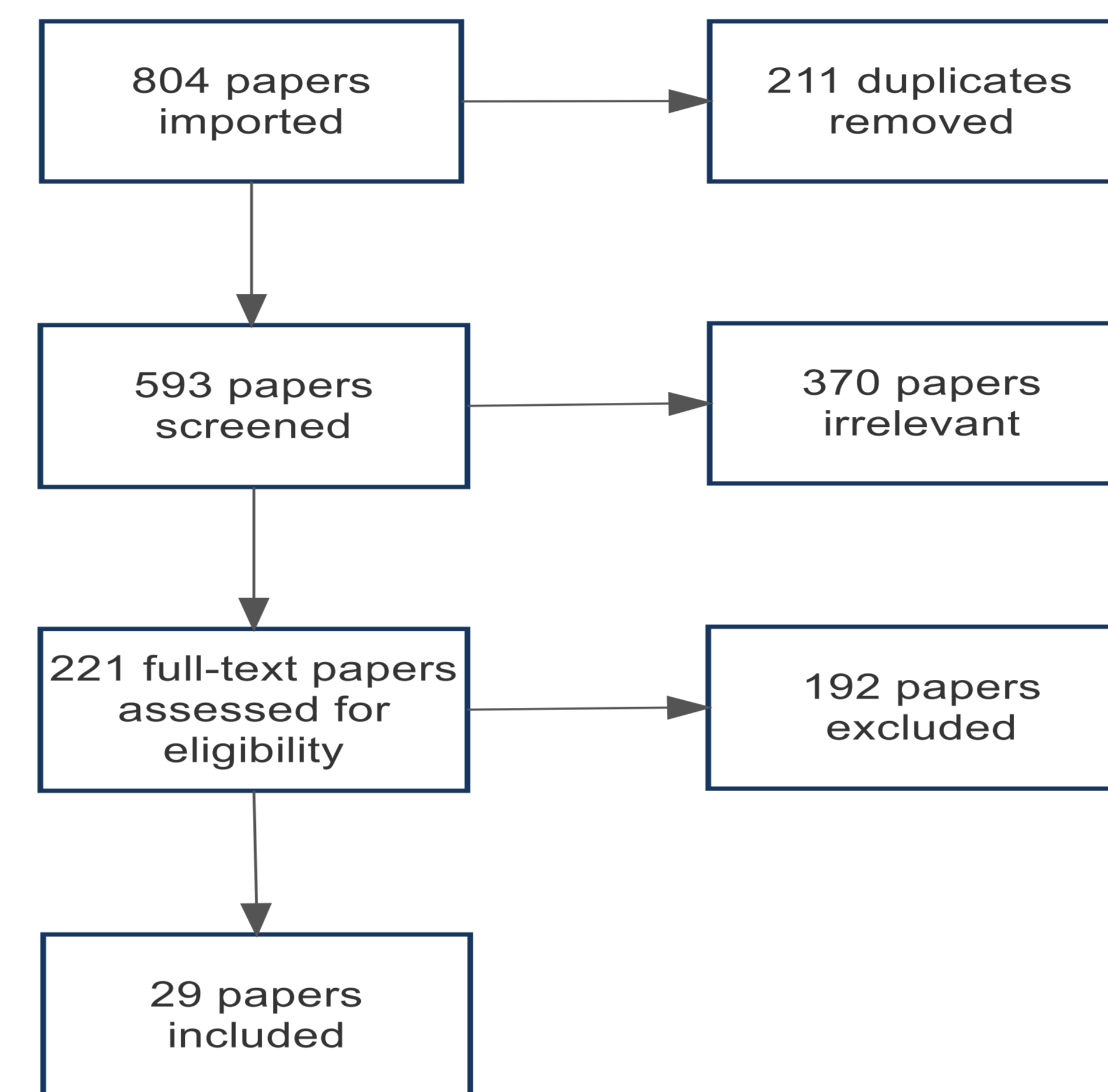


Figure 1: PRISMA flow diagram summarizing the screening process.

Perceptions About AT	
<ul style="list-style-type: none"> • Need for AT • Adjusting to AT • Influencing factors (e.g., funding, environment) • Performance improvements • Seeking acquisition advice 	
AT Examples	Daily Activities Using AT
<ul style="list-style-type: none"> • Mobility & bathing aids • Mobile applications • Cooling suit • Computer accessibility • Vehicle modifications 	<ul style="list-style-type: none"> • Functional mobility • Transportation • Personal care • Household management • Active recreation • Socialization

Table 2: Peer-reviewed journal findings.

- Consumer publications shared participant experiences in matching AT to specific tasks around their homes & communities

Preliminary Themes with Examples



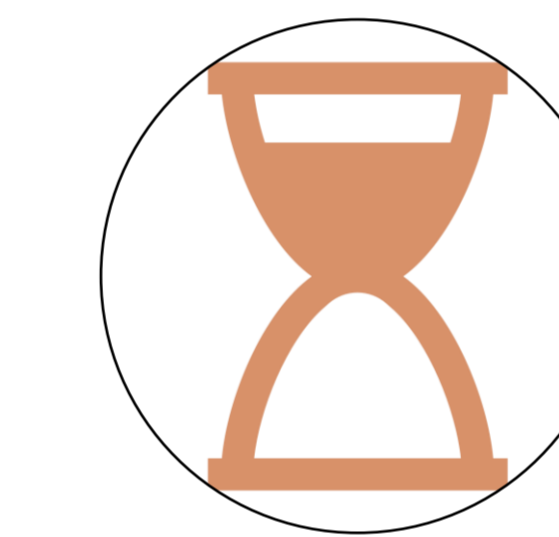
Feelings

Getting out of the house and going to a function is a rare occasion for Betty. During a church function, she learned she had a flat tire. This became a frustrating experience for Betty, putting a damper on her whole weekend.¹¹



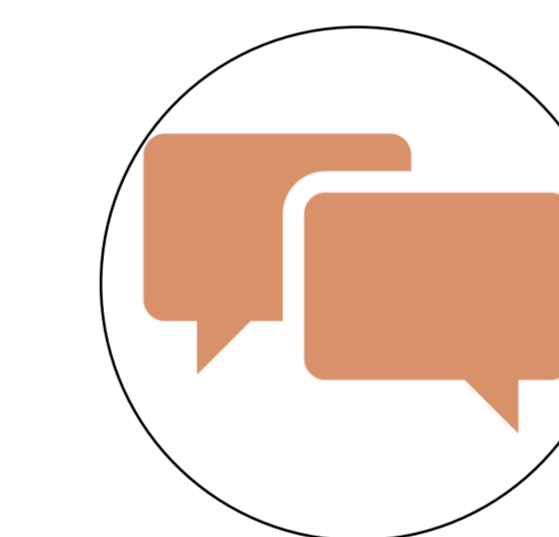
Changes due to AT

PwMS with heat intolerance describe how the cooling suit has made it possible for them to travel with family, as it keeps them at an optimal temperature. Without the cooling suit, PwMS tend to have conflicts with those around them regarding finding an optimal temperature for all.¹²



Process & Temporal Factors

Becky talked about how she was able to manage until about 10 years ago when her mobility slowly started to go down hill. She explained that she progressed from a cane to a walker to a wheelchair and now to a specialty wheelchair.¹³



Feedback/Advice

Felicity, a user of a mobile application, describes how there were too many words and all the reading tired her out quite a bit.¹⁴



Matching Environment & AT

PwMS discuss how they have to plan and think twice before they leave the house to ensure the location they are going to and their route of transportation is accessible to them and the type of AT they use and require.¹⁵

Summary & Next Steps

Summary

- Limited research on experiences & use of AT by PwMS for daily activity engagement
- Evidence for future directions & implications to support AT acquisition & matching for PwMS

Next Steps

- Complete consumer publication analysis & final conclusions

Alexandra Jackson – 19anj@queensu.ca
References available upon request.