

# SENSORY PROCESSING AND QUALITY OF LIFE FOR PERSONS WITH MULTIPLE SCLEROSIS (MS)

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## Acknowledgements

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## Learning Objectives

- Consider how client perspectives informed the development of the current study
- Examine how Dunn’s Model of Sensory Processing relates to cognitive fatigue and MS
- Delineate study design and methodology
- Describe the relationship between sensory processing, cognition and fatigue on quality of life for persons living with MS
- Explore practice implications

## MS Society of Canada & Client Perspectives

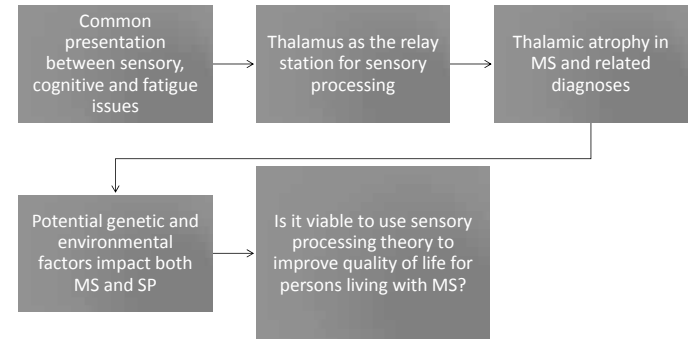
2008	Zamboni’s “liberation therapy” for CCSVI
2009	Approximately 0.01% of MSSC’s research funds directed towards research on symptom management and quality of life
2010	<b>MSSC Research Priorities Discussion</b>
2012	<b>Listening to People Affected by MS project</b>
2014	17% of total funds directed to research on symptom management and quality of life

## Sensory Processing & Quality of Life



"Sensory Overload" by Gretchen Leary

## Literature Review



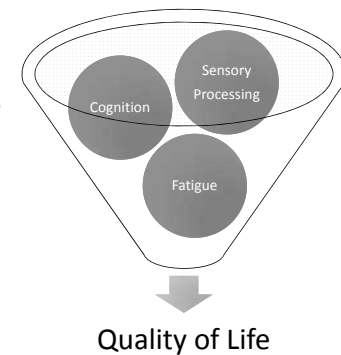
## Hypotheses

There is a significant inverse relationship between atypical sensory processing preferences and quality of life:

1. Higher scores in low registration and sensory sensitivity are related to a lower HRQoL score.
2. Higher scores in low registration and sensory sensitivity are related to high levels of cognitive fatigue.

## Objective

To describe how sensory processing preferences, cognition and fatigue relate to variances in quality of life



## Methods

- Approved by the HREB at the University of Manitoba and the Health Sciences Centre Impact Committee
- Potential participants were screened through the MS Database and Registry
- Cross-sectional study design to collect data from adults living with MS who have been recently referred to occupational therapy for cognitive and/or fatigue assessment

## Data Collection

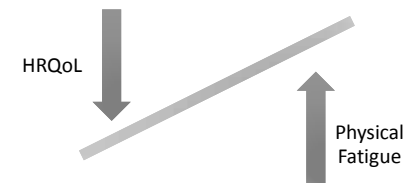
- Demographics (age, sex, and diagnosis from the EMR)
- Adolescent/Adult Sensory Profile (AASP)
- Modified Fatigue Impact Scale (MFIS)
- Montreal Cognitive Assessment (MoCA)
- RAND-36

## Results

### Description of Sample

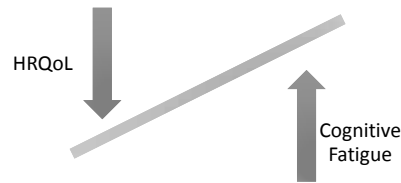
Size	Age (Range, Mean)	Sex	Clinical course	MoCA	MFIS (Mean, SD)	AASP (Mean, SD)
N=30	20-66, 48	22 female 8 male	18	24 > cut-off	Cognitive subscale 21.7, 8.0	"More than most people" in low registration (40.2, 7.8)
			RRMS	6 < cut-off	Physical subscale 28.2, 7.9	"More than most people" in sensory sensitivity (42.5, 8.4)
			8 SPMS			
			3 PPMS			
			1			
PRMS						

## Results: Physical Fatigue & QoL



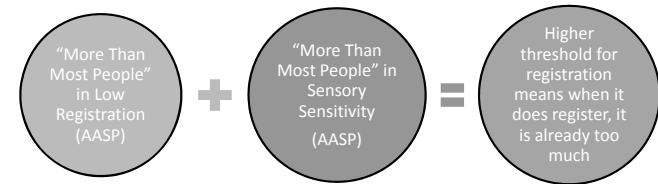
Moderate negative correlation between MFIS physical fatigue subscale and RAND-36 Physical Functioning (-.44,  $p=.02$ ) and Energy/Fatigue (-.47,  $p=.009$ )

## Results: Cognitive Fatigue & QoL



Moderate negative correlation between MFIS cognitive fatigue and RAND-36 Role Limitations Emotional (-.49,  $p=.0075$ ), Emotional Wellbeing (-.47,  $p=.009$ ), Social Functioning (-.47,  $p=.009$ ) and General Health (-.55,  $p=.0015$ )

## Results: Sensory Processing



Sample significant for “More than most people” mean scores in low registration (40) and sensory sensitivity (43) per the AASP

## Results: Sensory Processing & QoL

**Low Registration** correlates with decreased social functioning and emotional wellbeing, as well as increased role limitations

**Sensory Seeking** correlates with higher levels of emotional wellbeing

**Sensory Sensitivity** correlates with decreased emotional wellbeing, general health, as well as increased role limitations

**Sensation Avoiding** correlates with decreased social functioning, emotional wellbeing, and general health, as well as increased role limitations

## Results: Sensory Processing & Cognitive Fatigue

**Low Registration** correlates with increased cognitive fatigue

**Sensory Seeking DOES NOT** correlate with cognitive fatigue

**Sensory Sensitivity** correlates with increased cognitive fatigue

**Sensation Avoiding** correlates with increased cognitive fatigue

## Conclusions

- Quality of life is impacted by sensory processing preferences and fatigue
- Sensory processing preferences are related to cognitive fatigue, and presentation of cognitive or fatigue impairments needs to be considered alongside sensory processing

## Practice Implications

- Finding consistent with literature documenting distinct patterns of sensory processing across disabilities and diagnosis
- Intervention may be focused on education, self regulation, modulation, shaping the environment, and communication
- Knowledge is power. Power impacts choice. Choice improves quality of life.

## Practice Implications

“Central to sensory integration and processing disorders is a disruption of the ability to engage and participate in everyday occupations, and addressing this issue is the core of occupational therapy.”

(Lane & Lynn, 2011)

## Limitations

- Sensory processing preferences are assumed to be stable across the lifespan, but has not been established via a longitudinal study
- No gold standard for measuring fatigue, cognitive fatigue and “fatigability” over time
- Study did not address depression and anxiety, which are linked to sensory processing and highly prevalent in MS

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## Future Directions

- Development and piloting of an intervention program based on sensory processing patterns and preferences for people living with MS
- Explore the role of sensory processing related to “fatigability” and cognitive fatigue

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## Questions?

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