The Effect of Occupational Therapy on Resilience and Quality of Life in Individuals with Multiple Sclerosis

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Introduction

Resilience is a complex construct generally defined as an individual's positive adaptation in response to stress or adversity[1-4]. Examples of stress or adversity are socioeconomic disadvantage, chronic illness (such as multiple sclerosis (MS)), and catastrophic life events[5]. MS is a potentially disabling illness in which occupational therapy (OT) has played an important role in rehabilitation though educating individuals on functioning independently. However, there have been very few studies in the literature examining the relationship between resilience and the rehabilitation process or its effects on health related quality of life (HRQOL) in MS. OT focuses on mitigating MS symptoms that are causing functional impairment and may therefore increase resilience and HRQOL.

Objective

The purpose of this study is to measure the impact of OT on resilience and HRQOL in clients with MS and to determine the relationship between resilience and HRQOL

Methodology

Resilience Scale

Level of resilience, as determined through the Resilience Scale© (RS), was the primary outcome measure [6]. The RS was developed as a method of examining the degree of resilience one possesses. It is a 25-item, 7-point scale, with demonstrated validity and reliability[6].

Sample statements:
• I usually manage one way or another
• I do not dwell on things that I can't do anything about

Multiple Sclerosis Impact Scale (MSIS-29)

HRQOL, as determined through the MSIS-29, was the secondary outcome measure. The MSIS-29 is a clinically useful assessment with demonstrated validity and reliability[7]. It is a 29-item likert scale measuring the physical and psychological impact of MS.

Sample statements:
• Limitations to social or leisure activities at home
• Problems using transport

Participants

Individuals with a diagnosis of MS coming for a routine appointment at the MS Center at New York University Langone Medical Center, were invited to participate in this study. A convenience sample was drawn from cohorts either referred or not referred to occupational therapy. Sixty-four subjects with confirmed MS participated; 35 experimental subjects received OT (experimental) for a period of 6-8 weeks and 29 MS subjects (controls) did not receive OT intervention. Both groups received all other usual and customary treatment at the center. Seventy-nine percent were female; the average age was 43 (range: 17-72).

Procedure

Participants completed a demographic questionnaire and were given the RS and MSIS-29 to establish a baseline score of resilience and HRQOL. The occupational therapy intervention for 6-8 weeks focused on improving functional independence in activities of daily living and life roles, particularly affected by MS symptoms. After 8 weeks, the RS and MSIS-29 was again administered to assess post intervention resilience and HRQOL.

Results

Measures of Resilience and Quality of Life

In the experimental group (n=35), total scores for both resilience and HRQOL improved significantly (p≤.001 with large effect sizes). In contrast, control subjects did not show change in resilience or in quality of life as measured by the MSIS-29.

When comparing differences between the experimental group and the control group, there was a significant difference with large effect sizes in the pre-test scores of both the RS and the MSIS-29. There was no difference between the groups in the RS after the experimental group received occupational therapy. There was a significant difference in the MSIS-29 after the experimental group received occupational therapy, although there was a very weak effect size for this difference.

For the RS, a higher score = better resilience.

For the MSIS-29, a lower score = better quality of life.

Change in resilience and in quality of life for each group

	OT Participants		Control		Comparison			
Resilience Scale	M	SD	M	SD	t	df	p	Cohen's d
Pre-test	117.8	29.17	142.24	23.62	-3.70	62	.000	-0.91
Post-test	154.71	17.52	142.61	31.81	1.76	61	.083	.49
MSIS-29								
Pre-test	97.54	22.17	52.76	23.13	7.94	60	.000	1.98
Post-test	52.76	23.13	54.71	23.77	3.68	50	.001	.04

Correlations were computed to determine if there was a relationship between the RS and the MSIS-29. For all 64 subjects, the pre-test for RS correlated significantly with the pre-test of the MSIS-29, as did the post-test for RS with the post-test of the MSIS-29. However, when segregating the two groups, the experimental group had no significant correlations between either of these relationships, and the control group had a significant relationship only with the two post-tests.

All subjects	Pretest RS	Post-test RS	Pre-test MSIS-29	Post-test MSIS-29
Pretest RS	--	.180	-.417***	-.482
Post-test RS	.180	--	-.064	-.303*
Pre-test MSIS-29	-.417***	-.064	--	.697***
Post-test MSIS-29	-.482	-.303*	.697***	--

*** p < .001
* p < .05

Relationship between Resilience and HRQOL

Researchers have suggested that the psychological and physical subscale scores of the MSIS-29 have more validity for HRQOL than the total score. The RS pre-test had strong significant correlations with each of the MSIS sub scores. This finding held when comparing the experimental group with the control group on the pretest subscales and on the posttest physical subscale. While t did not reach statistical significance on the post-test psychology subscale (t=1.74, p=.088), the effect size was moderate (d=.52).
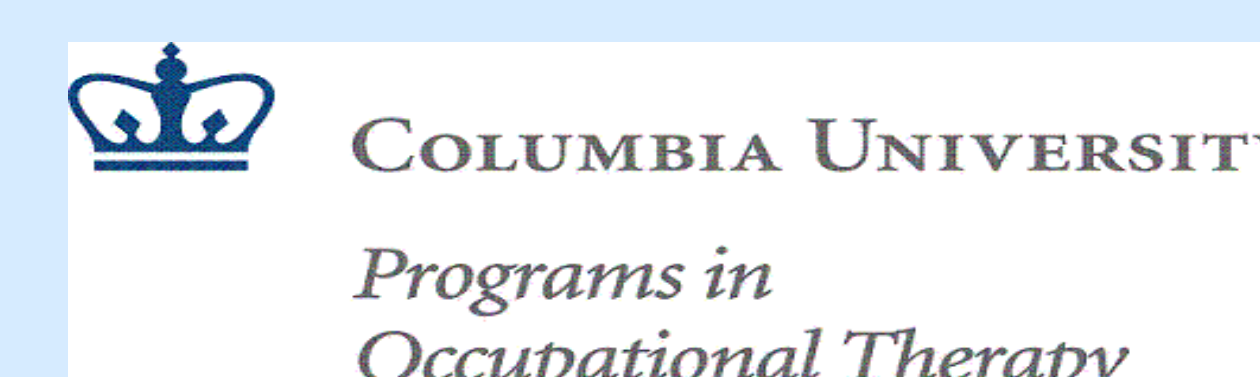
Implications

▪This is the first study to demonstrate the benefit of OT on resilience and HRQOL in MS.

▪OT may improve resilience and HRQOL of individuals with MS. Resilience and HRQOL may be independent of one another despite the fact that both may associated with positive adjustment to MS.

▪Occupational therapists have an opportunity to enhance one's resilience because one's ability to be resilient may not be related to dysfunction or severity of illness. Therefore, OT may serve as a protective factor to enhance resilience in neurorehabilitation.

▪OT intervention may result in a more positive adaptation to MS and perhaps an improvement in one's quality of life.

▪The relationship between resilience and quality of life should be explored.

References

1. Atkinson, P., Martin, C, & Rankin, J. (2009). Resilience Revisited. *Journal of Psychiatric and Mental Health Nursing*, 16, 137-145.
2. Fine, SB (1990) Eleanor Clarke Slagle Lecture--Resilience and Human Adaptability: Who Rises Above Adversity? *American Journal of Occupational Therapy*, 45, 6, 493-503
3. Jacelon, CS, (1997) The trait and process of resilience. *Journal of Advanced Nursing*, 25:123-129
4. Wagnild, G. & Young, HM (1993) Development and psychometric evaluation of the resilience scale. *Journal of Nursing Measurement*, 1:2: 165-178
5. Luther, S.S., Cicchetti, D., & Becker, B. (2000). The Construct of Resilience: A Critical Evaluation and Guidelines for Future Work. *Child Development*, 71(3): 543-562.
6. Wagnild, G. (2009a). The Resilience Scale: Users Guide for the US English version of the Resilience Scale and the 14-Item Resilience Scale (RS-14). Worden, Montana: The Resilience Center.
7. Hobart, J., Lamping, D., Fitzpatrick, R., Riazi, A., & Thompson, A. (2001). The multiple sclerosis impact scale (MSIS-29) a new patient-based outcome measure. *Brain*, 124(5), 962-973.

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