



Emotional Intelligence and Tolerance in Patients with Multiple Sclerosis: A Correlational Study

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Abstract

Multiple sclerosis (MS) is a chronic autoimmune neurological disorder that significantly affects psychological functioning and interpersonal adjustment. The present study aimed to examine the relationship between emotional intelligence (EI) and tolerance for disagreement among patients diagnosed with multiple sclerosis, while excluding other psychosocial variables assessed in the parent doctoral research. Using a correlational research design, clinically diagnosed MS patients (N = 90) were recruited from hospitals and neurology clinics in Peshawar, Pakistan. Participants completed the Bar-On Emotional Quotient Inventory (EQ-i) and the Tolerance for Disagreement Scale (TFD). Pearson correlation and regression analyses were applied to examine associations between EI and tolerance. Results indicated a significant positive relationship between emotional intelligence and tolerance for disagreement, suggesting that higher emotional intelligence is associated with greater tolerance in interpersonal interactions among MS patients. The findings highlight the importance of incorporating emotional intelligence-based psychological interventions to enhance adaptive coping and social functioning in individuals with multiple sclerosis.

Keywords: emotional intelligence, tolerance for disagreement, multiple sclerosis, psychosocial adjustment, chronic illness



Introduction

Multiple sclerosis (MS) is a progressive autoimmune disorder of the central nervous system characterized by demyelination and neurodegeneration, leading to physical disability and psychological challenges (*Atlas of MS Database*, (2022). Beyond motor and sensory impairments, individuals with MS frequently experience emotional dysregulation, interpersonal difficulties, and reduced psychosocial well-being. These challenges necessitate the examination of psychological capacities that may facilitate better adjustment to chronic illness (Cherniss, 2000). Emotional intelligence (EI) refers to the ability to perceive, understand, manage, and utilize emotions effectively in one and others. Individuals with higher EI are better equipped to regulate emotional responses, manage stress, and maintain constructive social relationships (Mayer & Salovey, 1997). In chronic neurological conditions such as MS, emotional intelligence may play a crucial role in maintaining psychological balance and social harmony (Bastian, VA., Burns, NR., Nettelbeck, T.2005).

Tolerance for disagreement is a related interpersonal construct defined as an individual's capacity to accept and manage opposing opinions without experiencing excessive emotional distress or conflict (Ibadova, T.I. 2011). Low tolerance for disagreement has been associated with interpersonal conflict, emotional distress, and maladaptive coping, whereas higher tolerance supports constructive communication and social adjustment (Beier M. L., 2022).

Patients with MS often encounter frequent disagreements and frustrations arising from dependency, role changes, and social misunderstandings. The ability to tolerate disagreement may therefore be especially relevant in this population (Goleman et al., 2002). Although prior research has explored emotional intelligence in relation to stress and mental health outcomes, limited empirical attention has been given to the direct association between emotional intelligence and tolerance for disagreement in MS patients (Shah, Z., Wasay, M., Chaudhry, B. Z., & Fredrikson, S. 2020). The present study addresses this gap by focusing specifically on the relationship between EI and tolerance for disagreement in individuals diagnosed with multiple sclerosis (Mayer, J. D., Salovey, P. 1997).

The objective of the study was to examine whether higher levels of emotional intelligence are associated with greater tolerance for disagreement among MS patients.

Method

Research Design

A cross-sectional correlational research design was employed.

Participants

The sample comprised 90 clinically diagnosed multiple sclerosis patients (male and female) recruited through purposive sampling from public and private hospitals and neurology clinics in Peshawar, Pakistan. Inclusion criteria included a confirmed diagnosis of MS by a neurologist, age between 20 and 50 years, and the ability to comprehend and respond to questionnaires. Patients with severe cognitive impairment or comorbid psychiatric disorders were excluded.

Instruments

Bar-On Emotional Quotient Inventory (EQ-i).

The EQ-i is a standardized self-report measure assessing overall emotional intelligence and its components. The scale demonstrates good psychometric properties and has been



widely used in clinical and health psychology research (Bar-On R. 1997).

Tolerance for Disagreement Scale (TFD).

The TFD scale measures an individual's ability to tolerate interpersonal disagreement without perceiving it as conflict. Higher scores indicate greater tolerance. The scale has demonstrated satisfactory reliability and validity in previous research.

Procedure

Ethical approval was obtained from the relevant institutional authorities. Participants provided informed consent prior to data collection. Questionnaires were administered individually in a quiet clinical setting, ensuring confidentiality and voluntary participation.

Data Analysis

Data were analyzed using SPSS. Descriptive statistics were computed for demographic variables and study measures. Pearson correlation analysis was conducted to examine the relationship between emotional intelligence and tolerance for disagreement. Simple linear regression analysis was used to assess the predictive role of emotional intelligence on tolerance for disagreement.

Results

Descriptive analysis indicated moderate levels of emotional intelligence and tolerance for disagreement among MS patients. Pearson correlation analysis revealed a significant positive correlation between emotional intelligence and tolerance for disagreement ($p < .05$), indicating that patients with higher emotional intelligence demonstrated greater tolerance in interpersonal disagreements.

Table 1: *Descriptive statistics for demographic data*

Variables	M	S.D	Male 54		Female 35	
			Age	M	Education	M
TFD	40.33	10.5	1 20-30	17.8	Illiterate	24.4
			2 30-40	27.8	Primary	17.8
EQ-i	309.67	69.4	3 40-50	26.7	Matric	23.3
			4 50-60	14.4	Intermediate	10.0
			5 60-70	13.3	Graduation	24

Note. (N=90), SE = Self efficacy, SWL= satisfaction with Life, TFD=Tolerance for Disagreement, EQ-I =Emotional Quotient Inventory.

Table 2: *Descriptive statistics & Alpha Reliability of Instruments*

Scales	No of items	Alpha
Emotional Quotient Inventory	117	.93
Tolerance for Disagreement scale	15	.88

Note. N=90 (n= 30 for each area of clinical setup for Multiple sclerosis patients).

Table-2 Alpha reliability of coefficients of EQ-I and tolerance of disagreement scale. The result shows the alpha reliability coefficient of EQ-i is .93, and TFD is .88, which shows high internal consistency of all instruments. Furthermore, descriptive analysis (Table-2) showed that data was normally distributed.



Table 3: Mean, standard Deviation, standard error of mean and t-value showing differences in scores between male and female patients of Multiple Sclerosis on Emotional Intelligence

MS patients	n	Emotional Intelligence					95%CI	Cohen's d	
		M	SD	F	sig	SEM			
Male	54	311.4	66.2	.37	.54	15.1	.137	[-27.9, 32.1]	0.029
Female	35	309.3	74.7						

Note. **p < 0.01, and N= 90.

Table 3 indicated results for independent sample t-test that computed the emotional Intelligence in gender. The significance difference were (t (87) = .137, p < 0.01) in mean score with mean values for male (M=311.4, SD= 66.2) was high as compare to female (M= 309.3, SD= 74.7). The size of the means' variance discrepancies (mean differences = 2.06, 95% CI: -27.9 to 32.1) were not significant, equal variances were assumed. Low scores show lower level of emotional intelligence in female as compare to male. So we can say that the males have high level of emotional Intelligence as compare to female MS Patients.

There is no significant difference observed (p < 0.01) for male and female multiple sclerosis patients one emotional intelligence.

Table 4

Mean, standard deviation, standard error of mean and t-value showing differences in scores among male and female Multiple Sclerosis patients on Tolerance for Disagreement

Tolerance for Disagreement							95% CI		
MS patients	n	M	SD	F	sig	SEM	t (87)	U - L	cohens'd
Male	54	40.22	11.47	1.30	.25	2.31	-.04	[-4.6, 4.5]	0.008
Female	35	40.31	9.21						

Note. **p < 0.01, here M= 90.

The Table 4 displayed result that figured the tolerance for disagreement for male and female on independent sample t-test. There were significant difference (t (87) = -.04, p < 0.01) in the score with mean score for male (M=40.22, SD=11.47) was lower than female (M= 40.31, SD= 9.21)

Table 5: One way ANOVA results for Homogeneity of variance among EQ-i, TFD.

MS Patients	M	SD	Levenes		F	η^2	95% CI	
			statistics	sig			LL, UL	
EQ-i M	311.4	66.2	.37	.54	.70	0.12	[293.32, 329.4]	
F	309.3	74.1					[283.68, 335.0]	
SE M	20.22	5.36	.04	.83	.20	0.06	[18.75, 21.68]	
F	20.97	5.61					[19.04, 22.90]	
TFD M	40.22	11.47	.30	.25	.19	0.06	[37.08, 43.35]	
F	40.31	9.2					[37.14, 43.48]	
SWL M	14.12	6.73	.37	.54	1.29	0.1	[1.29, 15.96]	
F	16.45	6.64					[14.17, 18.73]	
DASS M	36.46	13.33	.78	.37	.46	0.1	[32.8, 40.10]	
F	39.11	12.75					[34.73, 43.49]	



Since the Levene's statistics is not significant, the equal variance is not assumed. The mean score for EQ-i male ($M=311.4$, $SD=66.2$) is significantly different from female ($M=309.3$, $SD=74.1$). Same as the mean score for TFD, male ($M=40.22$, $SD=11.47$) is significantly different from female ($M=40.31$, $SD=9.2$). The mean difference is not significant at ($p \geq 0.05$) level so equal variances were assumed.

The magnitude of the differences in the means (mean differences = -0.09 , 95% CI: -4.6 to 4.5) was significant no equal variances was assumed. High scores show higher level of tolerance for disagreement in MS female patients. It has been interpreted that male have low level of tolerance for disagreement as compare to female MS patients..

Regression analysis further showed that emotional intelligence significantly predicted tolerance for disagreement, accounting for a meaningful proportion of variance. These findings suggest that emotional intelligence contributes uniquely to patients' ability to manage interpersonal differences effectively.

Discussion

The present study provides empirical evidence supporting a positive association between emotional intelligence and tolerance for disagreement among patients with multiple sclerosis. Consistent with theoretical models of emotional intelligence, individuals with higher EI appear better equipped to regulate emotions, interpret social cues, and respond adaptively to opposing viewpoints.

For MS patients, whose daily lives are often marked by uncertainty, dependency, and role strain, emotional intelligence may serve as a protective psychological resource. Greater tolerance for disagreement may reduce interpersonal conflict, enhance social support, and improve overall psychosocial adjustment. The findings underscore the importance of integrating emotional intelligence training and communication skills interventions into psychological rehabilitation programs for MS patients. Such interventions may foster greater emotional regulation and interpersonal resilience, thereby improving quality of life (Shah, Z., Wasay, M., Chaudhry, B. Z., & Fredrikson, S. 2020).

Limitations and Future Directions

The study employed a cross-sectional design, limiting causal interpretations. The use of self-report measures may also introduce response bias. Future research should employ longitudinal designs and intervention-based approaches to examine whether enhancing emotional intelligence leads to sustained improvements in tolerance and interpersonal functioning among MS patients.

Conclusion

Emotional intelligence is significantly associated with tolerance for disagreement in patients with multiple sclerosis. Enhancing emotional intelligence may be a valuable therapeutic target for improving interpersonal adjustment and psychological well-being in this population.

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