



Prediction of Mental Health in MS Patients: The Role of Psychological Resilience and Cognitive Integration

Maryam Kazemi^{1,*},

¹ Master of General Psychology, Health Deputy of Kermanshah University of Medical Sciences, Kermanshah, Iran

*Corresponding author: Maryam Kazemi, Master of General Psychology, Health Deputy of Kermanshah University of Medical Sciences, Kermanshah, Iran.
E-mail: kazemi.maryam94@gmail.com

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Abstract

Introduction: Multiple Sclerosis is a chronic disease of the central nervous system in which myelin damage occurs locally. This study was conducted to predict the mental health of patients with MS regarding cognitive integration and psychological resilience.

Methods: In a correlational-descriptive study, all people with MS disease in the west of Iran in 2015 were studied. Hundred people were selected from medical and clinical centers by using easy sampling method. They filled out acceptance and action of Bond et al (2011), cognitive incongruity Gillanders et al (2014), mental health (GHQ-12) and Demographic Information Sheet questionnaires. Pearson correlation factor and regression efficiency factor were used to analyze data with SPSS V. 22 software.

Results: The results showed that mental health has a negative correlation with psychological integration ($r=-0.438$, $P<0.001$) and positive significant correlation with psychological resilience ($r=0.487$, $P<0.001$). Regression analysis showed that 24.3% of mental health variance factor is predicted by psychological resilience ($P<0.001$).

Conclusions: According to the results, information and knowledge could be provided by holding training courses to increase psychological resilience, so that mental health of MS patients would be provided.

INTRODUCTION

Multiple Sclerosis (MS) is an autoimmune disease which is progressive myelin in the central nervous system [1], the most common neurotic disorder in young adults and depending on the geographical area, the incidence of the disease is 3.5% to 47% [2]. One feature of Multiple Sclerosis is that it cannot be predicted from one person to the other and not predictable at different times. In addition, its prognosis is not predictable [3]. Patients will experience unpleasant and unpredictable symptoms, hard medical plan, drugs side effects, and increase the level of physical disability. Prevalence of MS in Iran is about 15 to 30 people per 100 people [4]. In addition to the biological mechanism involved that could be an effective factor in diseases such as MS, psychological factors can influence, too [5]. More surveys in patients with MS have focused on problems associated with the psychological viewpoints but cognitive and psychological factors have always been ignored [6, 7]. Researchers suggest that one of the psychological aspects of patients with MS psychological problems and poor quality of life [8] is mental health. As the World Health Organization

(WHO) mentioned, mental health is a very important part of health promotion and planning. The organization defined mental health as a state that a person knows his abilities so that he/she can deal with the pressures of normal life to be fruitful for the community and be able to decide and cooperative participation. Accordingly, mental health is the basis of prosperity and health for individuals and society [9]. So many factors affect mental health, one of them is psychological resilience [10]. The ability to change mental set in order to adapt changing environment stimulant, the main element of operational definitions is psychological resilience. [11] The ones, who have the ability to think resiliently, use an alternative explanation. Positively rebuild their conceptual framework, accept challenging situations or the stressful events, and had more tolerance than those who are not resilient in other aspects, which were considered [12]. Mental health is the integration of thoughts or cognitive integration, which eliminates the boundaries among thoughts, events, and actions [13]. This term can be used to describe the beliefs upon which patients can hurt people

by their thoughts [14]. People, who are involved in the cognitive integration process, experience extreme responsibility and guiltiness feeling to their bothering thoughts [15, 16].

About MS variables in this research, there has been no research. Nevertheless, some similar studies have been conducted about. Hosseini et al [17], Sultani et al [18], Ataie Moghanloo et al [19], Davoodi et al [20] and Ghamari Givi et al [21] have studied on mental health, psychological resilience, psychological and mental health in different classes of society and different people. Hence, due to spread of MS context and compensate the lack of studies about psychological variables related to it, and assess the social [22, 23], economic, and medical impact of it that imposes some problems to the individuals and society, this study is highly important. Therefore, it aimed to predict the patient's mental health with consideration of psychological resilience and cognitive integration.

METHODS

This descriptive - correlational study included all patients with MS in the western cities of Iran (Kermanshah, Hamedan & Kordestan) that referred to health and clinical centers. According to Lindeman et al [24, 25] suggestion, the size of the sample group in regression and correlational studies should be at least 100 individuals. So these numbers were chosen by easy sampling method. Some of the inclusion criteria to the study were the following: Diagnosis of MS, and age range from 15 to 50 years old. In addition, some of the exclusion criteria from the study were the following: lack of cooperation and use of psychiatric drugs. The participants were assured that their data would not be presented anywhere. From below instruments used to data gathering.

The first was a 12-question version of Goldman's mental health questionnaire, which was set in 4 degrees of Likert scale. Its reliability was verified by Cronbach alpha; 0.90. The correlation coefficient of GHQ and

Middlesex Hospital that was 0.55 for survey contemporary validity of GHQ [26]. The second version of acceptance and action questionnaire which was made by Bond et al [27] was used to evaluate experimental avoidance and psychological resilience. This scale has 7 questions in 7-degree of Likert scale the average factor of Alpha was reported 0.84, and the retest reliability factor was reported 0.81 and 0.79. To assess cognitive integration, Gillands, and et al. [28] Questionnaire was used that has 7 questions on a 7-degree Likert scale. Test-retest reliability of this questionnaire was 0.86 and its internal consistency of the questionnaire was obtained 0.91. In addition to descriptive statistical techniques for data analysis, inferential statistics indicators such as Pearson correlation factor and regression analysis were used. The software which used for data analysis was SPSS version 19. These domain tools allow us to predict mental health to absenteeism. Average factor alpha is 84.0 (78.0-88.0) and stability of retest in 3 and 2 months are 81.0 and 79. These tools shows differential credit and it seems that AAQ-2 measure similar metal-evaluation concept as AAQ-1 but it is more stable.

RESULTS

According to the results, 75% of participants were women and 25% of them were men. 29% of them were single and 58% were married while 13% were divorced. The average of their ages were 35.20 ± 13.34 . The average of patients according to general health were 22.47 ± 8.16 , according to cognitive integration were 24.66 ± 14.91 , and according to psychological flexibility were 22.5 ± 11.03 . The results of Pearson correlation factor showed that there is a significant negative relationship between mental health and cognitive integration ($P < 0.001$, $r = -0.438$) and there is also a significant positive relationship between mental health and psychological resilience ($P < 0.001$, $r = 0.487$) (Table 1).

Table 1: Results of Pearson Correlation Factor in Mental Health, Cognitive Integration, and Psychological Resilience

variables	Mental health	
	Correlation factor	Significance level
Cognitive integration	-0.438	0.001
Psychological resilience	0.487	0.001

For performing regression analysis, first main assumptions (which means continuity and normality); second, linearity and independence of errors, and after the establishment of assumptions, finally regression factor was used for predicting variance of mental health with entering psychological resilience factor and

cognitive integration. The results of regression analysis showed that amount of observed F ($P < 0.001$, $F = 10.00$) was significant and about 24.3% variance of mental health variable by cognitive integration and psychological resilience was predictable (Table 2).

Table 2: Results of the Regression Model and Variance Analysis of Psychological Integration, and Psychological Resilience in predicting Mental Health

Model	R	R ²	SE	Variance source	Sum of squares	Df	Average of squares	F	Sig
Psychological integration	0.493	0.243	7.17	Regression	1602.74	2	801.37		
Psychological resilience	0.493	0.243	7.17	Remaining	4998.76	97	51.53	15.55	0.001
				value of all	6601.50	99			

Psychological resilience ($t=2.54$, $\beta=0.384$) could predict mental health in $P<0.05$ level while psychological integration was not able to predict mental

health in significant levels of a beta standardized factor for psychological resilience in the regression equation was positive (Table 3).

Table 3: Determination of Psychological Integration and Psychological Flexibility in Prediction of Mental Health

Model	B	Beta	t	Sig
Psychological integration	-0.069	-0.127	0.841	0.4
Psychological resilience	0.284	0.384	2.54	0.01
Constant amount	14.365	-	8.77	0.001

DISCUSSION

Regression analysis results showed that psychological resilience dimension could predict mental health variance among MS patients. Although little research about the variables was performed, the research is in line with other research findings such as Hosseini et al [17], Sultaniet al [18], Ataie Moghanlou et al [19] studies. In explaining this, it could be noted that people with psychological resilience could adapt to greater problems. They confront the problems more creatively and try to increase their mental health level by planning, asking others for help, and use coping resources. It seems that one of the reasons that we cannot predict mental health with cognitive integration, can be cited as this: the coping way that MS patients choose thoughts, and distracting thoughts and others use different other ways like suppression of ideas and etc. that these strategies may sometimes lead to reduce tension and concern in patients, so due to dual acting that cognitive integration has for MS patients it cannot be effective in predicting mental health. Although more researches are necessary for this field, it is better to use more accurate tools which are specialized for MS patients to measure cognitive integration and psychology of thoughts. The results showed that there was a significant positive correlation between mental health and psychological resilience. The results of this study were in line with Hosseini and et al [17] studies, and Sultani and et al [18] studies. In explaining this, it should be noted that psychological resilience as one of the treatments for the cognitive procedure to help MS patients adapt their new and unexpected situations and more adaptability in accepting the illness and increase mental health.

This ability also causes people to accept emotions and new stimulus associated with their disease without becoming defensive and also helps people have better reactions and tolerate more easily. The presence of these characteristics causes that people with psychological resilience have better mental health. The results also showed that there was a significant negative correlation between mental health and cognitive integration. Results of this study were in line with Ataie moghanlou and et al [19], Davoodi and et al [20], and Ghamari Givi and et al [21] studies. Presence of disorders and symptoms, of course, is the result of dysfunctional beliefs. One of the most basic dysfunctional belief is cognitive integration that is the border between action

and thoughts goes away. And this will cause such thoughts and beliefs and act accordingly regardless of truths. On the one hand, mental and physical situation of MS patients cause them to constantly look to dominate affairs and since it is not possible to dominate all aspects of affairs, therefore they try to dominate the situation through their thoughts and recognition. And this causes them not to distinguish between reality and the imaginary world and more fusion and cognitive integration happens to them and subsequently, their mental health degree will be diminished. The present study has limitations. First, this study is correlation research and cannot be considered a cause-effect relationship between variables. In this study, questionnaires were used to gather data, thus regarding the questionnaires that have an aspect of self-evaluation may cause entrenchment in answers so it is advisable that interview be used in future studies.

CONCLUSIONS

Given the widespread prevalence of MS disease and according to psychological aspects of this disease, psychological aspects should be considered as physical aspects. Considering the results, by holding educational courses, information and knowledge of these patients can be raised to increase psychological resilience, therefore increase of mental health and decrease of cognitive integration happens.

ETHICAL CONSIDERATION

The participants in this study had discretion to cooperate and their consent was attracted orally, the information of participants was preserved, they were assured that their information will be kept confidential and will be reported in groups. Therefore, all ethical consideration have been observed in this research.

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CONFLICTS OF INTEREST

There is no conflict of interests.

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AUTHOR'S CONTRIBUTION

Design, Drafted, Collection of data and writing the article performed by Maryam Kazemi.

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