

The relationship between personality traits and Life Expectancy in Patients with Multiple Sclerosis

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Objectives: Multiple Sclerosis is an incurable and chronic disease of the central nervous system. The main purpose of this survey is to compare the character types and life expectancy of patients suffering from M. S as compared with normal people. This survey was conducted using the Persian translation of NEO-FFI (NEO-Five Factor Inventory) and Herth Life Expectancy.

Method: Thirty nine people suffering from multiple sclerosis, who were hospitalized in an nursing home, were chosen. As a control group there were 39 healthy people who had no background of physical or mental diseases. These people were selected from educational centre scientific and the personnel of Islamic Azad University, Science and Research Campus. Healthy people were matched to control group according to sex, gender, marital status and education.

Results: To analyze the data, T tests were used. The results of the survey show that people suffering from multiple sclerosis were significantly different from healthy people in three factors, neuroticism, extraversion and openness. For life expectancy there was no significant difference between the two groups.

Conclusion: People affected by Multiple Sclerosis achieve higher marks levels of the function of neuroticism compared with the healthy people. They are also agreeableness in a lower state, due to the function of openness to experience compared with the safe ones and in a lower state compared with the healthy persons.

Keywords: Personality Traits, Life Expectancy, Multiple Sclerosis, NEO-FFI (NEO-Five Factor Inventory) and Herth Life.

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Introduction

Multiple Sclerosis (M. S) is a kind of Chronic Neurotic disease which involves parts of the brain and spinal cord. (1). Patients stricken with such a disease may lose some of their abilities for the cause. The above mentioned disease would involve many young, intelligent and active individuals of which the reason is not completely known, there is not presented any obvious and exact treatment pertaining the case. Being aware of the disease and recognition of different personal aspects of the afflicted individuals plus sheltering actions could restore patients to active and prolific life.

Multiple Sclerosis has been allocated as the most crucial subject within medical sciences; they hope to

control the case is growing hastily (2).

Current research show that patients stricken by the disease hold different personal characteristic compared with the healthy persons. The result of research accomplished by Benedict et al (2003) on the personal characteristics of the stricken persons showed that afflicted individuals obtained high marks in the case of moral neurotic function compared with control group & they achieved low marks in the case of conscientiousness and agreeableness.

Within another study, the influence of personal characteristics on the feelings of weariness was evaluated. In another research observed high marks in the case of neurotic function. The result showed

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that high scores of neuroticism function (N), low scores of extraversion function (E), and related scores of weariness are connected with each other (3). Among many other findings in this study was the fact that the affected people achieved high scores in moral neurotic function and low marks in extraversion function. (4)

One of the psychological functions which may be related to this disease is the life hopefulness. The witness shows that there is a people are quite different from the healthy ones due to some personal functions. Within Fekri's research, relation between hope and the usefulness of confrontation against cancer among patients confined to the hospital, in cancer research center of Tehran University was thoroughly detected. The hypothesis stated that there is a significant relation between hope and usefulness of the confrontation (5).

In this research, we utilized causal-comparison procedure. In other words, because there is not any possible stroke among, we applied the procedure, in order to be originated.

The research population was the total number of the patients the center being afflicted by the disease according to a neurologist diagnosis arranged. All the patients are confined to nursing home charity. At present according to the statistics of Iranian MS society in, the total number of patients is more than 40000 whom 120 individuals are confined to the nursing homes.

In present research, we have utilized a sample of 78 people within two groups. The first group contained 39 patients afflicted by the disease whom were confined to nursing home covered an accessible group. The second group was the total of 39 intact persons who were selected from students, staff and members of science and research university campus and other legal centers concerning their age, gender and marital status. Among the first group, we had selected 20 males and 19 females of whom 22 persons were single and 17 were married. The slope of their age was between 18 up to 58 and their qualification scoped from primary school license up to Ph.D.

Special implements were used to collect information during the research as the following:

A-total personal specification records

B-NEO-FFI (NEO-Five Factor Inventory), The Five Factor Inventory are considered as the Character types, each containing a cluster of sub-character (6).

Personal scores may be different under congenial qualities within five factors, following above

description; we could easily mention that the five magnified factors are quite measured by NEO-FFI test. These factors are as following:

1. Neuroticism function
2. Extraversion function
3. Openness to experience function
4. Agreeableness function
5. Conscientiousness function

The contents of short & long schedules were normalized by Gholam Reza Nafissi, Haghshenas and Garoussi in Iran (7). Garoussi pointed out that there has been achieving less internal validity coefficients, compared with American and Spanish samples. Iranian samples had achieved higher internal validity coefficients due to the function of moralistic views. Internal validity coefficients for the function of neuroticism was %86 and extraversion was %73, for the openness to experience function was %56 and for conscientiousness function was %68 and for agreeableness function was %87. Long term validity of this questionnaire was also measured and demonstrated. A long course of six years study due to the scales of moral neuroticism, extraversion, and openness to experience has showed the validity coefficient at rates of %68 and %83 according to reports concerning the couples. The validity coefficient of two functions of agreeableness and conscientiousness views during the period of two years were %79 and %63 respectively (2).

C-Herth Life Expectancy questionnaire:

The questionnaire contains 12 questions; the minimum score is 12 and the maximum 36. Question 3 and 6 of the total selection alternatives are arranged in such a way that by replying: agreed, the person gets one point, by selecting: not sure would get 2 points and by giving the answer, "disagreed" gets 3 points. The rest of the questions are scored upside-down, meaning that: selecting the alternative of "agreed" gets 3 points, "not sure" gets 2 points and "disagreed" get 1 point. The scores between 12-24 is the sign of low level of hope and scores respectively counted as: 30-25, 36-31 will demonstrate the medium levels up to the high.

The validity of measure was evaluated by the experts working on the concept of hope and the conclusion of the test was measured by the scale of one positive sample of 306 persons containing 156 patients afflicted by cancer and 150 healthy ones, whom had been experiencing stressful incidents. The results showed %90 of the total value. Contemporaneous validity of the scale measured by Beck's desperate value showed %47 of the total.

Materials and Methods

In present research, to analyze the data we have applied two procedures of descriptive and deductive statistics. We have utilized descriptive statistics to measure the averages, demonstrating the distribution of abundance pertaining desired variables and standard deviation. Deductive statistics were used to

calculate T dependent quantities together with goodness of fit chi square and F test variables, table (1) indicates description implications due to the personal variable and Figure (1) shows the comparison of mean scores of the healthy and afflicted individuals.

Table 1. Descriptive statistics of the personal traits in both groups

variable \ Indicator	Normal individual			afflicted		
	No	average	Standard deviation	No	average	Standard deviation
Neuroticism	39	20.7436	7.62861	39	26.0789	6.22715
Openness to experience	39	29.6923	4.23739	39	26.5000	4.99594
Extraversion	39	27.5750	6.83463	39	28.7105	6.13765
Agreeableness	39	32.1795	5.59545	39	30.0270	3.78217
Conscientiousness	39	33.2564	5.78436	39	33.4737	4.91406

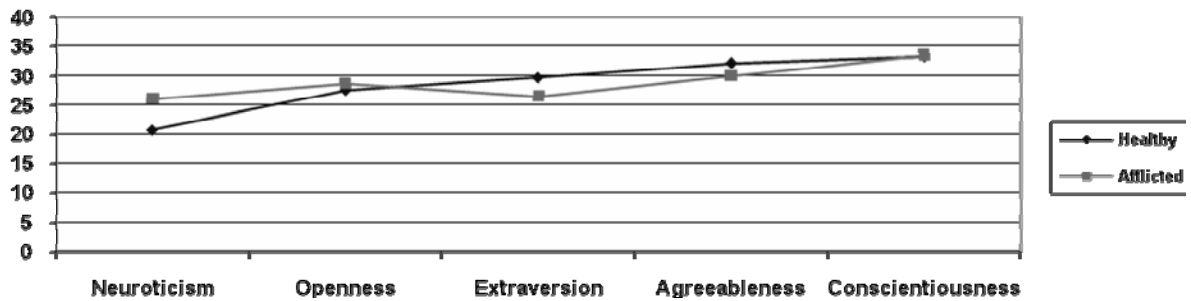


Fig 1. The comparison of mean scores in the healthy and afflicted individuals

Before we produce the analysis of research hypothesis, the observance of pre-supposition, utilizing T-independent test, using Levin experiments were completely studied (Table 2).

Table 2. The results of Levin test within the two groups

variable \ Indicator	Levin Experiments	
	F	sig
Life expectancy	1.569	0.136
Neuroticism	1.295	0.259
Openness to experience	0.445	0.507
Extraversion	1.100	0.298
Agreeableness	1.513	0.223
Conscientiousness	0.174	0.678

The pre-supposition of utilizing T-independent test groups in the condition of variance equality and the normality of score distribution within samples utilizing Levin test has been estimated.

Results

The results of the survey show that people suffering from multiple sclerosis were significantly different from healthy people in three factors (i.e. neuroticism, extraversion and openness) among the five most important ones. There was no significant difference between the two groups of life expectancy. Table (3) indicates the results of T-test within independent groups in all five hypotheses.

Table 3. The results of T-test between two independent groups

Variable \ Indicator	No	average	Standard deviation	t	Degree of freedom	Level of significance	
							Neuroticism
Neuroticism	afflicted	39	26.0789	6.22715			
Extraversion	healthy	39	27.5750	6.83463	-0.771	76	0.443
	afflicted	39	28.7105	6.13765			
Openness to experience	healthy	39	29.6923	4.23739	3.027	76	0.003
	afflicted	39	26.5000	3.99594			
Agreeableness	healthy	39	32.1795	5.59545	3.326	76	0.001
	afflicted	39	30.0270	3.78217			

Variable	Indicator	No	average	Standard deviation	t	Degree of freedom	Level of significance
Conscientiousness	healthy	39	33.78436	5.78436	-0.177	76	0.860
	afflicted	39	33.4737	4.91406			
Life expectancy	healthy	39	20.0000	21.5607	-0.396	76	0.693
	afflicted	39	20.2632	3.47722			

1- There is a positive and significant relation on Neuroticism function between the healthy people and Multiple Sclerosis patients

Considering the results of T-test, since the value of $T=3.357$ at the level of $\alpha=0.5$ is significant and positive, therefore we conclude that the average of both groups in the function of Neuroticism by the character is quite significant. Therefore, the null hypothesis is rejected and the hypothesis of the research is confirmed. In another word, between persons afflicted by the disease and the healthy ones, there is a significant difference; due to the function of neuroticism and the rate of Neuroticism within the afflicted persons are more than the healthy ones.

2- There is a positive and significant difference between afflicted people and the safe ones due to the function of extraversion.

Considering the results of T-test, since the value of $T=-0.771$ at the level of $\alpha=0.5$ is not quite significant, therefore we conclude that the mean of both groups due to the function of extraversion by the character is not significant. Therefore, since we could not reject the null hypothesis, supposition of mean difference of two independent groups are rejected. In other words, there is a significant difference due to the function of extraversion between afflicted people and the healthy ones.

3- There is a positive and meaningful relation on openness to experience function between the healthy people and people afflicted by Multiple Sclerosis.

With attention to results of T-test, since the value of $T=3.027$ at the level of $\alpha=0.5$ is significant and positive, therefore we conclude that the mean score of both groups in the function of openness to experience by the character is quite significant. Therefore, the null hypothesis is rejected and the hypothesis of the research is confirmed. In another words, there is significant difference between patients and the healthy ones due to the function of openness to experience, and the rate of openness to experience within the healthy people was more than the patients.

There is a positive and significant relation on openness to agreeableness function between the healthy persons and people afflicted by Multiple Sclerosis.

Considering the results of T-test, since the value of $T=3.326$ at the level of $\alpha=0.5$ is significant and positive, therefore we conclude that the mean score of both groups in the function of agreeableness by the character is quite significant. Therefore, null hypothesis is rejected and the hypothesis of the research is confirmed. In the other words, significant between patients and the healthy ones due to the function of agreeableness, there is a difference and the rate of agreeableness within the healthy people are more than the afflicted persons.

4- There is a positive and significant relation on conscientiousness function between the healthy persons and people afflicted by Multiple Sclerosis.

Since the value of $T=-0.177$ at the level of $\alpha=0.5$ is not quite significant, therefore we conclude that the mean score of both groups due to the function of conscientiousness by the character is not significant. Therefore, since we could not reject the null hypothesis, supposition of mean difference of two independent groups are denied. In other words, there is a significant difference due to the function of conscientiousness between afflicted persons and the healthy ones.

5- There is a positive and significant relation on Life Expectancy function between the healthy people and patients.

Because the value of $T=-0.396$ at the level of $\alpha=0.5$ is not quite significant, therefore we conclude that the mean of both groups due to the function of Life Expectancy by the character is not significant. Therefore, since we could not reject the null hypothesis, supposition of mean difference of two independent groups is rejected. In the other words, there is a significant difference due to the function of Life Expectancy between afflicted persons and the healthy people.

Discussion

Regarding the present data, we discuss subject, first we consider the results of hypothesis. Then, the relation between gathered data and other researchers' finding will be considered thoroughly. Finally we discuss about confirmation and refunding hypothesis.

The first hypothesis: Between the afflicted people and the healthy ones due to the function of neuroticism, there is a significant distinction.

In the present research, results showed that the hypothesis at the level of %5 is meaningful; the mean scores of personality characteristics due to the function of neuroticism with, afflicted people are higher than the healthy ones. Therefore, we conclude that patients hold higher level of personal neuroticism characteristics compared with the healthy ones. Patients afflicted by Multiple Sclerosis, since they are tied up with non-curable disease, would obtain higher scores compared with the healthy ones, due to neuroticism function (2). Therefore, creation of neurotic expressions such as nervousness and quarrel is quite natural for them, and such patients would obtain higher scores compared with the healthy ones, due to neuroticism function. Different research procedures have showed that there is a negative relation between mental health and neuroticism function. In the other words, people who get higher scores due to neurotics are stated in a lower psycho health. Therefore, with due attention to the fact that afflicted people don't have in a favorable mental health, we conclude that neuroticism function is related to this disease (8).

Second hypothesis: between the afflicted people and the healthy ones due to the function of extraversion, there is a significant difference.

The abovementioned hypotheses are refuted and results showed that there is no significant difference between afflicted people and the healthy one due to extraversion function. Extraversion is applied to personal distinctions, socialization, activism, decisiveness and positive tensions (9) in the present research, afflicted people showed no significant difference, compared with healthy ones due to the extraversion function (12). These findings, although contradicted with Merkelbach et al (4). and, in accordance with Benedict et al findings (8).

In addition to values of selecting the group and sample size, we could utilize different tools and questionnaires on personal qualities in order to distinguish unparalleled studies in this respect. In spite of mentioned courses discussed earlier, exact and precise conclusions desires more researches in this manner.

The third hypothesis: difference between the afflicted people and the healthy ones due to the function of openness to experience was significant

The mentioned hypothesis is confirmed here, while there was a significant difference observed between

the mean of two groups due to the function of openness to experience. The function of openness to experience qualities determines the rates of flexibility against new experiments. As well in general view points, people holding high marks due to this function, would rather accept new and unusual beliefs and values while enjoying modern experiments in their lives. (10) In spite of the fact, findings of Benedict's research and the else are in contradiction with the present research data, meaning that these people have not observed any significant difference between two groups (8).

The fourth hypothesis: Difference between the afflicted people and the healthy ones due to the function of agreeableness, there is a significant.

The results of present research showed that there is a significant difference between the means of two groups, the afflicted and the healthy due to the function of agreeableness. This function is similar to the other one, under the title of mutual agreement in other cultures (11). It also refers to the tension of the person for seeking confidence, assistance and generosity (12) Findings achieved during this research are in accordance with Benedict's and the other, meaning that the researchers have not observed any significant differences in this area. But they observed that the afflicted people achieved lower scores compared with the healthy in order to qualify the function of mutual agreements (8). In spite of the facts, findings are in contradiction with Merkelbach et al data because these researchers have not found any significant difference between two groups due to the function of agreeableness (4). Whatsoever the case, the contradictions refer to instability and inconstancy of characteristics due to the function of agreeableness and also the measures of selection within the groups together with using demographic questionnaires and cultural difference

The fifth hypothesis: Difference between the afflicted people and the healthy ones due to the function of conscientiousness, there is a significant difference.

According to the mean scores of personality characteristics due to the function conscientiousness, we observe that afflicted people's scores in this function do not have any significant difference with the healthy ones. In this case, the results of present research with the one accomplished by Benedict et al. is in a great contradiction (8). They observed during a study with the aim of evaluating personality characteristics of afflicted people that these patients had achieved lower scores compared with the healthy ones due to the function of

conscientiousness. The low scores of the patients in the function of conscientiousness could be in relation with cognitive demotivation and dejection between them.

Anyhow, in the case of studying the five great functions of personality among afflicted people, there has only been: a few researches accomplished, while we should be aiming at greater and more accurate researches in this area to reach a total conclusion.

The sixth hypothesis: There is a significant difference between afflicted people and the healthy one in the subject of Life Expectancy.

According to the results of T-test, we conclude that: the mean score of two groups naming as afflicted and the healthy due to the function of hope of life is not quite meaningful in the other words there is not any significant difference between the afflicted people and the healthy ones, due to the Life Expectancy.

We could totally conclude that: people afflicted by Multiple Sclerosis achieve higher marks due to the function of neuroticism compared with the healthy

people. Due to the function of openness to experience, agreeableness is in a lower state compared with the healthy ones that emphasized the category that: Is it the type of personality characteristic which causes the disease and aggravate it? Or it is the type of disease which creates difference in some of personality functions compared with the healthy ones. That is the case which should be considered well during future researches.

Conclusion

The results suggest that greater focus needs utilizing four types of multiple sclerosis in the form of fore group of patients and also comparing five great functions of personality and the Life Expectancy in afflicted people immediately after the diagnosis and follow up the case six month after.

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