Original Article

IEEPJ Vol. 5, No. 3, 2023, 231-244

http://ieepj.hormozgan.ac.ir/

Iranian Evolutionary and Educational Psychology Journal

IEEPJ

Predicting the Mental Health of Multiple Sclerosis (MS) Patients based on Relationship Quality, Early Maladaptive Schemas, and Fear of Disease Progression

Soraya Khanlari Aziz[1], Mahnaz Shahgholian[2]*, Mohammad Hossein Abdollahi[2]

1- MA in General Psychology, Kharazmi University, Tehran, Iran.

2- Assistant Professor of Psychology, Kharazmi University, Tehran, Iran

* Corresponding author's Email: Shahgholianma@gmail.com

Abstract: The aim of this study was to forecast the mental well-being of individuals with multiple sclerosis (MS) by considering the quality of their family relationships, early maladaptive schemas, and their fear of disease progression. The research employed a descriptive-correlational design. The research subjects encompassed MS patients in the Kermanshah and Alborz provinces (Iran) during the year 2020. The sampling technique used was convenience sampling, leading to the selection of a total of 83 patients who actively participated in the research by completing questionnaires. The research tools utilized included the Mental Health Questionnaire (SCL-25), a shortened version of the Young Schema Questionnaire (YSQ – SF), the Quality of Relationships Questionnaire (QRI), and the brief form of the Fear of Disease Progression Questionnaire (FOP-Q-SF). Data analysis was carried out using SPSS version 24. The findings of the data analysis revealed a significant and positive association between all aspects of early maladaptive schemas and the mental well-being of MS patients. Conversely, none of the elements of the quality of relationships displayed a substantial connection with the mental health of MS patients. Furthermore, there was a significant and positive correlation between the fear of disease progression and the mental well-being of MS patients. Regression analysis results demonstrated that the variables of early maladaptive schemas and fear of disease progression collectively accounted for 52% and 35% variance of the mental health of MS patients, respectively. Given the unique attributes of MS, it is vital to focus on the mental well-being of these individuals. Exploring and examining other psychological variables can contribute to a deeper comprehension of the mental health of this particular group.

Keywords: Mental Health, Family Relationship Quality, Early Maladaptive Schemas, Fear of Disease Progression, Multiple Sclerosis (MS)

Introduction

Chronic diseases are a primary concern within contemporary health and medical communities. They encompass persistent conditions that significantly impede an individual's capacity for normal function (Anderson and Dorstein, 2019). Prominent chronic diseases, including heart disease, cancer, diabetes, severe obesity, and multiple sclerosis (MS), are leading causes of mortality and disability worldwide (Murray, 2017). In recent years, MS, a prevalent chronic disease of the central nervous system, has garnered considerable attention (Dawson and Giovannoni, 2019). MS involves the immune system's assault on myelin, a substance encompassing nerve fibers that serves as insulation, ultimately resulting in its degradation and nerve damage (Olek, 2021). Given the ambiguity surrounding the exact antigen or target of this assault, numerous experts prefer to categorize it not as an autoimmune disease but rather

Article information: Received: 2023/02/11 | Accepted: 2023/06/28 | Published: 2023/09/01. https://doi.org/10.52547/ieepj.5.3.231

[DOR: 20.1001.1.25884395.2023.5.3.18.9]

[DOI: 10.22034/5.3.231]

as an immune-mediated attack (Ohe, Vidal-Jordana, and Montalban, 2018). While initial symptoms of MS typically manifest between the ages of 20 and 40, the condition can also occur in children or individuals over 40, albeit with a lower prevalence in these age groups (Lassmann, 2018).

Although genetic factors do not appear to heavily influence the disease, individuals with a first-degree relative who has MS do face a slightly elevated risk. However, this risk remains minimal (Mallory et al., 2018). MS is characterized by its unpredictability, manifesting differently among individuals and giving rise to various complications. Common symptoms experienced by those with MS encompass fatigue, weakness, balance disturbances, dizziness, anxiety, depression, and psychological disorders (Hannah and Strober, 2020).

Given the elusive nature of definitive and comprehensive treatment for chronic diseases, efforts are focused on identifying factors that exacerbate disability in affected individuals. Prevention, timely treatment, and rehabilitation aim to enhance the quality of life for those impacted by these conditions (Kuhlman et al., 2017). Mental health assessment represents one such factor that can prove advantageous for these patients, constituting an integral aspect of improving their quality of life (Fidaei et al., 2021).

According to the World Health Organization's definition, mental health encompasses the ability to establish harmonious and coordinated relationships with others, adapt personal and social environments, and resolve conflicts and desires logically, fairly, and appropriately (Sedighian et al., 2020; WHO, 2016). Mental health entails recognizing one's capabilities, effectively coping with stressors, and making meaningful contributions to the community (Mam Sharifi et al., 2021; Oscher et al., 2020). Various variables may influence the mental health of individuals with MS, and this study will specifically investigate the quality of relationships, early maladaptive patterns, and fear of disease progression. One of the variables related to mental health in individuals with MS is the quality of their relationships and communication skills with family and friends (Bozorgpoury, 2017). Relationships involve the need to establish emotional bonds and attachments with others, indicating a desire for emotional connection and involvement in intimate relationships (Keller and Dubois, 2021). The quality of relationships and communication skills refers to a set of skills that allow individuals to engage in interpersonal interactions, a process in which people exchange information, thoughts, and feelings through verbal and non-verbal communication (Ball et al., 2018). The quality of relationships is crucial as it can have a significant impact on both physical and psychological health (Moen et al., 2021). It has been observed that, even if social support exists, the quality of relationships received by an individual may not be satisfactory, negatively affecting mental health as a result (Hombados-Mendieta et al., 2013).

Another factor associated with the mental well-being of individuals, particularly those diagnosed with multiple sclerosis (MS), pertains to early maladaptive patterns (Tehranchi et al., 2016). According to

[DOR: 20.1001.1.25884395.2023.5.3.18.9]
[DOI: 10.22034/5.3.231]

Beck's perspective, these patterns give rise to individuals' mindsets, encompassing memories, problem-solving strategies, mental imagery, and verbal constructs, thereby constituting a coherent system of cognitive, emotional, and behavioral components (Beck and Emery, 1985). Young's theory of early maladaptive patterns stands as a notable theory in this realm. Generally, early maladaptive patterns refer to self-destructive emotional and cognitive patterns that emerge in the early stages of growth and development, persisting and consolidating throughout one's lifetime, often with inappropriate functionality (Sandegh et al., 2018). These patterns manifest early in life and exert influence on the individual throughout their lifespan (Young, 2005). Early maladaptive patterns represent individuals' beliefs about themselves, others, and the environment, typically originating from unfulfilled primary needs, especially emotional needs during childhood (Zhang and He, 2013). These patterns endure over the course of one's life, serving as the cognitive underpinnings for individuals and aiding in the organization of experiences and processing of acquired information (Pilkington et al., 2021). Yang (2005) posits that negative childhood experiences contribute to the creation of early maladaptive patterns in certain individuals, impacting their cognition, emotions, and behavior in subsequent intimate relationships and other facets of their lives. Research findings consistently indicate a significant correlation between early maladaptive patterns and the triad of somatization symptoms, anxiety, and depression. The significance of these patterns in the development of mental health disorders has consistently been underscored in relation to early maladaptive patterns and symptoms of cognitive impairment (Nicole et al., 2020).

Another aspect pertinent to the mental well-being of individuals, particularly those afflicted with MS, concerns the apprehension surrounding disease progression (Chen et al., 2020). Studies have demonstrated the prevalence of this fear in chronic conditions such as MS (Nielsen et al., 2018). Living with relapsing diseases like cancer and MS often engenders anxieties about the future for numerous patients. Patients are compelled to grapple with the intricacies and relapses associated with the disease, heightened limitations in functionality, disease progression, and a diminished sense of hope for life (Manafi and Dehshiri, 2017). The fear of disease progression encompasses a broad spectrum of genuine fears related to the disease, and it is considered a normal and appropriate response to the experience of a chronic, debilitating, or potentially life-threatening condition (Kasters et al., 2018). Dankert et al. (2003) revealed in their study that the content pertaining to the fear of progression in all chronic diseases investigated was entirely comparable. Subtle distinctions emerge with regard to the predominant fear within each disease group, implying that the fear of progression varies somewhat across different diseases.

[DOR: 20.1001.1.25884395.2023.5.3.18.9]
[DOI: 10.22034/5.3.231]

Manafi and Dehshiri (2017) found in their research that the fear of progression has a positive and meaningful relationship with anxiety, stress, and depression. They also expressed that paying attention to the fear of progression in the management and planning of health care for chronic diseases, including MS and cancer, is essential.

All the mentioned factors play a role in the mental health of individuals, especially those with specific and chronic diseases. Given the special importance of mental health in MS patients and its impact on their hope for life and quality of life, this research aims to investigate predictive factors of the mental health of individuals with MS. Therefore, researchers are striving to answer the question of whether variables such as the quality of relationships, early maladaptive patterns, and the fear of disease progression can predict the mental health of individuals with MS.

Material and Methods

The present research had a descriptive-correlational design. In this type of study, after collecting the data, the correlation method was used to examine the relationship between the research variables. The statistical population of the study included multiple sclerosis (MS) patients in Kermanshah and Alborz provinces in the year 2019. The sampling method was available sampling, and a total of 83 MS patients were selected for the study and completed the questionnaires. After coordinating with MS centers in Kermanshah and Alborz provinces and negotiating with their managers to obtain the necessary approvals for collaboration in this research, the questionnaires were distributed among MS patients. The participants provided their responses, and the completed questionnaires were collected.

To ensure ethical considerations, all individual information of the participants was kept confidential. Participants had the option to withdraw from the research or choose not to participate at any point during the study. To avoid potential fatigue among participants due to lengthy questionnaires, an appropriate environment was provided for them to respond.

The inclusion criteria were: 1. Having MS, 2. Participants' satisfaction and consent to participate in the research. The exclusion criteria included: 1. Not having MS, 2. Simultaneous suffering from psychological disorders, 3. Unwillingness to continue participating in the research.

Data analysis was performed using descriptive statistical methods, and for the correlation analysis between variables, the Pearson correlation method was applied. To predict each criterion variable based on predictor variables, simultaneous regression was used. The results of the research were analyzed using SPSS software version 24.

[DOR: 20.1001.1.25884395.2023.5.3.18.9]
[DOI: 10.22034/5.3.231]

[DOR: 20.1001.1.25884395.2023.5.3.18.9]

[DOI: 10.22034/5.3.231]

Instruments

Psychological Health Questionnaire (SCL-25): The Mental Disorders Checklist is a common self-report tool for measuring psychopathology. This tool is specifically designed to measure those physical and mental discomforts experienced by recent respondents. Considering the various reports based on the one-dimensional nature of SCL-90-R and recommending its use as a test to measure general psychological damage, instead of a multidimensional scale to measure several syndromes or disorders, building a short test for measuring general pathology using SCL-90-R seems to be (Najarian and Davoudi, 2018). Validity: the internal consistency of this test is 0.97 in girls and 0.98 in boys, and in the retest method with a time interval of 5 weeks, the total sample is 0.78, in the sample of girls, it is 0.77, and in the sample of boys, it is 0.79. came (Najarian and Davoudi, 2010). Validity: The range of correlation coefficients between SCL-90-R and SCL-25 is from 0.80 to 0.95. The amount of variance explained by this test is equal to 45.393 percent of the entire SCL-90-R test, which means that after the factor analysis of the SCL-90-R test, the first factor alone explained 45.393 percent of it. The correlation between SCL-90-R and SCL-25 is equal to 0.95 and the correlation of all factors of SCL-90-R and SCL-25 are significant; Therefore, it can be said that this test is a valid and valid test for measuring general psychological damage. Internal homogeneity was obtained by Cronbach's alpha method in the present study at 0.93.

Young Schema Questionnaire – Short Form (YSQ – SF): This questionnaire was created by Yang in 1998 and contains 75 statements and 5 schema areas. This questionnaire includes questions from 1 to 25; self-management and impaired performance with questions 26 to 45; the directionality with questions 46 to 55; listen for excessive ringing and inhibition with questions 56 to 65; It assesses impaired limitations with questions 66 to 75 on a 6-point Likert scale from completely true about me 6 to completely false about me 1 (Ames, Rose, & Anderson, 2001). Waller, Mir and Hanian (2001) reported Cronbach's alpha coefficient of 0.96 for this instrument and showed that this questionnaire has good discriminant validity. This questionnaire was translated and implemented in Iran by Ahi, Mohammadifar and Bashart (2006) and its internal consistency according to Cronbach's alpha was reported as 0.97 in the female group and 0.98 in the male group. Internal homogeneity was obtained by Cronbach's alpha method in the present study at 0.96.

Quality of Relationships Inventory (QRI): This questionnaire was created in 1991 by Pierce et al to assess the quality of relationships with important people in life. This questionnaire has 25 questions and is graded on a Likert scale from 1 to 4. This questionnaire has three subscales that measure perceived social support (7 items), interpersonal conflicts (12 items) and depth of relationships (9 items). Also, in each item, a person can evaluate the quality of relationships with his parents, friends and spouse.

Cronbach's alpha coefficient was reported as 0.83, 0.88, and 0.86 for the subscales of social support, depth of relationships, and interpersonal conflicts (Pierce et al., 1991). The test-retest reliability was 0.83 for the whole questionnaire and 0.70 for the subscale (Hosseini Kadamgahi, 2016). In the present study, Cronbach's alpha coefficient was obtained for the subscales of social support, depth of relationships and interpersonal conflicts, respectively, 0.89, 0.93 and 0.84.

Fear of Progression Questionnaire – Short Form (FOP-Q-SF): The short form of the Fear of Progress Questionnaire developed by Wakenbas et al. (2012) is a self-report questionnaire that includes 12 items. Responding to it includes a 5-point Likert scale from never to most of the time. The total score is calculated by summing the scores of the subscales except for the coping subscale. The minimum score is 12 and the maximum score is 60 in this questionnaire, and a score higher than 34 indicates the fear of disease progression. There is no Farsi version of this questionnaire in Iran, and the authors of this study, in consultation with experts in this field, translated the said questionnaire for use in this study. The internal consistency of this questionnaire was obtained using Cronbach's alpha of 0.90.

Results

In this study, 14.45% of the participants were between 19 and 29 years old, 39.75% between 30 and 39 years old, and 45.78% were over 40 years old. 26 participants (31.32%) were male and 47 participants (68.68%) were female. 35 people (42.2 percent) were single, 45 people (54.2 percent) were married, and 3 people (3.6 percent) were others.

Descriptive indices of research variables including mean, standard deviation, skewness and kurtosis are reported (Table 1). In this section, following the answer to the main question of the research, "Can the variables of relationship quality, initial maladaptive schemas and fear of disease progression predict the mental health of people with MS?" Pearson's correlation coefficient and simultaneous regression were used. To check the normality of the variables, a general criterion is that if the skewness is in the range (2, -2), the data has a normal distribution (Habibpour Getabi and Safar Shali, 2015).

[DOR: 20.1001.1.25884395.2023.5.3.18.9]

[DOI: 10.22034/5.3.231]

Table 1. Correlation matrix, mean and standard deviation of research variables

Variable	مولفه‌ها	Correlation with mental health	Mean	SD	**Skewness**
Mental health	Mental health	1	32.85	20.83	0.53
Early maladaptive schemas	Emotional deprivation	0.35**	14.16	7.55	0.46
	Abandonment/instability	0.42**	15.37	7.72	0.43
	Mistrust/misbehavior	0.32**	11.75	5.68	0.96
	Social isolation/alienation	0.48**	11.09	7.08	1.28
	Defect/shame	0.49**	9.74	6.49	1.56
	Break	0.47**	12.77	7.02	0.81
	dependence/incompetence	0.61**	11.45	6.55	1.08
	Vulnerability to harm and disease	0.61**	12.74	7.31	0.73
	Taking the untransformed self	0.62**	11.49	6.15	0.81
	obedience	0.46**	13.55	6.03	0.96
	Sacrifice	0.28**	18.45	6.41	0.12
	Emotional inhibition	0.37**	12.19	6.34	0.83
	Stubborn standards	0.37**	17.74	6.21	-0.15
	Entitlement/ Secretary's honor	0.27**	15.81	5.90	0.18
	Insufficient self-control/self-discipline	0.33**	15.20	6.23	0.38
Relationship quality	Social support of parents	-0.04	21.21	6.09	-0.70
	Spouse's social support	0.06	22.49	6.68	-1.46
	Social support of friends	0.01	15.87	5.56	0.14
	Interpersonal conflict between parents	-0.17	32.07	8.89	-0.26
	Interpersonal conflict between spouses	-0.04	27.83	8.67	-0.12
	Conflict between friends	-0.04	39.60	7.28	-0.71
	The depth of the parental relationship	-0.17	19.76	4.02	-0.93
	The depth of the spouse's relationship	-0.13	20.31	4.58	-1.45
	The depth of the relationship between friends	-0.07	13.69	4.81	0.34
Fear of disease progression	Fear of disease progression	0.59**	35.21	4.52	0.19

** < 0.01

As stated in Table 1, there was a significant positive relationship between all the components of the primary maladaptive schemas with mental health in MS patients (it should be noted that the interpretation of mental health scores is such that the higher the scores of people are) , these people have less mental health), so here the direct positive relationship means that patients who have less mental health (have obtained a higher score), have higher scores in the primary maladaptive schemas. Also, none of the relationship quality components had a significant relationship with the mental health of MS patients, and on the other hand, the fear of disease progression had a significant positive relationship with the mental health of MS patients, that is, patients with lower mental health (higher score have done), have higher scores in the fear of disease progression.

In Table 2, the results of multiple regression related to predicting the mental health of multiple sclerosis (MS) patients based on initial maladaptive schemas and fear of disease progression are presented. Since the quality of relationships variable had no statistically significant relationship with mental health, it is not included in the regression equation. In Table 4, only the significant results of the regression equation are listed.

[DOR: 20.1001.1.25884395.2023.5.3.18.9]
[DOI: 10.22034/5.3.231]

Table 2. Multiple regression results

Model	B		Beta	T value	P	R	R^2
	Value	SE	Value				
Constant	-6.52	7.22	-	-0.90	0.37	0.76	0.58
Dependence/incompetence	1.37	0.58	0.43	2.33	0.02		
Fear of disease progression	0.64	0.20	0.38	3.11	0.003		

As can be seen in Table 2, the early maladaptive schemas of dependence/incompetence and the variable of fear of disease progression were able to predict 58% of the variance of the criterion variable, i.e., mental health.

Discussion

The findings demonstrated that early maladaptive schema variables and the fear of disease progression variable possessed the ability to forecast 58% of the criterion variable, which is the psychological health of patients with multiple sclerosis (MS). However, the variable concerning the quality of relationships lacked the capability to predict psychological health in MS patients. A significant positive correlation was identified between all components of early maladaptive schemas and psychological health in MS patients. This implies that patients with lower psychological health (higher scores) exhibit higher scores in early maladaptive schemas, aligning with previous research findings (Nicole et al., 2020; Yazdani & Mirzaei, 2018; Tehranchi et al., 2016; Faridouni et al., 2016).

Yazdani and Mirzaei (2018) demonstrated that early maladaptive schemas and emotional regulation problems served as the most robust predictors of psychological health. Similarly, Tehranchi et al. (2016) discovered that a noteworthy relationship was observed between early maladaptive schemas and psychological health, with anxiety playing a mediating role across most schema domains. This relationship proved significant in the psychological well-being index, with components of psychological health interacting with four vulnerability schemas concerning harm and illness, dependence, insufficiency in self-control/self-discipline, and defect/shame.

Furthermore, the four vulnerability schemas associated with harm and illness, dependence, distrust/mistreatment, and insufficiency in self-control/self-discipline exhibited a significant correlation with psychological maladjustment. Additionally, the variable of concern exerted a significant impact on most schema components, such as schemas of vulnerability to harm and illness, compliance, distrust/mistreatment, and emotional inhibition. The utilization of early maladaptive schemas that are formed during early developmental stages, typically situated in the cognitive structure axis, tends to be without conditions. In contrast, schemas that develop later on are conditional, emerging in response to

[DOR: 20.1001.1.25884395.2023.5.3.18.9]
[DOI: 10.22034/5.3.231]

nonconditional schemas. Conditional schemas arise as a reaction to nonconditional schemas. For instance, rigid standards schemas develop in response to defect schemas, compliance schemas arise in response to abandonment schemas, and sacrifice schemas form in response to defect schemas.

Meeting the expectations of conditional schemas is not always feasible, and sooner or later, individuals are confronted with their primary schemas. Individuals experiencing emotional disturbances and weakened psychological health often manifest their disturbances in various manners. These individuals frequently encounter difficulties such as diminished self-esteem, academic underachievement, social exclusion, and challenges in social interactions, all of which directly impact their learning process. The appropriate utilization of early maladaptive schemas can result in an enhancement of psychological health and the individual's adaptation to forthcoming realities, thus preparing the mind to confront these realities and leading to a greater sense of psychological well-being.

On the contrary, none of the components related to the quality of relationships exhibited a significant correlation with the psychological health of MS patients. This finding contradicts previous studies (Bozorgpoori, 2017; Nolan et al., 2015; Nabavi et al., 2015). The absence of a significant relationship between these two variables in the present study can be attributed to the specific sample of MS patients. Moreover, the study population encompassed both married and unmarried individuals. Certain unanswered questions pertaining to the questionnaire of this variable posed challenges in investigating the relationship between relationship quality and psychological health in MS patients.

Finally, there exists a significant positive correlation between the apprehension of disease progression and the psychological well-being of individuals with multiple sclerosis (MS). This finding aligns with previous investigations conducted by Chen et al. (2020), Manafi and Dehshiri (2017), Kwakkenbos et al. (2012), and Berg et al. (2011). Notably, Manafi and Dehshiri (2017) utilized convenience sampling to carry out a study entitled "Fear of Disease Progression in Patients with Cancer and Multiple Sclerosis and its Relationship with Emotional Problems" on a cohort of 212 patients diagnosed with both MS and cancer. The outcomes of this study indicated a positive association between the fear of disease progression and emotional difficulties. Specifically, patients with heightened concerns regarding disease progression were more susceptible to experiencing emotional challenges and psychological disturbances.

Kwakkenbos et al. (2012) asserted that individuals affected by MS reported various factors contributing to their condition, encompassing uncertainties pertaining to their future, fear of disease progression, apprehension of dependence on others, and physical disability. In endeavoring to elucidate this finding, it is prudent to acknowledge the constructive impact of the fear of disease progression on emotional difficulties. As a result, individuals exhibiting a heightened fear of progression are more prone to

[DOR: 20.1001.1.25884395.2023.5.3.18.9]
[DOI: 10.22034/5.3.231]

grappling with emotional tribulations. It is plausible to surmise that concerns surrounding the progression of the disease, which permeates numerous aspects of an individual's life such as interpersonal relationships, employment, and personal functioning, can incite stress. Prolonged exposure to stress engenders anxiety and depression, ultimately precipitating a decline in psychological well-being.

Within the familial realm, anxiety arises from the potential strain on spousal relationships due to illness, even to the extent that separation becomes a plausible outcome. In the sphere of interpersonal relationships, individuals harbor concerns regarding external opinions, perceptions, the possibility of being pitied, and the burden they may impose on others. In the professional domain, the fear of job loss and uncertainties surrounding future financial circumstances, including the ability to meet expenses and medical costs, foster apprehension. In terms of autonomy, individuals express concerns regarding their capacity to independently carry out personal tasks. Moreover, within the emotional response domain, individuals are psychologically affected by the various medications and treatments they undergo, which may manifest as heart palpitations, body tremors, and respiratory difficulties. These manifestations collectively signify symptoms of stress, anxiety, and depression, ultimately contributing to a deterioration of psychological well-being among MS patients.

The limitations of this study encompass the inherent constraints associated with the research design, specifically in establishing causal relationships. Furthermore, due caution must be exercised when generalizing the results of this study to other population groups, as it exclusively focused on individuals diagnosed with MS. It is advisable to integrate the findings of this research into programs implemented by diverse centers catering to MS patients, aiming to enhance their psychological well-being. By doing so, a more comprehensive understanding of the psychological traits exhibited by individuals grappling with this disease can be achieved, benefiting both MS patients and the wider public.

Conflict of interest: The authors have no conflicts of interest relevant to the content of this article.

Financial sources: This research has received no financial support from any organization.

Acknowledgment: The authors would like to express their gratitude to all the participants and esteemed education officials who helped them in the research process.

[DOR: 20.1001.1.25884395.2023.5.3.18.9]

[DOI: 10.22034/5.3.231]

References

Baecher-Allan, C., Kaskow, B. J., & Weiner, H. L. (2018). Multiple sclerosis: mechanisms and immunotherapy. *Neuron*, *97*(4), 742-768. https://doi.org/10.1016/j.neuron.2018.01.021

Ball, L. E., Barnes, K. A., Crossland, L., Nicholson, C., & Jackson, C. (2018). Questionnaires that measure the quality of relationships between patients and primary care providers: a systematic review. *BMC health services research*, *18*(1), 1- 12. https://doi.org/10.1186/s12913-018-3687-4

Bazarpuri, M. (2016). Examining the relationship between social support and the quality of relationships with the mental health of Azad Islamic students in Marvdasht. Journal of New Advances in Behavioral Sciences, 2(11). 77-70. http://ijndibs.com/article-1-100-fa.html

Beck, A. T, & Emery, G. (1985). *Anxiety disorders and phobias: A cognitive perspective*. New York: Basic Books.

Berg, P., Book, K., Dinkel, A., Henrich, G., Marten-Mittag, B., Mertens, D., ... & Herschbach, P. (2011). Fear of Progression in Chronic Diseases. Psychotherapie, Psychosomatik, *Medizinische Psychologie*, 61(1), 32-37. https://doi.org/10.1055/s- 0030-1267927

Chen, G., Wu, Q., Jiang, H., Zhang, H., Peng, J., Hu, J., Chen, M., Zhong, Y., & Xie, C. (2020). Fear of disease progression and psychological stress in cancer patients under the outbreak of COVID-19. *Psycho-oncology*, *29*(9), 1395–1398. https://doi.org/10.1002/pon.5451

Custers, J. A. E., De Laat, P., Koene, S., Smeitink, J., Janssen, M. C. H., & Verhaak, C. (2018). Fear of disease progression in carriers of the m.3243A > G mutation. *Orphanet Journal of Rare Diseases*, 13, 203. https://doi.org/10.1186/s13023- 018-0951-y

Dankert, A., Duran, G., Engst-Hastreiter, U., Keller, M., Waadt, S., Henrich, G., & Herschbach, P. (2003). Progredienzangst bei Patienten mit Tumorerkrankungen, Diabetes mellitus und entzündlich-rheumatischen Erkrankungen. *Die Rehabilitation*, *42*(03), 155-163. https://doi.org/10.1055/S-2003-40094

Dobson, R., & Giovannoni, G. (2019). Multiple sclerosis–a review. *European journal of neurology*, *26*(1), 27-40. https://doi.org/10.1111/ene.13819

Fidao, A., De Livera, A., Nag, N., Neate, S., Jelinek, G. A., & Simpson-Yap, S. (2021). Depression mediates the relationship between fatigue and mental health-related quality of life in multiple sclerosis. *Multiple Sclerosis and Related Disorders*, *47*, 102620. https://doi.org/10.1016/j.msard.2020.102620

Habib-Pourgtabi, K. and Safari Shali, R. (2015). A comprehensive guide to using Spss in survey research (quantitative data analysis). Publishing innovators.

[DOR: 20.1001.1.25884395.2023.5.3.18.9]

[DOI: 10.22034/5.3.231]

Hanna, M., & Strober, L. B. (2020). Anxiety and depression in multiple sclerosis (MS): antecedents, consequences, and differential impact on well-being and quality of life. *Multiple Sclerosis and Related Disorders*, *44*, 102261. https://doi.org/10.1016/j.msard.2020.102261

Hombados-Mendieta, I., Garcia-Martin, M. A,. & Gomez-Jacinto, L. (2013). The relationship between social support, loneliness and subjective well-being in Spanish sample from a multidimentional perspective. *Social indicators research*, 114(3), 1013-1034. https://doi.org/10.1007/S11205-012-0187-5

Keller, T. E., & DuBois, D. L. (2021). Influence of program staff on quality of relationships in a community-based youth mentoring program. *Annals of the New York Academy of Sciences*, *1483*(1), 112-126. https://doi.org/10.1111/nyas.14289

Koelmel, E., Hughes, A. J., Alschuler, K. N., & Ehde, D. M. (2017). Resilience mediates the longitudinal relationships between social support and mental health outcomes in multiple sclerosis. *Archives of physical medicine and rehabilitation*, *98*(6), 1139-1148. https://doi.org/10.1016/j.apmr.2016.09.127

Kwakkenbos, L., van Lankveld, W. G., Vonk, M. C., Becker, E. S., van den Hoogen, F. H., & van den Ende, C. H. (2012). Disease-related and psychosocial factors associated with depressive symptoms in patients with systemic sclerosis, including fear of progression and appearance selfesteem. *Journal of Psychosomatic Research*, 72(3), 199-204. https://doi.org/10.1016/j.jpsychores.2011.12.005

Lassmann H. (2018). Multiple Sclerosis Pathology. *Cold Spring Harbor perspectives in medicine*, *8*(3), a028936. https://doi.org/10.1101/cshperspect.a028936

Malivoire, B. L., Hare, C. J., & Hart, T. L. (2018). Psychological symptoms and perceived cognitive impairment in multiple sclerosis: The role of rumination. *Rehabilitation psychology*, *63*(2), 286. https://psycnet.apa.org/doi/10.1037/rep0000180

Mam Sharifi, P.; Sohrabi, F; Rezai Far, H.; Rozbahani, H.; Asadi, N; Shabanian I Khansari, S and Roshan Qiyas, Z (1400). The role of social support and personality traits in predicting the mental health of members of the Red Crescent Society of Iran. Research in psychological health, 14 (3), 53-66. http://dx.doi.org/10.52547/rph.14.3.53

Manafi, S. F. and Deshiri, G. R. (2016). Fear of disease progression in patients with cancer and multiple sclerosis and its relationship with emotional problems. Health Psychology, 2(22), 131-115. https://hpj.journals.pnu.ac.ir/article_4041.html

Marrie, R. A. (2017). Comorbidity in multiple sclerosis: implications for patient care. *Nature Reviews Neurology*, *13*(6), 375-382. https://doi.org/10.1038/nrneurol.2017.33

[DOR: 20.1001.1.25884395.2023.5.3.18.9]

[DOI: 10.22034/5.3.231]

Moen, Ø. L., Skundberg-Kletthagen, H., Lundquist, L. O., Gonzalez, M. T., & Schröder, A. (2021). The relationships between health professionals' perceived quality of care, family involvement and sense of coherence in community mental health services. *Issues in Mental Health Nursing*, *42*(6), 581-590. https://doi.org/10.1080/01612840.2020.1820119

Nicol, A., Mak, A. S., Murray, K., Walker, I., & Buckmaster, D. (2020). The relationships between early maladaptive schemas and youth mental health: a systematic review. *Cognitive Therapy and Research*, *44*(4), 715-751. https://psycnet.apa.org/doi/10.1007/s10608-020-10092-6

Nielsen, J., Saliger, J., Montag, C., Markett, S., Nöhring, C., & Karbe, H. (2018). Facing the Unknown: Fear of Progression Could Be a Relevant Psychological Risk Factor for Depressive Mood States among Patients with Multiple Sclerosis. *Psychotherapy and psychosomatics*, *87*(3), 190–192. https://doi.org/10.1159/000487329

Oh, J., Vidal-Jordana, A., & Montalban, X. (2018). Multiple sclerosis: clinical aspects. *Current opinion in neurology*, *31*(6), 752-759. https://doi.org/10.1097/wco.0000000000000622

Olek M. J. (2021). Multiple Sclerosis. *Annals of internal medicine*, *174*(6), ITC81–ITC96. https://doi.org/10.7326/AITC202106150

Pilkington, P. D., Bishop, A., & Younan, R. (2021). Adverse childhood experiences and early maladaptive schemas in adulthood: A systematic review and meta-analysis. *Clinical Psychology & Psychotherapy*, *28*(3), 569-584. https://doi.org/10.1002/cpp.2533

Sediqian, S. F.; Hakim Javadi, M.; Rezaei, S. and Mozaal, A. (2019). The effect of aerobic exercise program on mental health and body image concern of women with obesity stigma. Scientific-Research Quarterly of Health Psychology, 9(34), 137-154. https://dx.doi.org/10.30473/hpj.2020.50959.4684

Simard, S., Thewes, B., Humphris, G., Dixon, M., Hayden, C., Mireskandari, S., & Ozakinci, G. (2013). Fear of cancer recurrence in adult cancer survivors: a systematic review of quantitative studies. *Journal of Cancer Survivorship*, *7*(3), 300-322. https://doi.org/10.1007/s11764-013-0272-z

Sundag, J., Zens, C., Ascone, L., Thome, S., & Lincoln, T. M. (2018). Are Schemas Passed on? A Study on the Association Between Early Maladaptive Schemas in Parents and Their Offspring and the Putative Translating Mechanisms. Behavioural and Cognitive Psychotherapy, 46(6), 738-753. https://doi.org/10.1017/s1352465818000073

Tehranchi, K; Ahadi, H; Al-Taha, M. and Kraskian Mo Jambari, A. (2015). Prediction of mental health based on maladaptive schemas regarding the mediating role of worry in patients with severe visual impairments. Bina Journal of Ophthalmology, 22 (1), 47-55. http://binajournal.org/article-1-848-fa.html

[DOR: 20.1001.1.25884395.2023.5.3.18.9]

[DOI: 10.22034/5.3.231]

Thewes, B., Bell, M. L., Butow, P., Beith, J., Boyle, F., Friedlander, M., & McLachlan, S. A. (2013). Psychological morbidity and stress but not social factors influence level of fear of cancer recurrence in young women with early breast cancer: results of a cross-sectional study. *Psycho-Oncology*, *22*(12), 2797-2806. https://doi.org/10.1002/pon.3348

Usher, K., Durkin, J., & Bhullar, N. (2020). The COVID-19 pandemic and mental health impacts. *International Journal of Mental Health Nursing*, *29*(3), 315. https://doi.org/10.1111/inm.12726

Word Health Organization. (2016). Retrieved from Internet: http://www.who.int/gho/ publications/ world_health_statistics/ 2016/en. Accessed January 2, 2017.

Yazdani, M. and Mirzaei, S. H. (2017). The relationship between maladaptive schemas and emotion regulation problems with the mental health of soldiers with a history of desertion in North Khorasan police command. North Khorasan Police Science Quarterly, 5(19), 103-130. http://journals.police.ir/article_20443.htmlAnderson, E., & Durstine, J. L. (2019). Physical activity, exercise, and chronic diseases: A brief review. *Sports Medicine and Health Science*, *1*(1), 3-10. https://doi.org/10.1016/j.smhs.2019.08.006

Young, J. E. (2005). *"Young Schema Questionnaire–Short Form,"* New York, Schema Therapy Institute.

Young, J. E., & Long, L. (1998). *Counselling and therapy for couples*. New York: Guilford Press.

Young. J. E. (2003). *Schema therapy*. New York: Guilford.

Young. J. E. Klosko, G. & Weishaar. M. (2003). *Schema Therapy*. NewYork: Guilford press.

Zhang, D. H. & He, H. L. (2013), "Personality traits and life satisfaction: A Chinese Case study," *Social Behavior and Personality*, 38(8), 1119-1122. https://doi.org/10.2224/sbp.2010.38.8.1119

[DOR: 20.1001.1.25884395.2023.5.3.18.9]

[DOI: 10.22034/5.3.231]