EFFECTIVENESS OF CLIENT-CENTERED INTERVENTION ON PERCIEVED OCCUPATIONAL PERFORMANCE AND SATISFACTION IN PEOPLE WITH MULTIPLE SCLEROSIS

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ABSTRACT

Background: People with Multiple Sclerosis (MS) experience problems in the level of perceived occupational performance and satisfaction in activities of daily living due to the negative effects of factors such as physical, cognitive, social and environmental.
Aim: This study was planned to examine the effectiveness of the client-centered training for people with MS on perceived occupational performance and satisfaction.
Method: Fourteen MS individuals, 10 females and 4 males participated to the study. According to Canadian Occupational Performance Measure (COPM), a training program designed according to the occupations that indicated by participants. A training program consists of 24 sessions of 45 minutes, 4 days a week for 6 weeks.
Results: The mean COPM performance of people with MS before the training was median 3.60, COPM satisfaction was median 3.22. After the training, COPM performance was median 7.35, and COPM satisfaction was median 8.00. Before and after training COPM performance and COPM satisfaction statistically increased ($p<0.01$). When the distributions of occupations examined, it is determined that self-care 55.17%, productivity 24.13% and leisure 20.68%.
Conclusions: Client-centered training for people with MS had positive effects on perceived occupational performance and satisfaction. It is thought that client-centered training can be used effectively to increase the occupational performance and satisfaction determined by people with MS.

Keywords: Activities of daily living, multiple sclerosis, occupational performance, rehabilitation

KİŞİ MERKEZLİ EĞİTİMİN MULTİPL SKLEROZ'LU BİREYLERDE ALGILANAN AKTİVİTE PERFORMANS VE MEMNUNİYET ÜZERİNE ETKİSİ

ÖZ

Giriş: Multipl Skleroz'lu (MS) bireyler, fiziksel, bilişsel, sosyal, çevresel gibi faktörlerin olumsuz etkilenmesi nedeniyle günlük yaşam aktivitelerinde algılanan aktivite performans ve memnuniyet düzeyinde problem yaşamaktadır.
Amaç: Bu çalışma, MS'li bireylere yönelik kişi merkezli eğitimin algılanan aktivite performans ve memnuniyet üzerine etkisinin incelenmesi amacıyla planlandı.
Gereç ve Yöntem: Çalışmaya 10'u kadın 4'ü erkek olmak üzere 14 MS'li birey katıldı. Eğitim öncesi ve sonrası algılanan aktivite performans ve memnuniyet düzeyi Kanada Aktivite Performans Ölçümü (KAPÖ) ile değerlendirildi. KAPÖ'de belirtilen aktivitelere göre eğitim programı çizildi. Program, 6 Hafta, haftada 4 gün 45 dakika olacak şekilde 24 seanstan oluşmaktadır.
Bulgular: Çalışmaya katılan MS'li bireylerin eğitim öncesi KAPÖ performans ortancası 3,60, KAPÖ memnuniyet ortancası 3,22 puandır. Eğitim sonrası KAPÖ performans ortancası 7,35, KAPÖ memnuniyet ortancası 8,00 olmuştur. Eğitim öncesi ve sonrası KAPÖ performans ve memnuniyet skorlarında istatistiksel olarak anlamlı artış saptanmıştır ($p<0,01$). Aktivite dağılımları incelendiğinde; kendine bakımın %55,17'sini, üretkenliğin %24,13'ünü ve serbest zamanın %20,68'ini oluşturduğu belirlenmiştir.
Sonuç: MS'li bireylere yönelik kişi merkezli eğitimin bireylerin algılanan aktivite performansı ve memnuniyeti üzerinde olumlu etkileri olmuştur. MS'li bireylerin aktivite performanslarını ve memnuniyetlerini arttırmakta kişi merkezli eğitimlerin etkin bir şekilde kullanılabileceği düşünülmüştür.

Anahtar sözcükler: Multipl skleroz, rehabilitasyon, ergoterapi, günlük yaşam aktiviteleri

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INTRODUCTION

The autoimmune disease multiple sclerosis (MS) is the leading cause of non-traumatic neurological disability. MS is characterized by two pathological hallmarks: 1) inflammation with demyelination, and 2) astroglial proliferation (gliosis) and neurodegeneration. Tissue damage in MS is restricted to the central nervous system (CNS), sparing the peripheral nervous system (1). This disease, which often appears in young adulthood, causes various physical, cognitive and emotional problems in MS (1,2). These problems negatively affect the activities of daily living (ADL) in MS (3). ADL problems cause various occupational performance and satisfaction problems in the areas of self-care, productivity and leisure time in people with MS (3,4).

Occupational therapy science develops assessment and training approaches that aim to prevent the problems experienced by individuals in ADL with a holistic view (5). Dynamic balance and process in ADL are expressed as occupational performance (OP) (5). They are influenced by many factors belonging to the person, environment, belief, culture and occupations (6). Therefore, occupational therapy assessment and training approaches to improve OP based on the client-centered method (7).

Client-centered trainings enable individuals to better understand the problems they experience and to reach the solution of the occupations they have problems more effectively (7). Occupational therapy practices and philosophy actively incorporate a client-centered approach, and therapists take this approach into account when planning their training (6). It is important to consider the client-centered approach while planning the trainings, since the involvement of the central nervous system and the disability status of individuals differ from person to person in people with MS. On the other hand, researchers state that people with MS have problems in many occupations in their activities of daily living. In addition, studies have indicated that individual-centered interventions are needed because each individual with MS has different problems (8,9).

The current study was planned to examine the effectiveness of client-centered training for people with MS on perceived occupational performance and satisfaction level and determine the occupational performance problems in activities of daily living.

METHODS

The current study included 16 people with MS diagnosis by neurologist according to McDonald criteria (10) who applied to the public university occupational therapy department between January 2021 and March 2021. In the current study, which was approved by the X University Scientific Research Ethics Committee (2021-23 14.01.21) and planned in accordance with the Declaration of Helsinki, an informed consent form was signed by all participants stating that they volunteered. Afterwards, the demographic information of the individuals was obtained. Then, according to the inclusion criteria, the Mini-Mental State Examination (MMSE) and Expanded Disability Status Scale (EDSS) scores were obtained. Canadian Occupational

Performance Measure (COPM) was applied to create a client-centered training program and to determine perceived occupational performance and satisfaction scores for individuals who meet the requirements. The evaluation process was carried out by the second author of the study.

Inclusion criteria of people with MS in the study; 1-being diagnosed with MS; 2-MMSE score of 24 or higher; 3- having an EDSS score between 1-5.5 (mild to moderate) (11); 4-having occupational performance problem according to COPM results; 5- ability to understand and follow verbal instructions. The exclusion criteria are; 1- having any chronic disease accompanying MS that will affect the rehabilitation process; 2- inability to complete the study; 3- having an attack during the education process; 4- auditory and visual problems that may affect rehabilitation implementation and communication; 5- attendance of any rehabilitation program (speech therapy, psychotherapy, etc.) during the study period.

According to the inclusion and exclusion criteria, one of the participants who had another chronic disease accompanying MS was excluded from the study, and another participant could not complete the training process (Figure 1).

Measurements

First, demographic data including age, gender, educational status, body mass index (BMI), marital status, living with whom, and average monthly income of people with MS who participated in the study were obtained and it was questioned whether they had any chronic disease accompanying MS.

Assessments

Expanded Disability Status Scale (EDSS) (11)**:** EDSS is used to determine the clinical situation in Multiple Sclerosis. This scale shows the neurological levels and functions of people with MS. The first step, 0 points, represents normal neurological findings, and the last step, 10 points, indicates death due to MS. It consists of 20 digits in total, the first score after 0 is 1, and the next scores continue in 0.5 point increments. According to the EDSS, disability grades are classified as mild (1-3.5), moderate (4-5.5), severely ambulated (6-6.5) and severely unambulated (7-9.5) (11). The EDSS score of the participants was determined by the neurologist.

Mini-Mental State Examination (MMSE) (12)**:** The MMSE, another test used in the inclusion criteria in the study, was used to determine the cognitive status of people with MS. The MMSE assesses various cognitive functions, including memory, attention, and language. From a maximum total of 30 points, a score of 24 is accepted as the threshold value, with scores below this value indicating problems in cognitive functions. Scores below this value indicate that there is a problem in cognitive functions (12). Turkish validity and reliability studies of the test have been conducted, and the researcher found the MMSE positive and negative predictive values of .90 and .95, respectively, and kappa score .86 (13).

Canadian Occupational Performance Measure (COPM) (6)**:** The COPM was used to evaluate the perceived occupational performance and satisfaction levels of individuals and to create a client-centered training program. This scale is a

measurement that determines the problems faced by individuals in the field of OP through a semi-structured interview. This measure evaluates OP problems with the performance and satisfaction scores given by the individuals themselves. In the first step, ADL problems experienced by individuals in the areas of self-care, productivity and leisure are determined and each occupation is asked to be given an importance score. Afterwards, they are asked to select a maximum of 5 occupations according to their importance score and to give performance and satisfaction points on the basis of the Likert system, which is rated between 1 and 10 for each occupation. Average performance and satisfaction scores are obtained by summing the performance and satisfaction scores and dividing them by the number of occupations (6). The Turkish adaptation was performed in people with MS, and the test–retest reliability of the Turkish version of COPM performance was .988 and satisfaction .986, indicating excellent reliability (4).

Training program

A training program consists of 24 sessions of 45 minutes, 4 days a week for 6 weeks. The client-centered training program developed according to the literature, characterized by the active participant attitude of both the participants and the therapist, based on a systematic therapy process and developed according to the literature, consisted of 4 stages: (1) person-centered goal setting, (2) determining the training plan jointly with the participant and the therapist, (3) implementing the training program, (4) reviewing the training process and revising the training process when necessary (14-16). The training procedure was implemented according to the priority targets set in COPM. The 4 stages are explained below:

Stage one: Setting a measurable, realistic and achievable goal for solving occupations involving performance problems.

Stage two: Identifying possible solutions for the training program, jointly with the participant and the therapist. Evaluate and examine the pros and cons of possible solutions.

Stage three: After deciding on a possible solution, making a plan and taking action:

- Adapting each occupation, making changes to one or more of: who (interests another person), where (changes place), when (changes time), how (changes the way it is practiced) and what (adding new steps at the beginning or end of the occupation),

- Planning the steps of the occupation (according to priority),

- Gathering information and resources about occupations.

Stage four: Reviewing the training process activated by client-centered training, getting feedback on the participant's experience, and making changes to the course of action as needed.

These trainings were carried out by the first author of the study.

Statistical analysis

Data were analyzed with the IBM SPSS Statistics version 25.0 (IBM Corp., Armonk, NY) statistical software package program. Normality of data distributions was analyzed with the Shapiro Wilks test. Data are presented as median and interquartile range. Differences between groups were analyzed with the chi-square

test for nominal data. Differences between the pre- and post-training results of the groups were analyzed with the Wilcoxon signed-rank test. Significance level was accepted as p<0.05. The power of the study was analysed using G*Power software, version 3.1.9.2 (Kiel). Power analysis was performed to calculate the sample size required to detect a significant effect size (Cohen's d = 0.80) of the groups on COPM. Twelve subjects were needed in group to ensure a power of 80%, assuming a two-tailed test for α of 0.05. Considering the possibility of dropouts, we decided to include 16 participants in group.

RESULTS

14 people with MS, 10 females (71.4%) and four males (28.6%) participated in the study. It was determined that all of the participants lived with their families. Demographic data of people with MS are presented in Table 1.

Table 1. Sociodemographic data of individuals with multiple sclerosis

	N	minimum	maximum	mean	standart deviation
Age (year)	14	30,00	56,00	45,00	8,08
BMI	14	19,47	29,78	25,04	3,71
Educational status		n		%	
Primary school		3		21,40	
High school		4		28,60	
University		7		50,00	
Marital status		n		%	
Married		9		64,30	
Divorced		3		21,40	
Single		2		14,30	
Monthly income		n		%	
<2500 TL		2		14,30	
2500-6000 TL		9		64,30	
>6000 TL		3		21,40	

BMI: body mass index; EDSS: Expanded Disability Status Scale, TL: Turkish Lira

After the client-centered training, there was a significantly increase in the COPM performance and satisfaction scores (p<0.05). In Table 2, the perceived performance and satisfaction scores of the individuals before and after the training are shown.

Table 2. Perceived occupational performance and satisfaction results before and after training

	Pre- training	Post training	p	d
	Median (IQR)	Median (IQR)		
COPM Performance	3,60 (2,93)	7,35 (6,67)	<0,001**	5,68
COPM Satisfaction	3,22 (1,95)	8,00 (7,00)	<0,001**	4,04

*COPM: Canadian Occupational Performance Measure; **p<0,001 IQR: Inter Quartile Range*

When the occupations that individuals have problems with are examined, 55.17% is self-care, 24.13% is productivity and 20.68% is leisure time occupations at baseline assessment. The activities that participants reported the most problems were the functional mobility area in self-care activities (31.03%). In Table 3, the occupations in which individuals stated problems are presented.

"Table 3"

DISCUSSION

The current study was designed to examine the effectiveness of client-centered training on the perceived occupational performance and satisfaction of people with MS. As a result of the 24-session training program given, it was determined that client-centered training increased perceived occupational performance and satisfaction in people with MS.

In client-centered studies, Law et al. emphasized that this approach is important in increasing perceived occupational performance and satisfaction levels (17). Lewin et al. stated that people participate in the study included client-centred approach more willingly and actively in assessment and training methods that include this approach (18). In another study, authors stated that the client-centered approach was

more effective than traditional approaches (19). Similarly, another authors emphasized that a client-centered approach is important in increasing individuals' participation in treatment and satisfaction (20). In addition, researchers stated that client-centered and occupations and goal-oriented training may have positive effects on the occupational performance and satisfaction of people with MS (21). In the current study, it was determined that client-centered training has positive effects on perceived occupational performance and satisfaction in people with MS. We think that the intervention of a client-centered training approach will lead to more effective results, since lesions are observed in different places in the central nervous system in diseases such as MS, and therefore the disease varies from person to person. In this training approach, the active inclusion and participation of individuals, in particular, can provide a better determination of the problems experienced by individuals in ADL and enable people with MS to participate more actively and efficiently in the training process. For this reason, we think that the use of client-centered approaches in rehabilitation studies can yield more effective results in the training process. This situation may lead to high effect size in COPM performance results in the current study.

Finlayson stated that 10-20% of people with MS have problems in one or more occupations in the field of self-care (3). Mansson et al. found that people with MS have problems in many activities such as bathing, personal care, dressing, going up and down stairs, and going from one place to another (22). Similarly, McDonnell et al. found that people with MS have significant problems in occupations such as dressing, bathing, feeding, and going up and down stairs in ADL (23). In the current study, it was determined that more than half of the people with MS had problematic occupations in the field of self-care. On the other hand, the functional mobility area was the section in which people with MS reported the most problems (31.03%). Functional mobility includes occupations that involve the mobilization and transfer processes of the individual. Individuals stated occupations such as “walking from one place to another, using public transportation and going up and down stairs” in this area. The inclusion criteria of people with MS were requested to be between 1 and 5.5 points according to EDSS. It is the range of scores between these values that individuals perform independently in occupations that require skills related to transfer and mobility but have problems in mobility and transfer processes. We see that most of the occupations mentioned in our study include mobility skills. The reason for this was thought to be the current disability levels of individuals. Here, it may be observed that the physical, cognitive and emotional functions of people with MS worsen and negatively affect the performance and satisfaction of individuals in functional mobility occupations in the field of self-care.

Glanz et al. reported that causes such as increased disability, fatigue, depression and anxiety, and decreased quality of life in people with MS cause problems such as adapting to work, maintaining work, and productivity at work (24). In the literature review study, authors stated that many problematic factors such as physical, cognitive, emotional and environmental

conditions of people with MS have an negatively effect on their productivity occupations (25). In another study, researchers found that occupations such as finding a job and maintaining a job are the occupations in which people with MS have the most problems in the field of productivity (3). Similarly, in another study, authors found that people with MS had problems in housework management and activities such as housekeeping (26). In the current study, it was determined that people with MS have problems in productivity occupations such as finding a job, going to work, and cleaning the house. We think that the main reasons for experiencing problems in these occupations are the loss of function caused by the disease. It can be seen that there is a decrease in performance and satisfaction levels in these activities since these occupations require a certain physical effort and individuals cannot provide this skill sufficiently due to illness. Mobility and transfer skills are also required in the specified occupations. The negative effects of these skills on individuals may cause problems in the occupations mentioned. In addition, we think that it will be important to examine these work-related situations in detail within the scope of the vocational rehabilitation program. Implementation of home arrangements and rehabilitation programs for house cleaning and similar occupations may have a more positive effect on people's occupational performance and satisfaction.

The negative effects of physical, cognitive and emotional functions in people with MS cause individuals to stay at home more and live introverted and live sedentary (27). Vanner et al. reported that being physically active in people with MS reduces depression and fatigue, prevents apathy, and increases cognitive level, quality of life, and self-efficacy (28). In these studies, researchers stated that people with MS can be adversely affected physically, cognitively and psychologically, and therefore, cognitive behavioral therapy, cognitive rehabilitation, and studies to increase physical capacity will have positive effects on people with MS (8,9). In the current study, it was determined that they had problems in doing sports (football, basketball, walking, etc.) and meeting with friends in the leisure time occupations. We think that this situation is caused by both physical problems and psycho-social problems mentioned in the literature. Doing sports includes skills such as certain physical strength, mobility, endurance, determination and perseverance, and the negative effects of these skills in people with MS may cause problems in performing this occupations. Similarly, the psycho-social problems and physical inadequacies mentioned in the literature may cause problems in this occupations. We think that the use of a client-centered training approach in studies to be carried out on leisure time occupations in people with MS can be better understood and more positive results can be obtained.

Limitations

There are some limitations and recommendations in the current study. First, the lack of a control group in our study is a limitation of our study. We think it is important to demonstrate the effectiveness of our control group training method. We suggest testing the effectiveness of training with a control group or with different intervention methods in future studies. Second, the lack of classification according

to different types of MS may prevent the generalizability of the study. Therefore, we think that it would be important to conduct separate studies on different types of MS. Third limitation, current study sample consist participants whose EDSS scores 1-5.5. This situation may precludes generalizability of our findings. Last limitation is using the MMSE for evaluating cognitive functions for inclusion criteria in the study, the MMSE may be weak for the assessment of detailed cognitive status for people with MS.

CONCLUSION

As a result, the client-centered rehabilitation approach has positive effects on occupational performance and satisfaction in people with MS. People with MS have problems in various occupations in the areas of productivity and leisure, especially in the field of self-care People with MS have problems mainly in functional mobility occupations. Having an client-centered approach has led individuals to participate more effectively and actively in the training process. For this reason, it will be important to use a client-centered approach, especially in diseases such as MS that vary from person to person physically, cognitively and psychologically. Demonstrating the effectiveness of the client-centered training approach in randomized controlled, systematic review and meta-analysis studies will be important in better understanding the importance of this approach.

Authorship Contributions

Concept: B.T., S.P., Design: B.T., S.P., Data Collection or Processing: B.T., S.P. Analysis or Interpretation: B.T., S.P., Literature Search: B.T., S.P, Writing: B.T., S.P.

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Conflict of Interest: No conflict of interest was declared by the authors.

Ethical considerations

Ethics Committee Approval: Ethics committee approval was obtained with the decision of University of Health Sciences Turkey, Gülhane Scientific Research Ethics Committee Ref Go: 21-23 (14.01.21). The study was conducted in accordance with the principles of the Declaration of Helsinki.

Informed Consent: Informed consent form was signed and obtained from all participants included in the study.

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