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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

Social Problem Solving Approach, Caregiving Role, Depression and Quality of Life in Stroke Caregivers

İnmeli Bireylere Bakım Verenlerde Sosyal Problem Çözme Yaklaşımının Bakım Verme Rolü, Depresyon Ve Yaşam Kalitesi Üzerine Etkisi

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ABSTRACT

Aim: The aim of this study is to investigate the effect of social problem solving approach on caregiving role, depression and quality of life in caregivers of stroke individuals.

Methods: Sixty-one stroke caregivers were included in this study. Caregivers were divided into two groups as the study and control groups. Basic occupational therapy strategies were explained for groups in hospital environment. Moreover, social problem solving approach started to be carried out in the hospital environment until post-discharge 12th week was used for the study group. The outcomes were evaluated using Bakas Caregiving Outcomes Scale, Beck Depression Inventory, Nottingham Health Profile and Person Environment Fit Scale.

Results: When the groups were compared after the social problem solving approach, a statistically significant difference was found in favor of the study group in terms of the burden of care, and depression level and the emotional reaction subdivision scores of the quality of life ($p<0.05$).

Conclusion: Social problem solving approach provided positive outputs in increasing the quality of life, decreasing depression level and caregiving load of stroke individuals' caregivers.

Key words: Occupational therapy, caregiving, depression, quality of life, social problem solving

ÖZET

Amaç: Bu çalışmanın amacı inme geçirmiş hastalara bakım verenlerde, sosyal problem çözme yaklaşımının bakım verme rolü, depresyon ve yaşam kalitesi üzerine etkisini araştırmaktır.

Yöntem: Çalışmada altmış bir inme geçirmiş hastaya bakım veren kişi yer aldı. Bakım verenler kontrol ve çalışma grubu olarak ikiye ayrıldı. Her iki gruba hastanede temel ergoterapi stratejileri açıklandı. Bununla birlikte çalışma grubuna hastane ortamında başlatılıp taburculuk sonrası 12. haftaya kadar sosyal problem çözme yaklaşımı anlatıldı. Sonuçlar Bakas Bakım Verme Etki Ölçeği, Beck Depresyon Ölçeği, Nottingham Sağlık Profili ve Kişi Çevre Uygunluğu Skalası ile değerlendirildi.

Bulgular: Gruplar sosyal problem çözme yaklaşımı sonrası karşılaştırıldığında, bakım yükü ve depresyon düzeyi ile yaşam kalitesinin emosyonel reaksiyon alt bölümü açısından istatistiksel olarak çalışma grubu lehinde anlamlı farklılar bulundu ($p<0.05$).

Sonuç: Sosyal problem çözme yaklaşımı inme geçirmiş hastalara bakım verenlerde yaşam kalitesini artırma, depreyon düzeyi ve bakım yükünü azaltma yönünde pozitif kazanımlar sağlamıştır.

Anahtar kelimeler: Ergoterapi, bakım verme, depresyon, yaşam kalitesi, sosyal problem çözme.

Introduction

Stroke is defined as a familial disease.[1] Caregivers may need to leave work or school to meet caregiving demands.[2] However, it is stated that caregiving process negatively effects work and leisure activities and participation to social life.[3,4] It was also stated that, especially, psychological health was affected, and depression at different levels was noticed in 40% of caregivers.[5,6] Moreover, early period support was reported to create a positive emotional mood change in caregivers, and also provided cost efficacy as alternative to the traditional caregiving understanding.[7]

Patient relatives and health professionals are use different post-stroke intervention strategies. Providing special services for the caregivers, presenting social support by individuals at similar ages, counseling and trainings were included in these programs, and had positive effects upon caregivers.[8]

Occupational therapists benefit from therapeutic modalities in dealing with the client. One of the most frequently used modes is social problem solving.[9] Social problem-solving approach have five basic principles (identify the problem, brainstorm solutions, critique the solutions, choose and implement a solution and evaluate the outcome). In social problem-solving, individuals attempt to identify or discover effective coping responses for problems they encounter in their social environment, such as the home. According to social problem-solving theory, family caregivers who use social problem-solving skills should have positive outcomes because they solve problems optimistically using a systematic and objective approach.[10] It has been shown in the literature that problem solving is an important approach in dementia patients and caregivers, and that this can be applied by occupational therapists, nurses and social workers.[11] It has been reported that occupational therapy practices, which include social problem solving approach in individuals with breast cancer, have positive effects on function, quality of life and emotional status.[12] Similarly, the positive results of the social problem-solving approach applied by the occupational therapists and the physiotherapist in family-based interventions of spinal cord injured individuals have been shown.[13] The social problem-solving approach implemented by different professionals, such as occupational therapists, nurses, social workers, has shown positive results for caregivers of stroke patients.[14]

No studies have investigated the effects of social problem solving approach to caregivers of stroke individuals in our country. The aim of this study was to research the effect of social problem solving approach included in occupational therapy interventions in stroke individuals' caregivers upon caregiving role, depression, and life quality.

Materials and Methods

Sampling

Sixty-one stroke patients and their caregivers who voluntarily agree to participate to the study were included. The patients with the diagnosis of acute stroke were being treated in three different hospitals (state hospital, research and application hospital, private hospital). Twenty-nine patients in the treatment group and twenty-eight patients in the control group were followed up with the diagnosis of ischemia. Two patients in the treatment group and two patients in the control group were followed up with the diagnosis of hemorrhage.

Caregivers of all stroke patients in the hospital who were admitted under the research were first listed and numbered. The second author used a simple randomization strategy to assign participants to the treatment group or to the control group. The second author had no information about the caregiver. The inclusion criteria of stroke caregiver were being the first degree relative of acute stroke patients who had it for the first time (husband/wife, daughter, son or daughter-in-law), being a volunteer caregiver, having adequate communication for understanding the problem solving strategies with basic interview and scales, having no disease that would affect the communication process and regular participation to the evaluation and study program defined for the study process. Caregivers of patients who have recurrent stroke history during study were excluded from the study.

This study was conducted on caregiver of stroke patient. However, since the level of involvement of caregivers is primarily related to the patient, certain characteristics must be common to patients. Inclusion criteria of stroke patient; followed by neurology physician for acute stroke in hospitals where the study was conducted, independent of daily life activities before stroke, do not have psychiatric or neurological problems in the past, patients who have adequate communication to respond to scales by basic interview. In this context, the patient who could not speak, the patient who could not be fed, the patient with PEG and the patient with NG were not included in this study. All patients were receiving physiotherapy and rehabilitation during their hospitalization.

Design

Basic occupational therapy strategies related to caregiving were explained to both groups in hospital environment (general information related to the disease and basic strategies they could use during their daily life activities). There was no intervention in the control group caregivers except for informing However, in the hospital environment, social problem solving method was taught to the study group caregivers.

Procedure

In cases in the study group, telephone-assisted social problem solving approach was used. The program was started in the hospital environment, completed on telephone calls made in post-discharge 2nd, 3rd, 4th, 6th, 8th, 10th and 12th weeks, and no more calls were made until the 24th week when the last evaluation was carried out. The interventions in the hospital environment were caregivers' describing the problems related to acute period, sharing ideas on creating solutions, caregivers' presenting their own solutions, finding the most appropriate solution, and making a consensus on practice. In the hospital, a program was conducted in line with the requirements of the caregivers such as how physical aid related to the needs of the patients would be provided (such as direct transfer), providing cognitive aids during the activities (such as using more simple orders for the patient), and teaching in-room arrangements (decorating the room in a way patient's bed and caregiver's area would be comfortable). A list related to the activities caregiver had to fulfill and caregiver would like to fulfill was created; and home visit was actualized at the 1st week after discharge. This visit was completed at a totally 3-hour period, and the problem solving method that was started previously in the hospital was repeated at home. After home visit, the program was maintained through the telephone calls. In each telephone conversation, the caregivers were asked to explain the problems they encountered until the current time from the previous phone call, the solutions they found for these problems, and to tell about whether they practice these solutions or not. During the conversation, the reasons for the solutions not to be practiced were discussed. Moreover, a common solution was tried to be found with the researcher for the situations that could not be solved or considered to be inadequate. Recently defined problems, solutions of these and their practice were also discussed. All interviews were registered.[10]

Instruments

After registering the data related to the socio-demographical properties of stroke patients and their caregivers (age, gender, educational background, etc), the scales mentioned below were performed during the pre- and post-implementations. The first and last measurements were made by a therapist who mastered occupational therapy and continued her PhD program.

The Functional Independence Measure (FIM): The FIM has a total of 18 items in 2 main sections of motor functions (13 items) and cognitive functions (5 items). The evaluation is made over 7 points and the total FIM points can range from 18-126. Higher points indicate a higher level of independence.[15]

Bakas Caregiving Outcomes Scale (BCOS): BCOS was used to measure the change in life of stroke individuals' families. The scale included totally 15 questions scored between +3 (the best direction) and -3 (the worst direction). The scale included 15 items and 1 more item related to how individuals were affected from the caregiving; and the scoring was included in a different category. The Turkish version of BCOS was used in this study.[16]

Beck Depression Inventory (BDI): BDI included 21 items related to the depressive symptoms such as pessimism, feeling of failure, dissatisfaction, feeling of guilty, uneasiness, fatigue, poor appetite, indecision, sleep disorder, and social withdrawal. Scoring was determined between 0 and 3, and the highest score indicated the increase at depression. The Turkish version of BDI was used in this study.[17]

Nottingham Health Profile (NHP): NHP is a general life quality scale aiming to measure health status perceived by the individual's self in terms of physical, emotional, and social aspects. The scale included 38 items relayed to sleeping, level of energy, emotional status, social isolation, physical mobility and pain. Each item is answered as 'yes' or 'no'. The positive answers indicate the decrease at life quality. The Turkish version of NHP was used in this study.[18]

Evaluation of the Physical Environment: The compatibility of stroke individuals and caregivers with the environment they lived in was evaluated using Person Environment Fit Scale (PEFS). It was a scale including the pre-stroke health status of the stroke individuals, their daily life activities, their using supportive instruments, and home status and physical health of the caregiver was evaluated. Scoring between 1 and -1 was defined for each of these six categories. High score indicated that individuals were compatible with the environment they live in.[19]

Assessment of Socio-Economic Environment: In the evaluation, caregivers were asked to list the problems they experienced during the process (the dependency level of the patient and how this affected the caregiver, patient's communication problem, limitedness in leisure time period, increasing workload due to the disease, economic difficulties, and social role switch) and explain the economic difficulties they experienced related to the stroke process in the 24th week. The economic status was described as sufficient or insufficient. In this study, whether state support was granted or not was investigated related to the economic status .[20,21]

Statistical Analysis

SPSS 18.0 package software was used for the statistical analyses of the data. The variables determined by the measurement are expressed as the mean ± standard deviation and the difference ± standard deviation, and the percentage value is calculated for the variables determined by the count. Kolmogorov-Smirnov Test was benefited to find whether the distribution was normal for the comparison of the pre- and post-intervention evaluation results. Because the measurement results did not create a normal distribution, non-parametric tests were preferred. Difference values between the first and last measurements were taken. Inter-group evaluation was done according to difference scores. Qualitative data were turned into quantitative data, and Chi-square test was used for the analysis. The Mann Whitney U test was used to compare the numerical values of two groups.

Ethical Issues

This study complied with the Declaration of Helsinki, and the protocol was approved by the Clinical Research Ethics Committee of University's Faculty of Medicine. Before the study, written informed consent was obtained from caregivers after all procedures had been fully explained.

Results

The mean age of patients in treatment group were 69.19±10.48 years, and the mean age of patients in control group were 70.66±11.77 years. There was no significant difference among the patients in terms of age, pre-stroke employment status and educational levels ($p>0.05$).

Functional Independence Measurement (FIM) was used to evaluate the independence levels of patients at the beginning and end of the study. Motor and cognitive levels of patients were defined. According to the first evaluation results of FIM, seventeen patients in the treatment group and fifteen patients in the control group were dependent on toilet use, the last evaluation results of FIM five patients in the treatment group and seven patients in the control group were dependent on toilet use. The mean FIM score of patients in treatment group were

68.03±24.91 and the mean FIM score of patients in control group were 68.66±28.84 at first evalution. The mean FIM score of patients in treatment group were 108.90±21.13 and the mean FIM score of patients in control group were 104.90±22.93 at last evalution.

Nineteen of the patients in the treatment group were given care at their home, twelve of the patients in the treatment group were given care at the home of their child. Twenty of the patients in the control group were given care at their home, ten of the patients in the control group were given care at the home of their child.

The mean age of stroke caregivers in treatment group were 56.45±6.69 years, and the mean age of stroke caregivers in control group were 58.56± 9.94 years.

There was no significant difference among the caregivers in terms of age, employment status, social security and affinity to the stroke individual (p>0.05). Difference was obtained between the educational levels of the caregivers (p<0.05). The results are presented in Table 1.

According to difference values between BCOS and BDI' first and last measurements scores of the caregivers, significant decrease at caregiving load and depression level was noticed in the study group (p<0.01). Similarly significant difference in favor of the study group was found in emotional reaction in NHP'difference scores (p<0.05). The results are presented in Table 2.

It was determined for both groups that increased dependency level of the patient was the most among the problem solving difficulties related to the socio-economic environment (Table 3).

When home evaluation scores and PEFS scores related to the first and last evaluations of the caregivers in the study and control groups were compared, no significant difference was determined between the groups (p>0.05).

It was determined for the 24th week that, 22 cases (71%) in the study group and 13 cases (43.3%) in the control group had sufficient economic status, and there was a significant difference in favor of the study group between two groups ($p<0.05$). It was also specified that 3 cases (9.7%) in the study group and 5 cases (16.7%) in the control group granted state support at the end of 6 months, and there was no difference between the groups ($p>0.05$).

Discussion

It was found social problem solving approach provided positive outputs for increasing the quality of life, decreasing depression level and caregiving load of stroke individuals' caregivers in this study.

Needs of the stroke caregivers varied from the request of being informed about the recovery period to being trained on helping to daily life activities of the patient and modifications related to reaching to social resources, emotional sharing, and post-discharge adaptation to home.[22] Caregivers also need support in terms of psychological support as well as physical aid, being informed and social terms.[23] It has been mentioned that when both stroke individual and the caregiver are informed and supported on roles, relationship changes, and decreased autonomy, then positive changes are possible to be provided.[24] In our study, in the 24th week, it was noticed that the problems determined during the intervention process were possible to appear at times, and the solution could be found and practiced by the caregiver more easily for study groups. This result proved as similar to the studies in the literature that caregivers experienced some problems as of the early period, they needed a correct approach during the solution process, and social problem solving approach created awareness for the caregivers through a comprehensive viewpoint.

It was reported that long-term caregiving of stroke individuals' caregivers caused change in working conditions, and this change caused increased economic stress.[25] It was presented that caregivers of the physically dependent individuals faced with increased time waste and decreased level of income.[26] In our study, in parallel with the research results in the literature, post-discharge economic difficulties related to stroke were determined. In the study group, one case was suggested on part-time working, three cases were suggested on taking caregiving money, and two cases were suggested on turning back to work gradually. In continuing telephone calls, positive results of the suggestions were reported.

Greenwood et al.[24] stated that stroke caregivers could not leave the patients alone due to security problems at home, and sometimes they even could not leave the room they were in, and experienced the feeling of being prisoned in their own homes. In our study, caregivers mentioned that they experienced security problems at homes where they live with the stroke individual. In the study group, arrangements in a way supporting the mobility such as creating uninterrupted areas, using wall bar in toilet and restrooms, and in-room furniture order were provided. As a result, the caregivers of the study group achieved positive gains from these recommendations.

Pierce et al.[27] indicated that caregivers of stroke individuals followed for one year were anxious for both the patient and themselves, experienced a specific tiredness, their lives were lost during the caregiving, and appropriate supportive trainings related to caregiving role were needed. Preiffer et al.[28] proved that telephone supported problem solving method provided decrease at depression level, physical complaints, and caregiving load and a significant increase at leisure time in caregivers of stroke individuals. In our study, it was noticed that caregiving load of study group caregivers decreased at a long term. In the study group, it was thought that the maintenance load was reduced by offering alternatives such as stress reduction factors and interviews with friends.

It was mentioned that caregivers of stroke individuals experienced changes in feelings-moods as of the acute period, and anxieties experienced during this period caused changes in the emotional status.[29] In a study carried out on husband/wife of stroke individuals, it was reported that caregiving load and depression at a serious level was noticeable in 12th-24th weeks as of the discharge, and there was a decrease at relationship status.[30] Grant et al.[31] stated in their study they administered telephone-supported social problem solving approach in caregivers of stroke individuals that study group was better in problem solving and experienced less depression when compared with the control group. In our study, level of depression decreased in study group in the 24th week; however, no change was noticed in control group. The positive change in emotional mood of the study group was considered to be related with providing any kind of physical correct use of body mechanics and emotional support on caregiving. Moreover, social problem solving approach provided awareness related to being within real life. So that, caregivers were determined to be stronger against the difficulties including the social life, and they experienced less emotion-mood change.

Ogunlana et al.[32] stated that caregivers of stroke individuals had decrease at their quality of life in relation with their increased caregiving load. Akosile et al.[33] reported that there was a negative response in stroke individuals' caregivers quality of life, and more serious responses were noticed in general health and role restrictions related to emotional problems. Evidence based training guides including access to social resources, post-discharge training, talent acquisition, and counseling were reported to be an efficient intervention for development quality of life and health of caregivers.[34,35] In our study, at the 24th week, it was observed that the emotional responses of the caregivers in the study group decreased more than the caregivers of the control group. The results were thought to be related to the reduction in maintenance load.

It was decided that the social problem-solving approach was an appropriate intervention method in identifying possible problems occurring in both acute and chronic periods, creating solutions and implementing solutions in our study. Furthermore, administering the intervention as telephone based was also considered to be an intervention in which caregivers were easily be reached and which did not require a post-discharge cost.

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Table I. Comparison of the Demographic Information Related to Caregivers (Chi-square test)

	Treatment Group (n=31)		Control Group (n=30)		p
	n	%	n	%	
Gender					
Female	25	80.6	23	76.7	0.704
Male	6	19.4	7	23.3	
Affinity to Stroke Individual					0.570
Husband/Wife	19	61.3	20	66.7	
Daughter	6	19.4	6	20.0	
Son	2	6.5	3	10.0	
Daughter-in-law	4	12.9	1	3.3	
Marital Status					0.478

Married	30	96.8	27	90.0	
Single	1	3.2	2	6.7	
Widow			1	3.3	
Level of Education					0.008*
Illiterate	2	6.5	7	23.3	
Elementary	22	71.0	21	70.0	
Secondary	-	-	2	6.7	
High School	7	22.6	-	-	
Employment Status					0.360
Employed	1	3.2	3	10.0	
Unemployed	18	58.1	21	70.0	
Retired	10	32.3	5	16.7	
Quit work due to stroke	2	6.5	1	3.3	
Social Security					0.144
Yes	31	100	28	93.3	
No			2	6.7	

*P<0.01

Table II. Comparison of the Results Related to the Caregivers in Treatment and Control groups (Mann Whitney U Test)

	Treatment Group **X±SD**	**Control Group** **X±SD**	**z**	**p**
BCOS				
Total	5.48±8.00	1.00±8.02	-2.238	0.025*
Life change	0.45±1.28	0.16±1.59	-1.019	0.308
BDI				
Total	-2.90±4.79	0.26±7.58	-2.416	0.016*
NHP				
Pain	-6.45±20.37	0.83±27.64	-0.942	0.346
Energy Level	-16.11±33.15	-0.00±30.33	-1.804	0.071
Emotional Reaction	-16.14±26.24	1.10±24.79	-2.225	0.026*

Social Isolation	-5.80±22.02	3.33±27.33	-1.220	0.222
Physical Activity	-3.62±18.87	0.00±19.42	-0.588	0.556
Sleeping	-10.32±28.69	-6.00±29.31	-0.717	0.474
Total	-58.46±108.03	-0.73±88.96	-1.673	0.094

BCOC: Bakas Caregiving Outcomes Scale

BDI: Beck Depression Inventory

NHP: Nottingham Health Profile

Table III. Problem Solving Difficulties Related to Socio-Economic Environment

Defined Difficulties	**Treatment Group**		**Control Group**	
	n	%	n	%
Stubbornness of the patient	3	9.67	2	6.66
Communication problem with the patient	3	9.67	2	6.66
Over attention request of the patient	4	12.9	-	-
Unwillingness of the patient	6	19.35	1	3.33
Increased dependency level of the patient	7	22.58	9	30
Patient's inattention to risk factors	2	6.45	-	-
Inadequacy of social support networks	4	12.9	3	10
Caregiver's being over-worried	4	12.9	1	3.3

Negative effect of the social surrounding	1	3.22	-	-
Excessive home visits	1	3.22	-	-
Experiencing economic difficulty	1	3.22	9	30
Insufficient time	-	-	1	3.33

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