Investigation of the Relationship Between Disability and Depression in Elderly People Staying in a Physical Therapy and Rehabilitation Hospital

Bir Fizik Tedavi Rehabilitasyon Hastanesinde Yatan Yaşlılarda Yeti Yitimi ve Depresyon Arasındaki İlişkinin İncelenmesi

Havva KAÇAN SOFTA, Gülşen ULAŞ KARAAHMETOĞLU

SUMMARY

Objectives: This descriptive study aims to identify the relationship between disability and depression, and the affecting factors in patients aged 65 and over staying in a physical therapy and rehabilitation hospital.

Methods: The study was conducted with 144 elderly patients aged 65 and over who were treated in a physical therapy and rehabilitation centre. The data were collected using the descriptive data form, Geriatric Depression Scale (GDS) and the Brief Disability Questionnaire (BDQ).

Results: The depression score averages were found to be high for the elderly patients who were aged between 73 and 76 (22.531±10.800), were not literate (21.635±11.784), were workers (20.200±6.088), had extended families (23.542±12.707), had a low level of income (x=21.833), had diseases for a long time (23.491±13.539), and were single and living alone (x=23.320). An increase in patients' education level, having an extended family, and having low income levels were determined to increase disability score averages, and this difference was found to be significant. According to the results, as disability score averages increase, depression score averages also increase significantly (r=0.205; p=0.014<0.05).

Conclusion: The relationship between disability and depression in the elderly should be evaluated frequently since it affects the treatment and care processes. The elderly who are living alone, have extended families and a low income level should be monitored and supported for depression and disability.

Keywords: Depression; disability, nursing; the elderly.

ÖZET

Amaç: *Bu çalışma bir fizik tedavi hastanesinde yatmakta olan 65 ve üstü yaştaki bireylerde yeti yitimi ve depresyon arasındaki ilişkinin saptanması ve etkileyen değişkenlerin belirlenmesi amacıyla tanımlayıcı olarak yapılmıştır.*

Gereç ve Yöntem: *Araştırma bir fizik tedavi ve rehabilitasyon merkezinde tedavi görmekte olan 65 yaş ve üstündeki 144 yaşlı birey ile gerçekleştirilmiştir. Araştırma verileri hastaları tanımlayıcı veri formu, Geriatri Depresyon Ölçeği (GDÖ) ve Kısa Yeti Yitimi Ölçeği (BDQ) ile toplanmıştır.*

Bulgular: *Bu çalışmada 73–76 yaşında (22.531±10.800), okur yazar olmayan, (21.635±11.784), işçi olarak çalışan (20.200±6.088), geniş aile tipine sahip (23.542±12.707), gelir düzeyi düşük (x=21.833), uzun süredir hastalığa sahip olan (23.491±13.539), bekar ve yalnız yaşayan yaşlıların (x=23.320), depresyon puanları yüksek ve anlamlı bulunmuştur. Eğitim düzeyinde artma, geniş aileye sahip olma, düşük gelir durumuna sahip olmanın yeti yitimi puan ortalamalarını yükselttiği ve bu değişimin anlamlı olduğu saptanmıştır. Çalışma sonucuna göre, yeti yitimi puan ortalamaları arttıkça anlamlı bir şekilde depresyon puan ortalamaları da artmaktadır (r=0.205; p=0.014<0.05).*

Sonuç: *Yaşlıların yeti yitimi ve depresyon arasındaki ilişki yaşlıların tedavi ve bakım süreçlerini etkileyeceği için sıklıkla değerlendirilmesi önerilmektedir. Yalnız yaşayan, geniş aileye sahip olan ve gelir düzeyi düşük olan yaşlıların depresyon ve yeti yitimi açısından izlenmeleri ve desteklenmeleri önerilmektedir.*

Anahtar sözcükler: *Depresyon; yeti yitimi; hemşirelik; yaşlı bireyler.*

Introduction

The number of people aged 65 and over who currently constitute 10% of the world population more rapidly increases in developing countries.[1] Aging is a physiological concept that refers to the irrevocable loss of physical and psychological powers.[2]

Old age is a period of decreases and losses in physical and

cognitive functions, health, youth and beauty, productivity, sexual life, income level, reputation, role and status, independence, friends, spouse and close relationships, social life and social supports, etc.[3–5] The most important of these changes are chronic diseases. Chronic diseases are important health problems that affect all aspects of life for a long time and continue with recurrences.[6] Keskinoğlu et al. (2003) found in their study on 227 elderly patients aged 65 and over that 60.7% of males and 71.7% of females had chronic diseases; males mostly had cardiovascular and cerebrovascular diseases, diabetes, chronic obstructive pulmonary diseases and hypertension; females mostly had musculoskeletal system diseases and hypertension.[7]

Inability to maintain self-care and perform daily living activities, and consequent dependence on others increase due to aging and chronic diseases, and as a result, individuals experience different levels of disability.[5,8–10] Disability refers

to the impairment due to the problems in body functions and limitation of activity and performance of necessary activities of daily life. It emphasizes the negative interaction between the individual's health status and personal factors (motivation, self-confidence etc.) Therefore, the definition of disability puts the most important emphasis on the fact that individuals cannot participate in social life because of personal deficiencies.[5]

Disability is the result of the limitation of basic physical, psychological, and mental functions, and each of these functions is important in the development of disability.[10,11,12] Disability in the elderly arises from individual and social factors. The chronic diseases and decrease in natural system functions occurring with aging determine the level of disability.[5,10] Some leading determinants of disability in elderly people are insufficient treatment of chronic diseases, cognitive and sensory deficiency, depression, sedentary life, smoking, excessive alcohol intake, unhealthy nutrition habits, and deprivation of social support.[5]

There is insufficient data on disability in our country. According to the Turkey Disability Survey 2002, the disabled population constitutes 12.3% of the total population. The frequency of disability occurrence in males between the ages of 60 and 69 is 37%, rising to 44% at the age of 70 and over, and is higher in females.[5] Disability causes a dependent life by limiting daily living activities and raises the need to receive care, which brings high social and economic costs.[5,10] Disability may cause individuals to feel that they are useless due to being dependent on others, and thereby experiencing a decrease in their self-esteem and increase in depression.[10] Depression is one of the leading psychological problems observed in old age.[13,14] It is an important factor that affects quality of life, together with various diseases or alone.[18,19] Depression may cause early death, deterioration of general health, etc., when it is not treated; however, the quality of life of elderly people increases with appropriate treatment.[20] The frequency of depression in the elderly varies between 1% and 60%, according to the aim of the study and the methods used.[4,16,17,19,21] Depression is seen to cause a significant level of disability since it affects multiple aspects in the life of the elderly person.[10,17,22]

This study aims to identify the relationship between disability and depression in the elderly which may be caused by health problems, and to determine the risk factors affecting disability and depression. This study will be a guide to developing the protective and preventive measures for decreasing and preventing disability due to depression, and thereby improving the health status of the elderly. The study aims to contribute to a healthier and happier life for elderly people.

Study Type

This is a descriptive study on the relationship between disability and depression in patients aged 65 and over staying in the Kastamonu Physical Therapy and Rehabilitation Hospital.

Population and Sampling of the Study

The population of the study consisted of the patients aged 65 and over in a Physical Therapy and Rehabilitation Hospital between November 20 and December 5, 2014; and the study sample consisted of 144 elderly patients without mental or neurological problems, who had been referred to the hospital because of disease, and had agreed to participate in the study. The written permissions of the relevant institutions were obtained to conduct the study. Verbal consents of the participants were also obtained.

Data Collection Type and Tools

The data were collected from face-to-face interviews by the researchers. The Patient Descriptive Form, Brief Disability Questionnaire and Beck Depression Scale were used to collect data.

Patient Descriptive Form: This was developed by the researchers upon reviewing the literature. It consists of variables such as age, gender, education level, income level, profession, and performing daily living activities of the elderly.

Brief Disability Questionnaire–BDQ: The BDQ was developed by Stewart et al. in 1988 to evaluate physical and social disability.[23] Its validity and reliability test was performed by Kaplan in 1995. BDQ consists of eleven questions. The score of this questionnaire ranges between 0 and 22. A score between 0 and 4 shows no disability, between 5 and 7 shows slight disability, between 8 and 12 shows medium disability, and 13 and above shows severe disability.[24]

Geriatric Depression Scale (GDS): GDS was developed by Yasevage, Bink et al. in 1983 and tested for validity and reliability by Ertan et al. in 1997. GDS consists of 30 yes/no questions with answers based on patients' own statements. The 3rd, 4th, 5th, 6th, 8th, 10th, 11th, 12th, 13th, 16th, 17th, 18th, 20th, 22nd, 23rd, 24th, 25th, 26th and 28th questions have reverse expression. Each answer in support of depression is given a 1, and other answers are given 0. The total score shows the depression score. Scores of this scale range between 0 and 30. A score between 0 and 10 shows no depression, between 11 and 13 shows possible depression, and 14 and above shows absolute depression. The written permission of Ertan, who tested the scale for validity and reliability, was obtained to use this scale. The Chronbach's alpha was found to be 0.93 for this study.[25]

Data Analysis

The data were analyzed using SPSS for Windows 21.0. Descriptive statistical methods (number, percentage, average, standard deviation) were used to evaluate data. The Kruskall

Table 1. Descriptive characteristics of the patients

	Groups	Frequency (n)	Percentage (%)
Age	65–68	54	37.5
	69–72	39	27.1
	73–76	32	22.2
	77–80	9	6.2
	81 and older	10	6.9
Gender	Male	55	38.2
	Female	89	61.8
Marital status	Married	94	65.3
	Single	50	34.7
Education level	Not literate	52	36.1
	Primary school	68	47.2
	Secondary school	14	9.7
	High school or university graduate	10	6.9
Profession	Pensioner	40	27.8
	Worker	10	6.9
	Civil servant	5	3.5
	Other	89	61.8
Income level	Low	36	25.0
	Medium	108	75.0
Family type	Nuclear	80	55.6
	Extended	40	27.8
	Separated	24	16.7
The people lived	Alone	55	38.2
	With children	46	31.9
	With spouse	43	29.9
Duration of the disease	Less than a year	37	25.7
	1–2 years	37	25.7
	3–4 years	30	20.8
	More than 5 years	40	27.8
Level of independence in daily living activities	Independent	106	73.6
	Dependent	38	26.4
	Total	144	100.0

Whallis test was used to compare the parameters of more than two groups, and the Mann-Whitney U test was used to compare the parameters of two groups and to determine which group had caused the difference. The relationship between the continuous variables of the study was tested using correlation analysis. The collected data were evaluated at 95% confidence interval and 5% significance level.

Findings

Of the participants, 37.5% were aged between 65 and 68, 61.8% were females, and 47.2% had only primary school education. Of all the patients, 75.0% had a medium income level, 38.2% were living alone, and 73.6% were independent in their daily living activities (Table 1).

A statistically significant relationship was found between disability and depression (r=0.205; p=0.014<0.05). This showed that the depression score average increased as disability increased (Table 2).

The depression scores of the patients aged between 73 and 76 (22.531±10.800) were higher than those of the patients aged between 65 and 68 (16.519±12.150) (KW=9.541; p=0.049<0.05). No significant difference was found between the score averages of disability according to age. Disability was found to be at medium level for each medium level. Depression scores of the patients who were not literate (21.635±11.784), were found to be higher than those of patients with primary school education (15.191±8.888). Disability scores increased significantly as education level increased. The depression scores of workers (20.200±6.088) were found to be statistically significantly higher than those of pensioners (14.900±11.666). No difference was found between the disability scores according to profession. The depression (23.542±12.707) and disability score averages (11.263±5.189) of the patients with extended families were found to be higher than the depression (18.988±12.368) and disability (8.833±12.368) score averages of the patients with nuclear families (KW=8.250; p=0.016<0.05) (Table 3).

Table 2. The relationship between disability and depression of the patients

Aspect	Aspect	n	r	p
Disability	Depression	144	0.205*	0.014

Table 3. Score averages of the patients on the disability and depression scale according to age, education level and profession

	Age	n	Ave.	Sd	KW	p
Depression	65–68	54	16.519	12.150	9.541	0.049
	69–72	39	18.897	10.336		
	73–76	32	22.531	10.800		
	77–80	9	17.333	12.619		
	81 and older	10	15.700	13.953		
Disability	65–68	54	12.056	5.906	7.361	0.118
	69–72	39	9.949	5.000		
	73–76	32	10.031	4.261		
	77–80	9	13.889	5.011		
	81 and older	10	12.500	6.948		
Education level						
Depression	Not literate	52	21.635	11.784	10.462	0.015
	Primary school	68	15.191	8.888		
	Secondary school	14	22.357	18.130		
	High school or university graduate	10	19.200	11.727		
Disability	Not literate	52	9.365	5.881	14.195	0.003
	Primary school	68	11.456	4.802		
	Secondary school	14	13.357	4.236		
	High school or university graduate	10	15.700	5.100		
Profession						
Depression	Pensioner	99	14.900	11.666	9.238	0.026
	Worker	40	20.200	6.088		
	Civil servant	5	17.000	13.248		
Disability	Pensioner	99	11.150	4.897	2.273	0.518
	Worker	40	12.400	4.195		
	Civil servant	5	15.000	9.381		
Family type						
Depression	Nuclear	80	18.988	12.368	8.250	0.016
	Extended	64	23.542	12.707		
Disability	Nuclear	80	8.833	6.819	8.061	0.018
	Extended	64	11.263	5.189		

Table 4. Disability and Depression Score Averages of the Patients according to Income Level, Marital Status and Independency in Daily Living Activities

	Income level	n	Ave.	Sd	MW	p
Depression	Low	36	21.833	10.809	1 447.500	0.022
	Medium	108	17.380	11.733		
Disability	Low	36	11.732	5.010	1 470.500	0.029
	Medium	108	9.528	6.340		
Marital status						
Depression	Married	94	15.926	10.618	1 414.500	0.000
	Single and widow	50	23.320	12.025		
Disability	Married	94	11.628	4.731	2 035.500	0.186
	Single and widow	50	10.340	6.527		
Level of independency in daily living activities						
Depression	Independent	106	17.887	10.607	1 910.500	0.639
	Dependent	38	20.184	14.136		
Disability	Independent	106	10.717	5.320	1 662.000	0.110
	Dependent	38	12.474	5.612		

The depression score averages of the patients with low income level (21.833±10.809) were found to be higher than those of the patients with medium income level (17.380±11.733) (U=1 447.500; p=0.022<0.05). The disability score averages of the patients with low income (11.732±5.010) were also found to be higher than those of the patients with medium income (U=1 470.500; p=0.029<0.05). The depression scores of married patients were found to be lower than those of single and widowed patients (23.320±12.025) (U=1414.500; p=0.000<0.05). No difference was found between the disability score averages of the patients according to their marital status (U=2 035.500; p=0.186>0.05). Also no significant difference was found between the patients' independence in daily living activities and disability (Table 4).

Table 5. Disability and Depression Score Averages of the Patients according to the Duration of Disease and the People They live with

	Duration of the disease	n	Ave.	Sd	KW	p
Depression	Less than a year	37	14.919	12.533	8.887	0.031
	1−2 years	37	20.703	13.093		
	3−4 years	30	18.567	10.975		
	More than 5 years	40	19.700	9.230		
Disability	Less than a year	37	12.730	5.966	5.595	0.133
	1−2 years	37	10.243	4.705		
	3−4 years	30	9.933	6.142		
	More than 5 years	40	11.550	4.745		
The people lived with						
Depression	Alone	55	23.491	13.539	12.435	0.002
	With children	46	14.891	8.890		
	With spouse	43	15.954	9.325		
Disability	Alone	55	11.364	6.114	0.379	0.827
	With children	46	11.370	5.170		
	With spouse	43	10.744	4.856		

Depression score averages increased significantly as the duration of disease increased (KW=8.887; p=0.031<0.05). No difference was found between the disability score averages according to the duration of disease (p>0.05). The depression scores of the patients who were living alone (23.491±13.539) were found to be significantly higher than those of the patients who were living with their spouses and children (KW=12.435; p=0.002<0.05). No difference was found between the disability score averages according to the people the patients lived with (p>0.05) (Table 5).

Discussion

A poor but statistically significant relationship was found between disability and depression in this study (r=0.205; p=0.014<0.05). This showed that as disability increased, the depression score average also increased. Similarly, Kaplan (1995) also found a significant relationship between depression and disability.[24] Maral et al. (2001) reported that the disability level of the elderly who had depression indications was high in their study.[17]

This study showed that depression score averages increased with age, and the highest increase was observed in the elderly aged between 73 and 76. Disability was found to be at medium level for each age group. Tel et al. (2014) found a significant relationship between age and disability and between age and depression in their study on the elderly with chronic diseases.[10] It is known that the elderly have losses in terms of their physical appearance, roles and positions, and that their disability and physical impairments increase as a result of these losses. Studies have indicated that depression increases with age.[10,16,26] Depression, in turn, causes an increase in both physical impairments and disability in the elderly.[7]

It was found in this study that the elderly who were not literate, were workers, and were living in extended families had higher disability and depression scores. There are studies which similarly indicate that chronic diseases, insufficient income level and inadequate education lay the groundwork for depression.[26–28] Studies have shown that disability is mostly observed in females, at later ages (85 and over), those with low education and income levels.[5,9,10,29] In this study, a significant relationship was found between income level and disability, and between income level and depression. In addition, the disability and depression score averages of the elderly with a low income level was found to be higher. The findings of this study support the findings of Tel et al. (2014).[10] Akın and Emiroğlu (2003) found the disability level of the elderly without a continuous monthly income to be high.[9] Income level is an effective variable also for depression in the previous studies.[26,30] The findings of this study are similar to those in the literature.

The depression and disability score averages of the single/widowed patients, and the patients who were dependent in their daily living activities, were found to be high. Previous studies have indicated that being widowed or divorced, being dependent in daily living activities, and living alone, negatively affect disability and depression.[3,7,10] Dişcigil et al. (2005) reported that being female increases disability and depression 7.8 times, being widowed increases disability and depression 5.6 times, and two or more chronic diseases increases disability and depression 6.2 times.[3] Tamam and Öner (2001) stated that being dependent in daily living activities is one of the major risk factors of depression in old age.[31] A study in Italy also found a strong relationship between dependence levels of the elderly and depression.[32] Verbrugge and Jette (1994) found that the majority of widowed elderly had disability.[33] Aging causes physiological changes and these lead to an increase in chronic dis-

eases.[3,5,10,18,34,36] Chronic diseases cause disability and some psychological problems, and most frequently, depression in the elderly.[5,35] Depression is the most frequently observed psychiatric disorder in the elderly.[3,17,20,26,35,37,38]

In this study, increase in the duration of diseases was found to cause an increase in depression and disability levels. Similarly, the depression and disability score averages of the elderly patients who were living alone were also found to be high. Gülseren et al. (2001) found an increase in depression indication levels as the duration of diseases increased in their study on patients with diabetes mellitus, a chronic disease that causes disability.[39] Afşar et al. (2012) found that patients with COPD had medium and severe disability in their study on the disability, depression, and anxiety levels in patients with COPD.[29] Dündar et al. (2009) found that depression level was higher and quality of life was lower in patients with chronic back pain, and these findings were closely related to their chronic pain and disability scores.[18] Maral et al. (2001) found a significant difference between the general health status and disability score averages of the elderly living in nursing homes and the elderly living in their own homes; the disability levels of the elderly living in nursing homes with chronic diseases were found to be higher.[17] Akın and Emiroğlu (2003) found a relationship between the number of chronic diseases and loss of mobility/disability.[9] The elderly living alone showed the highest depression scores. Saygılı (2013) stated that elderly people who were embraced by their families, called by their children, and loved, were healthier.[37]

Results and Recommendations

The findings of this study indicated that as the disability levels of the elderly increased, their depression scores also significantly increased. The elderly should be frequently evaluated for depression and disability since the relationship between them will affect their treatment and care processes. The elderly who live alone, have extended families and low income, are dependent in their daily living activities and are aged 80 and older should be supported, since they have higher depression and disability scores.

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