TJFM&PC Turkish Journal of Family Medicine and Primary Care

Original Research / Özgün Araştırma

Evaluation of Anxiety Levels and Sleep Quality of Family Members Providing Home Care Services: A Case-Control Study

Evde Bakım Hizmeti Veren Aile Bireylerinin Anksiyete Düzeyleri ve Uyku Kalitesinin Değerlendirilmesi: Vaka-kontrol Çalışması

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ABSTRACT

Objective: In this study, it was aimed to evaluate the sleep quality of individuals who provide home care services regarding their duration of care service and the status of full or semi-dependent patients who receive home care services. **Methods:** Our study was conducted with 73 home caregiver participants (group 1) and 73 healthy volunteers (group 2). A questionnaire form was formulated for the evaluation of the participants. Beck Anxiety Inventory (BAI) and Pittsburgh Sleep Quality Index (PSQI) were applied to all participants. **Results:** When PSQI scores were evaluated between group 1 and group 2, statistically significant differences were detected (p=0.011). It was concluded that group 1 scores were higher than group 2 and sleep quality is worse. When the PSQI scores and the BAI scores were compared, statistically significant differences were detected (p <0.05). It was found that while the PSQI scores increased, the BAI scores also increased. A statistically significant relationship was also found between BAI scores and the number of diseases (single or multiple diseases) of the home care patients (p = 0.037, p <0.05). **Conclusion:** In conclusion, health expresses a state of complete physical, spiritual, and social well-being. We should evaluate the patient and caregiver in this context and respond to their needs. Sleep is a condition that affects human life entirely. If we want to see a healthy home care patient, we must first ensure that the caregiver is healthy.

Keywords: Home care, caregiver, sleep quality, anxiety

ÖZET

Amaç: Bu çalışmada, evde bakım hizmeti veren bireylerin uyku kalitelerini bakım hizmeti verme süreleri ve evde bakım hizmeti alan hastaların tam ya da yarı bağımlı olma durumlarına göre değerlendirilmesi amaçlanmıştır. **Yöntem:** Çalışmamız evde bakım hizmeti veren 73 katılımcı (grup 1) ve 73 sağlıklı gönüllü (grup 2) ile gerçekleştirildi. Katılımcıların değerlendirilmesi için bir anket formu oluşturulmuştur. Ve tüm katılımcılara Beck Anksiyete Ölçeği (BAI) ve Pittsburgh Uyku Kalitesi Endeksi (PSQI) uygulandı. **Bulgular:** Grup 1 ile grup 2 arasında PSQI skorları değerlendirildiğinde istatistiksel olarak anlamlı fark saptandı (p=0.011). Grup 1'in grup 2'den yüksek puan aldığı ve uyku kalitesinin daha kötü olduğu sonucuna varıldı. PSQI skorları ve BAI skorları karşılaştırıldığında istatistiksel olarak anlamlı farklılıklar saptandı (p <0.05). PSQI skorları arttıkça BAI skorlarının da arttığı görülmüştür. Ayrıca evde bakım hastalarının hastalık sayısı (tek veya çoklu hastalıklar) ile bakım verenlerin BAI skorları arasında da istatistiksel olarak anlamlı bir ilişki bulunmuştur (p = 0.037, p <0.05). **Sonuç:** Sonuç olarak sağlık, tam bir fiziksel, ruhsal ve sosyal refah durumunu ifade eder. Hastayı ve bakıcıyı bu bağlamda değerlendirmeli ve ihtiyaçlarına cevap vermeliyiz. Uyku, insan yaşamını tamamen etkileyen bir durumdur. Sağlıklı bir evde bakım hastası görmek istiyorsak, öncelikle bakıcının sağlıklı olmasını sağlamalıyız.

Anahtar kelimeler: Evde bakım, bakıcı, uyku kalitesi, anksiyete

Received / Geliş tarihi: 07.07.2020, **Accepted / Kabul tarihi:** 22.09.2020

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Akbaş Güneş N. Evaluation of Anxiety Levels and Sleep Quality of Family Members Providing Home Care Services: A Case-Control Study. TJFMPC, 2020;14(4): 633-638.

DOI: 10.21763/tjfmpc.765490

INTRODUCTION

Home Care Services; is a service where the continuity of preventive treatment and rehabilitative care is tried to be ensured, and health and social services are provided at a professional level in the individual's own home or the environment to protect and increase the health and functions of individuals.[1] Clear definition in our country; It was created according to the "Regulation on Presentation of Home Care Services" published in the Official Gazette No. 25751 on March 10, 2005. According to this regulation, Home Care Services are defined as the provision of health care and health services to sick people in the environment where they live with their families, by the health team in a way to meet their medical needs, including rehabilitation, physiotherapy, nutrition and psychological treatment.[2]

Home care service provided by experts and persons is called "formal care", and home care service provided by the family or close environment is called "informal care". especially given the more informally by family members of home care services in elderly care in Turkey.[3] Besides, home care services consist of two main services: home health care and home social support services. Home healthcare includes services aimed at improving and improving the health status of the patient, while home social support services include social services such as the patient's housework, housework, or personal care, day/night care.[4]

In addition to the home health services provided under hospitals or public health directorates, family physicians also regularly make home visits to these patients. The purpose of these visits is to increase the comfort of the patient and to inform the individual or individuals who provide care, and the measures to be taken for the current medical condition of the patients.[5] This task has also been included in the regulation as the family physician's duties and responsibilities.[6]

Providing medical care and rehabilitation for the elderly or individuals requiring palliative care at home instead of existing care units in hospitals. Home medical care services are common practices in many countries, including our country, as it reduces the risks of hospital-acquired infections and healthcare costs. Many patients are cared by their families at home in this way.[7] This situation brings additional responsibilities to caregivers in daily life and unfavorably affects their time, energy, and attention.[8] High rates of stress and psychological illness are observed in family caregivers providing care services to patients requiring long-term home care.[9] In a study performed, it was found that caregivers providing care often experience stress and tension and have a 63% higher mortality risk than those who not home caregivers.[10]

Researches have demonstrated that there is a significant decrease in life welfare and quality of life in home care providers. In a study conducted with family caregivers of cancer patients, mental health problems, and impaired health-related quality of life were observed in family members who home caregivers.[11] In many studies evaluating psychiatric problems in family home caregivers, higher anxiety levels were revealed.[9] In a research conducted on caregivers of advanced cancer patients, poor sleep quality was demonstrated in these individuals, and the quality of their sleep improved with the training and counseling services provided.[12] Limited number of studies have evaluated sleep disorders and sleep quality in caregivers.

In the literature, we did not encounter any study in which patients were evaluated as total or semi-dependent, duration of caregiving, and sleep quality of caregivers. In this study, we aimed to evaluate the sleep quality of individuals who provide home care services regarding to their duration of care service and the status of full or semi-dependent patients who receive home care services.

METHODS

Study Design

Required permissions for the study were obtained from the local ethics committee (30.04.2019/12). All participants signed the informed consent form. Our study was conducted in Family Medicine Outpatient Clinic with 73 home caregiver participants and 73 healthy volunteers.

The study was designed as a case-control study. The calculation of the sample size of our study was determined for independent groups in the G * Power 3.1.9.2 program. Accordingly, the moderate effect size was determined as d = 0.50, and the sample size required for the study at the 85% statistical power and 0.05 significance level was determined to be 146 in total, 73 participants in both groups. 73 participants were determined as "group 1" and 73 participants as "group 2" control group, a total of 146 participants. In our study, the participants providing home care services were determined as “Group 1”. Home caregivers with additional diseases and a history of treatment with anti-depressant or different psychiatric medications within the previous year were excluded from the study. In the group 1, family members who provide formal care or work with home care service were also excluded from the study.

The control group consisting of healthy volunteers was determined as “Group 2”. They

applied to our Family Health Center for employment or to get a medical report for different reasons, did not have any systemic health problems in the file archives, had no psychiatric problems in the last 1 year and did not have a history of any psychiatric medication including antidepressants, They were selected from those who did not provide home care services and agreed to participate in the study.

Data Collection Method

A questionnaire form was formulated for the evaluation of the participants. Group 1 participants were inquired about their age, gender, education level, the number of years they had been providing care, diseases of home care patient, status of home care patient as semi-dependent or fully dependent. Besides, Beck Anxiety Inventory (BAI) and Pittsburgh Sleep Quality Index (PSQI) were applied to all participants.

BAI shows the level of anxiety symptoms experienced by the individual. The total score range is specified as 0-63. The 8-15-point range is considered to be the mild anxiety level, the 16-25-point range as the medium-level anxiety level, and the 26-63-point range as the severe anxiety level.[13] In addition, a validity and reliability study was performed in Turkey.[14]

PSQI is a self-report scale and evaluates sleep quality and disturbance in the last month. The total score is in the range of 0-21 points. A score greater than 5 is expressed as "poor sleep quality".[15] In addition, a validity and reliability study has been conducted in Turkey.[16] The Cronbach alpha value of our study was found to be moderately reliable as 0.672.

Statistical Analysis

Numerical data were expressed as the mean ± standard deviation and median (min-max), and the data specified as qualifications were expressed as percentages (%). In a comparison of the groups, Mann-Whitney U test and chi-square test were used. In addition, the relationship between BAI and PSQI scores in each group was also calculated by correlation analysis. $p < 0.05$ was considered statistically significant. The analysis was carried out using IBM SPSS v.21.

RESULTS

According to the number of diseases, 32 (43.8%) patients had one, and 41 (56.2%) patients had multiple chronic diseases. When we evaluated the dependency levels of the home care patients, 37 (50.7%) patients were semi-dependent and 36 (49.3%) patients were fully dependent. Mean age of the patients was 80.11 ± 10.91 (31-92) years. A statistically significant difference was detected between Groups 1 and 2 in terms of sleep efficiency and duration of sleep ($p = 0.004$, $p < 0.001$, respectively). It was observed that Group 2 had a longer sleep duration and higher sleep efficiency than Group 1. When PSQI scores were evaluated between Groups 1 and 2, a statistically significant relationship was found ($p=0.011$). It was concluded that Group 1 scores were higher than Group 2 and sleep quality was worse in Group 2. Besides, there was a statistically significant relationship between Groups 1 and 2 in terms of BAI scores ($p=0.002$). It was observed that the level of anxiety was higher in Group 1 than in Group 2 (**Table 1**).

Table 1. Statistical comparison data in terms of demographic characteristics, sleep time, BAI and PSQI scores between the control group and home caregiver participants.

	Home caregivers	Control group	P
Sleep efficiency (%) (median [min - max])	100 [71 - 100]	100 [92 - 100]	*0.005**
Duration of sleep (hour) (median [min - max])	7 [5 - 8]	8 [6 - 9]	*<0.001**
BAI scores (median [min - max])	16 [4 - 39]	5 [0 - 7]	*0.002**
No anxiety **Mild-level anxiety** **Moderate-level anxiety** **Severe-level anxiety**	11 (15.1) 24 (32.9) 22 (30.1) 16 (21.9)	73 (100.0) 0 (0.0) 0 (0.0) 0 (0.0)	*0.004***
PSQI scores (median [min - max])	7 [3 - 14]	3 [1 – 7]	*0.011**
Healthy sleep quality **Bad sleep quality**	27 (37.0) 46 (63.0)	58 (79.4) 15 (20.6)	*0.021***
Educational Level **Primary school** **High school** **University**	 48 (65.8%) 25 (34.2%) 0	 45 (61.6%) 20 (27.4%) 8 (11%)	>0.05**
Gender **Male** **Female**	 3 (4.1%) 70 (95.9%)	 8 (10.9%) 65 (89.1%)	>0.05**
Age (mean± sd)	50.02 ± 11.05	52.110 ± 9.02	>0.05**

PSQI: *Pittsburg sleep quality index* ***BAI:*** *Beck anxiety inventory* *Mann-Whitney U test **Chi-square test

A statistically significant relationship was found between PSQI and BAI scores of the home care providers ($p < 0.001$). A positive correlation was found between PSQI and BAI scores ($r = 0.623$) (**Figure 1**).

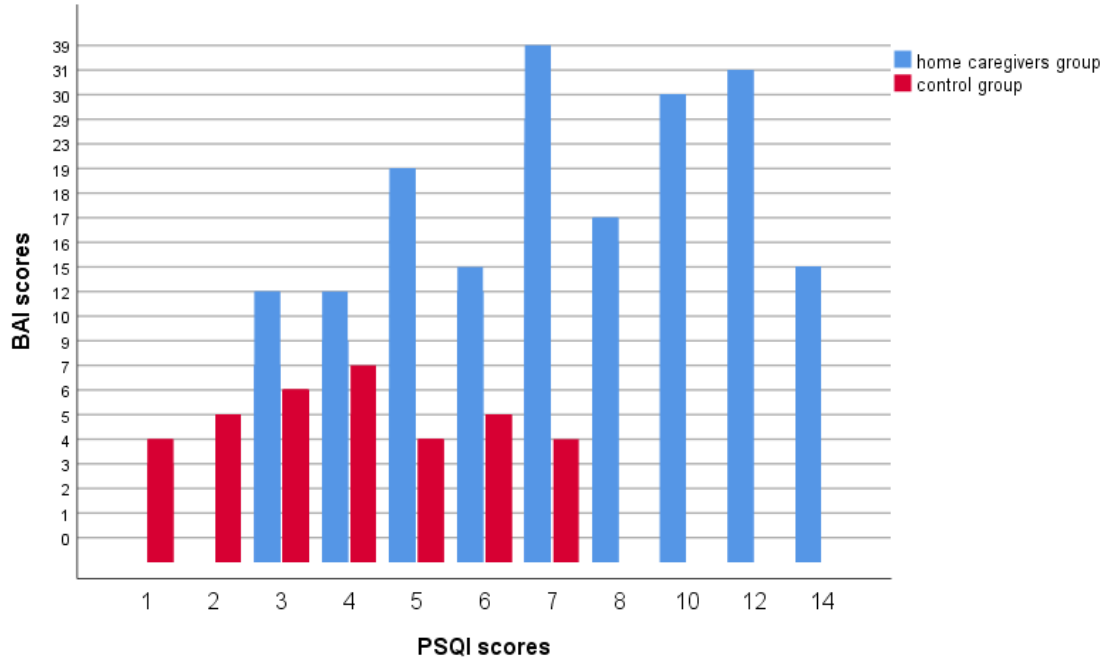

Figure 1. Mean BAI scores and PSQI scores of home caregiver participants and control group
PSQI: *Pittsburg sleep quality index* ***BAI:*** *Beck anxiety inventory*

No statistically significant differences were found between the duration of home care provided for the patients and their PSQI scores ($p > 0.05$). In the evaluation between duration of home care and BAI; any significant differences were not observed between those who provide home care for 1-2, and 3-4 years ($p > 0.050$). However, significant differences were found between those who provided home care for 1-2 , and for 5 years or more, and also those who provided care for 3-4 years and for 5 years or more regarding BAI scores ($p = 0.016$, $p = 0.023$) ($p < 0.050$) (**Table 2**).

Table 2. Relationship between PSQI and BAI scores and home care duration.

	N	PSQI scores (mean± sd)	BAI scores (mean± sd)
1-2 years[a]	21 (28.8%)	6.90±2.98	12.67±6.50
3-4 years[b]	18 (24.7%)	6.28±2.65	13.11±6.53
5 years and over[c]	34 (46.6%)	7.09±2.61	18.82±9.84
P*		>0.05	*0.016*[a-b] *0.023*[b-c]

PSQI: *Pittsburg sleep quality index* ***BAI:*** *Beck anxiety inventory* *Mann-Whitney U test

Any significant correlation was not found out between PSQI scores and the number of chronic diseases (single or multiple diseases) with home care patients. ($p = 0.730$, $p > 0.05$). When evaluated with BAI scores, a statistically significant relationship was detected ($p = 0.037$, $p < 0.05$). It was observed that if the home care patient had more than one disease, the caregiver's anxiety level increased. Any statistically significant relationship was not found between PSQI and BAI scores, and dependency levels of home care patients (fully or semi-dependent) ($p = 0.427$, $p = 0.440$) ($p > 0.05$).

DISCUSSION

In a study conducted in our country, the average age of home care patients was 74, while the average age of caregivers was 42 years.[17] In a study conducted in Singapore, the average age of the patients was 88, while the average age of the caregivers was 59 years.[18] Our study results were similar to the results of other studies which shows us that both patients and those who care for them are not very young. Considering their age, many caregivers have additional illnesses and are both concerned with the care of the patient and also trying to protect their health. This fact also led to the conclusion that special attention should be paid to caregivers about their health.

In our study, 95.9% of the caregivers were women. Studies have shown that most of the caregivers were women.[19, 20] We think that men are at the forefront of work outside the home, and they are in the background when it comes to home or patient care. It is also interesting that men do not feel

primary responsibility for the patient or elderly care and that our society welcomes this condition naturally. When we evaluate the education levels of caregivers, studies have shown that they are mostly primary and secondary school graduates.[19] The results of our study are similar. University graduates or employees are often in the background for providing care and receive help from someone else, paid or unpaid. People place advertisements in job seekers column for patient care and contribute to family budgets by working both in our country and in the world recently.

Studies have shown that the wage increases of caregivers are higher than the general society. It has been emphasized that the higher wages are related to patient care being a difficult task and so every effort was made to retain the caregiver.[21] In this study we conducted, caregivers were family members. We have not made a comparison between paid caregivers and family members.

In studies, stress is higher in caregivers as the duration of care increases.[22,23] In a different study, it was found that BAI scores increased as the time to provide care increased.[3] Similarly, in our study, as the time to provide care increased, the BAI scores were higher. However, care burden and stress were not evaluated in our study. It was observed that the burden and anxiety levels of the caregivers increased with increasing time. In a study, a strong positive correlation was detected between PSQI scores, anxiety, and depression in caregivers of cancer patients. However, the effects of time spent by individuals for home care time or whether the patient was full or semi-dependent were not investigated in this study.[24] In our study, a statistically significant difference was not detected in PSQI scores as the time of care increased. We have reached the conclusion that prolonging home care increases anxiety levels and has no significant effect on sleep. We can think that caregivers develop sleep tolerance and therefore prolonged home care does not affect sleep quality. We also think that this issue should be supported by other studies.

Ay et al. evaluated the patients' full or semi-dependent status and the caregivers' BAI scores and any significant relationship was not found.[25] In a study conducted in caregivers providing care for cancer patients, it was concluded that the risk of anxiety, and depression increased and sleep quality was affected.[24] Whether the patient was fully or partially dependent did not have an effect on anxiety levels in our study. However, when we evaluated in comparison with our control group who did not have home care patients, a significant relationship was found between them. The reason for this lack of correlation is that the presence of a patient in need of home care causes the caregiver to experience anxiety. We think that whether the patient is fully or partially dependent did not effect the anxiety level of the caregiver. In our study, similarly when we evaluated the sleep quality of the caregiver, whether the patient is fully or partially dependent did not affect the sleep quality of the caregiver. However, when we evaluated our caregivers and the control group, we found out that sleep quality was significantly affected in the former group. Poor sleep quality of caregivers is a condition affecting both them and the patients. Healthcare professionals providing home care services should also focus on caregivers. We know that the primary duty of the health-care provider is home care patients. But we should not ignore the health of the caregiver.

Strengths and Limitations

We can say that the strength of our study is the evaluation of the patient's semi or full dependence and the sleep quality of the caregiver. The weaknesses of our study are that the socioeconomic levels of the caregivers and the status of relationship of the caregivers with the patient were not evaluated.

CONCLUSION

In conclusion, health expresses a state of complete physical, spiritual, and social well-being. Home care services generally focus on the patient. However, family physicians should evaluate the caregivers with the same sensitivity and respond to their needs. We found out that as the sleep quality of caregivers worsened, their anxiety levels increased. Poor sleep quality affects physical condition, work performance, and mood of an individual.

It is evident that it is difficult to look after a patient who has a chronic disease or needs care every day. If our goal as family physicians is to improve the quality of life of both the patient and the caregiver, sleep is another issue that we cannot ignore. One should be much more sensitive about sleep disorders, and early measures should be taken when necessary. In addition, caregivers should be guided and we should warn them to care about this issue.

Conflicts of interest: The authors declare that they have no conflict of interest.

Financial disclosures: None

Acknowledgements: We would like to thank Bolu Abant İzzet Baysal University, Faculty of Medicine, Scientific Research Support Unit for the statistical analysis of the study.

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