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Research Article

THE EFFECT OF PEER EDUCATION ON SLEEP HYGIENE ON SLEEP QUALITY AND PSYCHOLOGICAL RESILIENCE IN UNIVERSITY STUDENTS LIVING IN DORMITORIES

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Abstract: *This study was conducted to examine the effect of peer education on sleep hygiene sleep quality and psychological resilience in university students living in dormitories. In the study, a quasi-experimental method with a pretest-posttest control group was used. 240 university students staying at Akyazı Credit and Dormitories Institution in Akyazı district of Sakarya province participated in the study. Half of the students (n=120) formed the intervention group and the other half (n=120) formed the control group. Before the study, 20 students were given sleep hygiene training by the research team. The training group provided peer education to the intervention group on sleep hygiene. No intervention was made in the control group. Student identification forms, Sleep Hygiene Index, Pittsburgh Sleep Quality Index, and Brief Psychological Resilience Scale were used as data collection tools. There was no statistically significant difference between the Sleep Hygiene Index and Brief Psychological Resilience Scale score averages of the intervention and control group students included in the study at the beginning and the last interview ($p>0.05$). However, it was determined that there was an improvement in the sleep hygiene and psychological resilience levels of the students in the intervention group ($p<0.05$). In terms of the Pittsburgh Sleep Quality Index, it was observed that the general and subscale mean scores of both groups were similar at the beginning and the last interview ($p>0.05$). In addition, it was determined that the intervention group had a significant improvement in subjective sleep quality and sleep latency, which are sub-dimensions of the Pittsburgh Sleep Quality Index ($p<0.05$). In the control group, a worsening of subjective sleep quality and sleep disturbance and an improvement in sleep latency were detected at the last interview ($p<0.05$). In the study, it was observed that sleep hygiene education provided through peer education partially positively affected the sleep quality and psychological resilience of university students living in dormitories. It is recommended that sleep hygiene training be provided at certain periods for students living in dormitories and that the peer education method be disseminated.*

Keywords: *Student, Dormitory, Sleep Quality, Peer Education*

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1. Introduction

Sleep quality is expressed as individuals feeling fit and ready for the new day after waking up from sleep, and it is important for protecting and maintaining physical and psychological health [1,2]. Compliance with sleep hygiene is necessary for sleep quality. Sleep hygiene is defined as the principles and practices that improve sleep quality. Regulations in daily practices, habits, and environmental factors necessary to improve sleep quality throughout the night are considered within the scope of sleep hygiene [3,4]. In this context, sleep hygiene includes behaviors that facilitate sleep, such as regular

exercise, maintaining a regular sleep/wake schedule, and avoiding behaviors that hurt sleep, such as smoking, drinking alcohol or caffeine in the evening, and daytime napping [5].

Failure to ensure sleep quality due to inadequate sleep hygiene may disrupt individuals' daily life activities [6]. Developing and ensuring sleep hygiene, which is an important component of a healthy lifestyle, is an effective practice in terms of improving sleep quality [7]. Sleep hygiene education is widely used as a coping strategy for sleep disorders [3,4].

University life can pave the way for sleep disorders due to factors such as students' freedom to choose their bedtime and increased time spent on extracurricular activities [8]. Similarly, living in a separate environment from the home life and family that students are used to, and living in dormitories, where they start living with people they do not know, can cause sleep disorders. Sleep quality and protection of physiological and psychological health in university students are very important in terms of increasing academic productivity [6]. When the literature is examined, it is known that sleep disorders are common among university students and their sleep quality is not good in studies conducted in Turkey [1,2,9-12]. However, studies have shown that sleep quality has a positive relationship with academic success and psychological health in university students [1,7,13,14]. It is negatively related to substance use [15]. For this reason, it is important to provide sleep hygiene training to improve sleep quality in university students [5].

One of the approaches adopted in addition to formal education in teaching healthy lifestyle behaviors to university students is the peer education model. Peer education is defined as all informal or programmed educational activities carried out together by young people who are willing to receive education, aiming at their development in terms of knowledge, attitude, belief, skills, and awareness of protecting their health [16]. In other words, peer education is the formal or informal education activities of a peer educator (peer counselor), who has similar characteristics such as age, education level, profession, and interests, to provide knowledge, skills, attitudes, and behaviors regarding their health to their peers (peer learners). It is stated as developing, educating, and motivating children to take responsibility for their learning/care/health [17]. Peer education is a cost-effective, public health-strengthening practice that facilitates communication with individuals who interact socially with each other, have equal status, and have similar attitudes and behaviors [18]. In peer education, peers do not have a position to reward or punish each other, use similar language, and influence each other, creating a suitable learning environment [19]. It is stated in the literature that peer education benefits university students in various areas [20-22].

It is important to have high sleep quality to protect and maintain the physical and psychological health of university students who will serve society in the future. Applying sleep hygiene education to university students through peer education, which is widely used today, can contribute to improving sleep quality. It is thought that this project will reveal the effectiveness of peer education in ensuring sleep quality in university students living in dormitories, and if its effectiveness is determined, it will guide educators and contribute to the literature in terms of disseminating sleep hygiene practices through similar training in university students living in dormitories in Turkey. In this context, the hypotheses of the study are as follows:

H_1: Peer education positively affects the sleep quality of university students living in dormitories.

H_2: Peer education increases the psychological resilience level of university students living in dormitories.

2. Materials and Methods

2.1. Research Type

A semi-experimental method with a pretest-posttest control group was used in the research.

2.2. Population and Sample

The population of the research consisted of university students staying in the student dormitory affiliated with the Credit and Dormitories Institution in the Akyazı district of Sakarya province between 22 September and 21 December 2023. This dormitory has a capacity of 556 beds and consists of two blocks. In the group whose population number is known, the sample calculation was made so that the number of samples was at least 227, according to the sample calculation formula. In this context, 120 students staying in one block of the dormitory where the research was conducted formed the intervention group, 120 students staying in the other block formed the control group, and 240 students were included in the study. However, the inclusion criteria for the study are; Agreeing to participate in the study, not using antidepressant medication that will affect sleep patterns, and completing the data collection forms completely.

2.3. Data Collection Tools

Data were obtained using the student identification form, Sleep Hygiene Index, Pittsburgh Sleep Quality Index, and Brief Psychological Resilience Scale.

The student identification form, created by the researchers contains 20 questions to determine students' personal information (age, gender, height, weight, health status, etc.) and sleeping habits (number of people staying in the room, consumption of caffeinated beverages in the evening, time spent on the screen in the last hour of the bed before going to sleep, etc.) [1,2,5,7,13].

Sleep Hygiene Index, Mastin et al [23]. Turkish validity and reliability were determined by Özdemir et al [24]. The index consists of 13 questions and is a 5-point Likert type. The index aims to evaluate the presence of sleep hygiene by questioning how often the participant performs the sleep behaviors that constitute sleep hygiene. Scores range from 13 to 65, with higher scores indicating worse sleep hygiene status of the participant. The Cronbach Alpha value of the index was calculated as 0.70 and was found to be valid and reliable. In this study, the Cronbach alpha value of the scale was determined as 0.74.

Pittsburgh Sleep Quality Index was developed by Buysse et al [25]. It is a scale that provides information about sleep quality and the type and severity of sleep disturbance in the last month. In the scale consisting of 24 questions in total, 19 questions are answered by the person, and 5 questions are filled in by the person's bedmate. While the questions answered by the person are evaluated, the questions answered by the bedmate are not evaluated. With 19 questions answered by the person, 7 sub-dimensions are evaluated: subjective sleep quality, sleep latency (delay), sleep duration, habitual sleep efficiency, sleep disorder, use of sleeping pills, and daytime dysfunction. Each item on the scale receives a value between 0 (no distress) and 3 (serious distress). The sum of the scores for the seven subscales gives the total scale score. The score of each subscale varies between 0 and 3. The total scale score varies between 0-21. The sleep quality of those with a total score of 5 or less is considered "good". The Turkish validity and reliability study of the scale was conducted by Ağargün et al., and the internal consistency coefficient was reported as 0.80 [26]. In this study, the Cronbach alpha value of the scale was determined as 0.74.

The brief Psychological Resilience Scale was developed by Smith et al [27], and adapted into Turkish by Doğan [28]. The scale is one-dimensional and has a 5-point Likert-type answer key. The scale consists of 6 items. In the Turkish adaptation of the scale, the Cronbach alpha internal consistency coefficient was found to be 0.83. Items 2, 4, and 6 in the scale are reverse coded. Scores between 6 and 30 points can be obtained from the scale. High scores indicate a high level of psychological resilience. In this study, the Cronbach alpha value of the scale was determined as 0.79.

2.4. Application of Research

The research was implemented in two stages. The first phase includes the implementation of sleep hygiene educator training, and the second phase includes the implementation of peer education on sleep hygiene. Sleep hygiene trainer training aims to train peer trainers who can provide information to dormitory students about the impact of sleep quality on holistic health. For this purpose, firstly, the research team prepared a 30-minute “Sleep Hygiene Education Presentation” in the form of a Power Point presentation in line with the literature and brochures reflecting the education content [4-8] . Expert opinions were received from at least five academicians who are experts in their fields regarding the prepared presentations and brochures. The final presentation was given to the peer educators by the research team in approximately 30 minutes. In this regard, the following were taken into consideration in the selection of peer educators: Peer educators were selected among students who lived in the same block as the intervention group in the student dormitory where the research would be conducted, who agreed to participate in the study, who did not have auditory or visual communication disabilities, and who had wide social relations and circle of friends. The peer educator group consisted of 20 students, 10 female students, and 10 male students.

Peer educator training was carried out by the researchers in a face-to-face manner with a single group of 20 students during a time when the students did not have classes. Within the scope of the training, in addition to sleep hygiene, information was also provided on protecting the confidentiality of the data and participants in the study. The training was given in the classrooms of Sakarya University of Applied Sciences, Faculty of Health Sciences, Department of Nursing.

Peer educators who participated in the peer educator training were asked to interact with their peers while staying in a block of the student dormitory and share the information given to them with their friends one-on-one or by forming groups for two weeks. The interacted group constituted the intervention group.

Peer educators administered data forms including the " Student Identification Form", "Sleep Hygiene Index", "Pittsburgh Sleep Quality Index" and "Brief Psychological Resilience Scale" to the intervention group before and three months after the interaction. Individually completed data forms were immediately retrieved.

The same data collection forms were filled out in the non-interactive control group at the same times as in the intervention group. It took approximately 15-20 minutes to fill out the data forms.

2.5. Research Variables

Dependent Variables: Students' sleeping habits, psychological resilience levels
Independent Variables: Peer education for sleep hygiene

2.6. Ethical considerations

Before data collection, written approval was taken from the ethics committee of Sakarya University of Applied Sciences (Decision date and number: 23/12/2021-17) and the institution where the study was conducted. The purpose, methods and benefits of the study were explained to both peer educators and all students who were trained, and their willingness to participate in the study was asked and their consent was obtained. Since individual rights must be protected when human subjects are used in the research, the "Informed Consent" condition was fulfilled in line with the "Willingness and Voluntariness" principle. The study complied with the Helsinki Declaration.

2.7. Evaluation of Data

The Statistical Package for the Social Sciences (SPSS) 29.0 program was used to evaluate the data obtained in the study. In the study, in addition to descriptive statistical methods (mean, standard

deviation), the Student's t-test was used for comparisons of normally distributed parameters between two groups for quantitative data, the Paired Sample t-test was used for intragroup comparisons, the chi-square test, and Fisher's Exact chi-square test were used for comparison of qualitative data. In statistical evaluations, significance was accepted at $p<0.05$.

3. Results

When the descriptive characteristics of the intervention group and control group students included in the study were compared, they were found to be similar ($p>0.05$). However, 12.5% of the students in the intervention group and 10% of the students in the control group had a chronic disease diagnosed by a physician. Additionally, 16.7% of the students in the intervention group and 29.2% of the students in the control group still smoke (Table 1).

Table 1. Comparison of descriptive characteristics of intervention and control group students (N=240)

	Intervention Group (n=120)		**Control Group (n=120)**		**Test; p**
Characteristics	**M±SD**		**M±SD**		
Age (year)	19.20±0.85 (Min=17; Max=21)		19.95±1.37 (Min=17; Max=22)		t=-2.095; p=0.074
	n	***%***	***n***	***%***	
Gender					
Female	73	60.8	76	63.3	χ^2= 0.159; p=0.690
Male	47	39.2	44	36.7	
Section					
Nursing	36	30.0	48	40.0	χ^2= 12.334; p=0.065
Physical therapy and	35	29.2	26	21.7	
Physiotherapy	12	10.0	11	9.2	
Healthcare Management	11	9.2	21	17.5	
Management of Health	6	5.0	1	0.8	
First and Emergency Aid	6	5.0	8	6.7	
Medical Laboratory Techniques	11	9.2	4	3.3	
Health Tourism Management	3	2.5	1	0.8	
Class					
1	78	65.0	66	55.0	χ^2= 3.123; p=0.210
2	34	28.3	40	33.3	
3	8	6.7	14	11.7	
Body Mass Index category					
Normal weight	103	85.8	102	85.0	χ^2= 0.033; p=0.855
Overweight or obese	17	14.2	18	15.0	
General health assessment					
Good	61	50.8	64	53.3	χ^2= 0.221; p=0.895
Middle	54	45.0	52	43.3	
Bad	5	4.2	4	3.3	
Presence of chronic disease					
Yes	15	12.5	12	10.0	χ^2= 0.376; p=0.540
No	105	87.5	108	90.0	

Table 1 continued.

	Intervention Group (n=120)		Control Group (n=120)		Test; p
	n	***%***	***n***	***%***	
Presence of constantly used					
Yes	11	9.2	15	12.5	χ^2= 0.609; p=0.406
No	109	90.8	105	87.5	
Smoking status					
Yes	20	16.7	35	29.2	χ^2= 5.871; p=0.057
Usage period (Mean±SD)	0.47±1.27		0.95±1.84		
Usage amount (Mean±SD)	3.31±3.98		4.29±3.94		
Never drank	93	77.5	76	63.3	
No	7	5.8	9	7.5	
Being dissatisfied with the department you					
Yes	79	65.8	72	60.0	χ^2= 0.877; p=0.645
Partially	36	30.0	42	35.0	
No	5	4.2	6	5.0	
Working a job outside of school					
Yes	4	3.3	8	6.7	χ^2= 1.404; p=0.375
No	116	96.7	112	93.3	
Academic grade point average (Mean±SD) (4-point system)	2.61±0.64		2.44±0.44		t=0.759; p=0.449
Academic success evaluation					
Very good	16	14.5	12	10.2	χ^2= 6.385; p=0.172
Good	35	31.8	33	28.2	
Middle	55	50.0	65	55.6	
Bad	3	2.7	6	5.1	
Too bad	1	0.9	1	0.9	

t: Student t-test; χ2: Chi-square test

When the sleep-related characteristics of the intervention group and control group students included in the study were compared, it was determined that they were similar (p>0.05). It is a striking finding that 85% of the students in the intervention group and 75% of the students in the control group had the habit of using screens (computer, television, phone, tablet) in bed in the last hour before sleeping. Additionally, 28.3% of the students in the intervention group and 21.7% of the students in the control group stated that they fell asleep during classes (Table 2).

Table 2. Comparison of sleep-related characteristics of intervention and control group students

	Intervention Group (n=120)		Control Group (n=120)		Test; p
Characteristics	**n**	**%**	**n**	**%**	
Going to bed at the same time in the evening					
Yes	14	11.6	11	9.2	χ^2= 1.148; p=0.563
Sometimes	65	54.2	73	60.8	
No	41	34.2	36	30.0	
Number of people in the room					
1-4	21	17.6	13	10.8	χ^2= 2.273; p=0.132
5-6	98	82.4	107	89.2	

Table 2 Continued.

	Intervention Group (n=120)		Control Group (n=120)		Test; p
Characteristics	**n**	**%**	**n**	**%**	
Consuming caffeinated drinks in the evening					
Yes	43	36.4	38	31.7	χ^2= 1.773; p=0.621
Sometimes	51	43.2	52	43.3	
No	24	20.3	30	25.0	
Sleepiness during classes					
Yes	34	28.3	26	21.7	χ^2= 1.489; p=0.475
Sometimes	57	47.5	64	53.3	
No	29	24.2	30	25.0	
Using a screen (computer, television, phone, tablet) in bed in the last hour before sleeping					
Yes	102	85.0	90	75.0	χ^2= 4.023; p=0.134
Sometimes	17	14.2	27	22.5	
No	1	0.8	3	2.5	
Presence of a family member with sleep disorders					
Yes	25	21.0	33	27.5	χ^2= 5.241; p=0.263
No	94	79.0	87	72.5	

χ2: Chi-square test

There was no statistically significant difference between the Sleep Hygiene Index average scores of the intervention group and control group students included in the study at the beginning and the last interview (p>0.05). However, in the intra-group comparison, it was determined that the average Sleep Hygiene Index score of the students in the intervention group decreased in the last interview (p<0.05). In the intragroup comparison of the control group, it was found that there was no significant difference (p>0.05) (Table 3).

Table 3. Comparison of the average Sleep Hygiene Index scores of the intervention group at baseline and last interview

Sleep Hygiene Index	***Intervention Group (n=120)***	***Control Group (n=120)***	**[b]Test; p**
	M±SD	**M±SD**	
Baseline	36.81±8.23	36.35±7.92	-1.634; 0.104
Last interview	34.77±6.83	37.62±7.65	-0.787; 0.432
[a]Test; p	2.328; **0.022***	-1.718; 0.088 (**p<0.01**)	

a:Paired Sample t test; b:Student t test; *p<0.05

In the study, it was determined that only 33.3% of the students in the intervention group and 35.8% of the students in the control group had good sleep quality at the beginning. After peer education, there was no statistical difference in sleep quality between intervention and control group students (p>0.05).

In the study, there was no statistically significant difference between the Pittsburgh Sleep Quality Index general and subscale score averages of the intervention group and control group students at the beginning and the last interview (p>0.05). However, in the intra-group comparison, while there was no change in the overall score of the Pittsburgh Sleep Quality Index of the students in the intervention group, it was determined that there was a significant improvement in the sub-dimensions of the scale, subjective sleep quality and sleep latency (p<0.05). In the control group, in the intra-group comparison,

a worsening in subjective sleep quality and sleep disturbance, which are the sub-dimensions of the Pittsburgh Sleep Quality Index, and an improvement in sleep latency were detected (p<0.05) (Table 4).

Table 4. Comparison of the Pittsburgh Sleep Quality Index mean scores of students in the intervention and control groups

Pittsburgh Sleep Quality Index	**Intervention Group (n=120)**		**Control Group (n=120)**		**[b]Test; p**
	M±SD		**M±SD**		
Subjective sleep quality					-1.077; 0.079
Baseline	1.28±0.77		0.29±0.74		-0.166; 0.868
Last interview	0.22±0.45		1.30±0.78		
[a]Test; p	13.706; p<0.001		-10.609; p<0.001 (p<0.01)		
Sleep latency					
Baseline	1.75±0.79		1.74±0.70		0.086; 0.931
Last interview	1.51±0.80		1.50±0.85		0.077; 0.938
[a]Test; p	2.573; 0.011*		2.981; 0.003**		
Sleep duration					
Baseline	0.80±1.33		0.75±1.30		0.294; 0.769
Last interview	0.85±1.35		0.80±1.33		0.288; 0.774
[a]Test; p	-0.332; 0.740		-0.342; 0.157		
Habitual sleep efficiency					
Baseline	1.06±1.33		1.29±1.39		-1.276; 0.203
Last interview	0.93±1.32		1.08±1.35		-0.866; 0.387
[a]Test; p	0.899; 0.370		1.419; 0.159		
Sleep disorder					
Baseline	1.21±0.48		1.26±0.47		-0.906; 0.366
Last interview	1.29±0.55		1.40±0.58		-1.431; 0.154
[a]Test; p	-1.392; 0.166		-2.353; 0.020*		
Use of sleeping pills					
Baseline	0.25±1.07		1.15±1.03		0.733; 0.464
Last interview	0.27±0.62		0.85±0.77		-1.079; 0.065
[a]Test; p	-0.337; 0.743		-1.353; 0.092		
Daytime dysfunction					
Baseline	1.33±0.94		1.35±0.91		0.107; 0.981
Last interview	1.43±0.86		1.37±0.91		0.917; 0.360
[a]Test; p	-1.087; 0.279		-0.098; 0.922		
General					
Baseline	7.56±3.88		7.82±4.19		-0.501; 0.617
Last interview	7.57±3.91		7.83±3.83		-0.518; 0.605
[a]Test; p	0.151; 0.881		-0.176; 0.860		
Sleep Quality					
Baseline	**n**	**%**	**n**	**%**	
Good	40	33.3	43	35.8	χ^2= 4.023; p=0.134
Bad	80	66.7	77	64.2	
Last interview					
Good	44	36.7	39	32.5	χ^2= 0.460; p=0.457
Bad	76	63.3	81	67.5	

a:Paired Sample t test; b:Student t test; χ2:Ki-square test; *****p<0.05; ******p<0.01

There was no statistically significant difference between the Brief Psychological Resilience Scale score averages of the intervention group and control group students included in the study at the beginning and at the last interview (p>0.05). However, in the intra-group comparison, it was determined that the Brief Psychological Resilience Scale average score of the students in the intervention group increased in the last interview (p <0.05). In the intragroup comparison of the control group, it was found that there was no significant difference (p>0.05) (Table 5).

Table 5. Comparison of the Brief Psychological Resilience Scale score averages of the intervention group at the beginning and at the last interview

Brief Psychological Resilience Scale	**Intervention Group (n=120)**	**Control Group (n=120)**	**[b]Test; p**
	M±SD	**M±SD**	
Baseline	18.06±4.65	18.85±4.83	-1.289; 0.199
Last interview	19.28±4.23	18.34±4.45	1.678; 0.095
[a]Test; p	-2.408; **0.018***	1.144; 0.255	

a:Paired Sample t test; b:Student t test; *****p<0.05

Table 5 shows that Brief Psychological Resilience Scale score averages of the intervention group were higher at the last interview and this was statistically different (p<0.05).

4. Discussion

Today, sleep quality is a concept that is emphasized in clinical practices and sleep-related research. This is because sleep-related complaints are quite common, poor sleep quality can be a symptom of many medical diseases, and there is a strong relationship between sleep health and physical and psychological well-being [29]. In this study, the effect of sleep hygiene education given through peer education on the sleep quality and psychological resilience level of university students was evaluated.

In the study, it was determined that 85% of the students in the intervention group and 75% of the students in the control group had the habit of using screens in bed in the last hour before sleeping. In a study, it was found that 64.2% of the students used a mobile phone or tablet in the last hour before going to sleep, and 74.0% used a mobile phone or tablet in bed just before going to sleep [10]. The study finding shows that technological devices commonly used today may affect sleep behaviors.

In the study, the average Sleep Hygiene Index score in the intervention group was 36.81±8.23 at baseline and 34.77±6.83 at the last interview; In the control group, it was found to be 36.35±7.92 at the beginning and 37.62±7.65 at the last interview. In the study of Odabaşıoğlu et al [5], the average score of the Sleep Hygiene Index was found to be 32.74±6.87. The study finding shows that sleep hygiene behaviors in university students are not at the desired level. This finding may be because the students included in the study stayed in rooms with an average of five or six people in the dormitory environment.

In the study, it was determined that there was a significant improvement in the sleep hygiene behaviors of the students in the peer education group, while there was no difference in the control group. In line with the literature reviewed, it has been observed that peer education has a positive effect on students' learning behavior and application of what they have learned. In a study, it was determined that the use of the peer education model in nursing education increased the self-confidence of peer educators and learners and increased the motivation for teaching and learning [30]. In this study, it was seen that peer education can be used to ensure sleep hygiene.

In the study, it was determined that only 33.3% of the students in the intervention group and 35.8% of the students in the control group had good sleep quality before the intervention. However, the student's overall mean score on the Pittsburgh Sleep Quality Index was 7.56±3.88 in the intervention

group at the beginning and 7.57±3.91 at the last interview; In the control group, it was 7.82±4.19 at the beginning and 7.83±3.83 at the last interview. In the study conducted by Aysan et al [11], the average score of the students on a similar scale was determined as 6.15±1.90 and the rate of students with poor sleep quality was found to be 59%. In other studies conducted using a similar scale in Turkey, the average score of the scale was found to be 7.89±2.36 [31], and 6.90±2.4 [12]. In a study conducted with first-year university students studying in the field of health, it was found that 72.2% of the students had poor sleep quality [10]. In a study conducted in Thailand, the prevalence of poor sleep quality among university students was stated as 42.4% [32]. The study, which is consistent with the literature, reveals that there is a need to improve sleep quality among university students.

In the study, it was determined that while there was no change in the overall score of the Pittsburgh Sleep Quality Index of the students in the intervention group, there was a significant improvement in the subjective sleep quality and sleep latency, which are the sub-dimensions of the scale. In the control group, in the intra-group comparison, a worsening in subjective sleep quality and sleep disturbance, which are sub-dimensions of the Pittsburgh Sleep Quality Index, and an improvement in sleep latency were detected. Sleep is a fundamental factor for individuals' health. Not getting enough sleep brings with it many health problems. Poor sleep quality of students causes the stress factor to be unmanageable and can negatively affect both their daily life activities and school success. There are no similar studies in the literature using peer education. However, the study findings show that the peer education model may contribute to improving sleep quality in university students.

In the study, it was determined that there was a significant improvement in the psychological resilience level of the students in the peer education group, while there was no difference in the control group. There is no similar study in the literature. However, a study found that adolescents with type 1 diabetes who had good sleep quality had high levels of psychological resilience [33]. This study is important as it reveals that the sleep quality provided by peer education positively affects not only physical health but also psychological health. It may be possible to instill positive health behaviors among university students through education provided by their peers.

5. Conclusion and Recommendation

According to the study findings, it was observed that the sleep hygiene training provided through peer education partially positively affected the sleep quality and psychological resilience of university students living in dormitories. In this regard, it can be said that the peer education approach may be useful in improving students' sleep hygiene and sleep quality. For this purpose, sleep hygiene training can be provided for students staying in the dormitory at certain periods, students can be encouraged to be peer educators to support each other, and behavioral practices that will support sleep hygiene in the dormitory environment can be created. In addition, it is recommended that peer education programs be made more widespread and research be conducted to increase awareness about sleep hygiene.

Ethical statement:

Before data collection, written approval was taken from the ethics committee of Sakarya University of Applied Sciences (Decision date and number: 23/12/2021-17) and the institution where the study was conducted.

Conflict of interest:

The authors declare no conflict of interest.

Authors' Contributions:

Y. K: Conceptualization, Methodology, Data Collection, Writing - Original draft preparation (%40)

İ. A: Conceptualization, Methodology, Data Collection (%30).

F. T. Y: Conceptualization, Methodology, Formal analysis, Writing - Original draft preparation (%30).

All authors read and approved the final manuscript.

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