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The Effect of Reiki Practice on Stress and Anxiety Level in Nurses: A Randomized Controlled Trial

Reiki Uygulamasının Hemşirelerin Stres ve Kaygı Düzeyine Etkisi: Randomize Kontrollü Bir Çalışma

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ABSTRACT Objective: Nursing is a profession with intense working hours. This intense work schedule can cause anxiety and stress for nurses. Therefore, this study was carried out to examine the effects of reiki application on stress and anxiety levels in nurses. **Material and Methods:** The research was carried out as a quasi-experimental study with pretest and posttest control groups. The research was between May 2021 and September 2022, with nurses actively working in a hospital located in the southeast of Türkiye. A total of 128 nurses who volunteered were included in the study. The participants were divided into 2 groups, 64 to the reiki group and 64 to the control group. Data were collected using the Individual Information Form, Perceived Stress Scale, and Beck Anxiety Inventory. Descriptive statistics, Shapiro-Wilk test of normality, independent samples t-test, Pearson chi-square or Fisher exact test was used. **Results:** In terms of the descriptive characteristics of the nurses, no statistically significant difference was found between the reiki and control groups in terms of gender, marital status, education level, unit of employment, length of service, satisfaction with the profession and age ($p>0.05$). It was found that reiki application reduced the stress and anxiety scores of nurses and the difference between the groups was significant ($p<0.05$). **Conclusion:** It has been observed that the reiki practice applied in nurses effectively reduces their stress and anxiety levels. In line with these results, it can be recommended that the use of reiki as an independent nursing practice should be expanded not only to patients but also to different sample groups such as nurses.

Keywords: Anxiety; nursing; reiki; stress

ÖZET Amaç: Hemşirelik, yoğun çalışma saatleri olan bir meslektir. Bu yoğun çalışma temposu, hemşirelerin kaygı ve stres yaşamasına neden olabilmektedir. Dolayısıyla bu çalışma, reiki uygulamasının hemşirelerde stres ve kaygı düzeylerine etkisini incelenmesi amacıyla yapıldı. **Gereç ve Yöntemler:** Araştırma ön-test ve son-test kontrol gruplu yarı deneysel bir çalışma olarak gerçekleştirilmiştir. Araştırma, Mayıs 2021 ile Eylül 2022 tarihleri arasında, Türkiye'nin güneydoğusunda bulunan bir hastanede aktif olarak görev yapan hemşireler ile gerçekleştirildi. Araştırmaya gönüllü olan toplam 128 hemşire dâhil edildi. Katılımcılar 64'ü reiki grubu ve 64'ü kontrol grubu olmak üzere 2 gruba ayrıldı. Veriler Bireysel Bilgi Formu, Algılanan Stres Ölçeği ve Beck Kaygı Envanteri kullanılarak toplanmıştır. Tanımlayıcı istatistikler, Shapiro Wilk normallik testi, bağımsız örnekler t-testi, Pearson kikare veya Fisher kesin testi kullanıldı. **Bulgular:** Hemşirelerin, tanımlayıcı özellikleri açısından reiki ve kontrol grubu arasında cinsiyet, medeni durum, eğitim düzeyi, çalışılan birim, çalışma süresi, meslekten memnuniyet durumu ve yaş açısından istatistiksel olarak anlamlı fark saptanmamıştır ($p>0.05$). Reiki uygulaması, hemşirelerin stres ve kaygı puanlarını azalttığı ve gruplar arası farkın istatistiksel olarak önemli olduğunu saptamıştır ($p<0.05$). **Sonuç:** Reiki uygulamasının hemşirelerin stres ve anksiyete düzeylerini azaltmada etkili olduğu belirlendi. Bu sonuçlar doğrultusunda, reiki uygulaması bağımsız bir hemşirelik uygulaması olarak sadece hastalara yönelik değil, hemşireler gibi farklı örneklem gruplarında da kullanımının yaygınlaştırılması önerilebilir.

Anahtar Kelimeler: Kaygı; hemşirelik; reiki; stres

Stress affects individuals' behavior, work efficiency, and relationships with other people. The phenomenon of stress often comes to the fore both in daily life and in working life. In particular, people have to deal with the uncertainties that arise in new ways of work life. Individuals in many occupational

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groups may experience stress with the changes in this working process. One of the occupational groups in which stress and its effects are most common is the nursing profession.[1,2] Nurses generally experience high levels of occupational stress, both physically and psychologically.[2,3] Occupational stress in nursing is a global concern. Many factors, such as high workload, lack of resources, role ambiguity and conflict, heavy responsibility and time pressure, manager-subordinate relationship, the high number of shifts, and inability to spare enough time for private life, cause stress.[3,4] Studies have shown that nurses experience moderate or high levels of stress.[5,6] In addition, nurses can experience anxiety along with stress.[7]

Nurses who have harsh working conditions face many physical and psychological difficulties in their work environments. This situation increases the anxiety levels of nurses who have to cope with many difficulties. It causes nurses experiencing anxiety to experience emotional confusion and make wrong organizational decisions. A study found that most nurses experience high levels of anxiety.[7] In this respect, methods such as relaxation techniques, reiki, aromatherapy, and music therapy, are used to reduce the stress and anxiety intensity experienced by nurses.[2,8-11]

Reiki, one of the energy therapies, is a treatment method that is effective in maintaining and increasing well-being, ensuring healthy aging, and some health deviation improvement.[12,13] Reiki aims to regulate and balance the energy flow that is found naturally in the human body.[14] Reiki is a method that has no side effects, is economical and easy to apply. Reiki application aims to stimulate the autonomic nervous system and eliminate the blockage and negative energy blockages in blood and lymph circulation. There are a total of seven chakras in this energy: root, sacral, solar plexus, heart, throat, forehead-eye and crown-hill chakras.[12,14] This application lasts an average of 30-60 minutes by touching each chakra for 3-5 minutes, by close contact, or by sending from a distance.[13,14] Reiki practice is known to increase the energy level in the body.[9] In the study on nurses diagnosed with burnout syndrome, Díaz-Rodríguez et al. found that after a 30-minute single session of reiki, nurses had a decrease in diastolic blood pressure.[10]

Stress adversely affects employees' cognitive and affective productivity, causing absenteeism, leaving the job, and poor performance in the organization. Anxiety, on the other hand, causes employees to feel inadequate and have difficulty in making decisions as a result of refraining from misbehaving in the face of work.[3-5,7] In this case, effective coping methods with stress and anxiety gain importance. Reviews demonstrated that most investigations on nurses are descriptive.[1,3-5] In the literature study, very few reiki applications were found for nurses. Twenty minutes for four days during the pandemic period for healthcare professionals, 37.5% of whom were nurses.[14] It has been found that remote reiki application reduces the stress and anxiety levels of the participants. It was stated that the data obtained from a small pilot study should support the training of nurses in the application of reiki to reduce work-related stress.[9] In this regard, it is thought that it would be useful to investigate the effect of reiki application on coping with the intense stress and anxiety experienced by nurses. Therefore, this study was conducted to examine the effect of reiki application on stress and anxiety levels in nurses.

Key Points

- After the reiki application, the stress and anxiety of the nurses decreased.
- Reiki application is an effective method for nurses who experience stress and anxiety.

Study Hypotheses

H_0: The effect of reiki practice on the stress of nurses.

H_1: The effect of reiki practice on the anxiety in nurses.

MATERIAL AND METHODS

STUDY DESIGN

It is a quasi-experimental, pre-posttest control group study recorded at ClinicalTrials.gov under the number NCT05648578.

POPULATION AND SAMPLE OF THE RESEARCH

The research was carried out between May 2021 and September 2022 in a hospital in southeast Türkiye.

The hospital is the only hospital in the city and has a total of 450 beds and seven intensive care units. A total of 750 nurses work in the hospital. The research universe consists of nurses actively working in a hospital in a province in the southeast of Türkiye. The sample consists of nurses who meet the research criteria in the study. The sample size of this study was calculated in the G*Power Version 3.1.9.2 (Franz Foul, Universitat Kiel, Germany) program according to the hypothesis of "H0: The pretest and posttest scale score differences are not different according to the groups". The medium effect size suggested by Cohen was used as the effect size.[15] In two-way analysis of variance in repeated measurements, effect size=0.161, statistical power=95%, type error=5%, number of groups=2 and number of measurements=2. Therefore, the sample size was determined as 128 and 64 for each group (Figure 1). Nurses who volunteered, worked actively and had not practiced reiki before were included in the study. Nurses who had previously practiced reiki and did not want to participate in the study were excluded from the study.

IMPLEMENTATION

The reiki was carried out by the researcher, who received first and second-level training. The researcher received both levels of reiki training in 2016 and has a 6-year reiki experience. The purpose of reiki practice is to maintain the energy flow and heal by placing the practitioner's hands on the chakra areas of the participants. Reiki practice phases are:

- The researcher informed the participants about the application before starting the application.
- Due to the intense working conditions of the participants during working hours, the reiki practice was applied after working hours.
- Before starting the application, participants were asked to remove metal objects such as watches, rings, and bracelets.
- The reiki was performed in a suitable environment where the participants felt comfortable.
- Then, starting from above, the researcher applied it to the chakra areas (crown, throat, forehead,

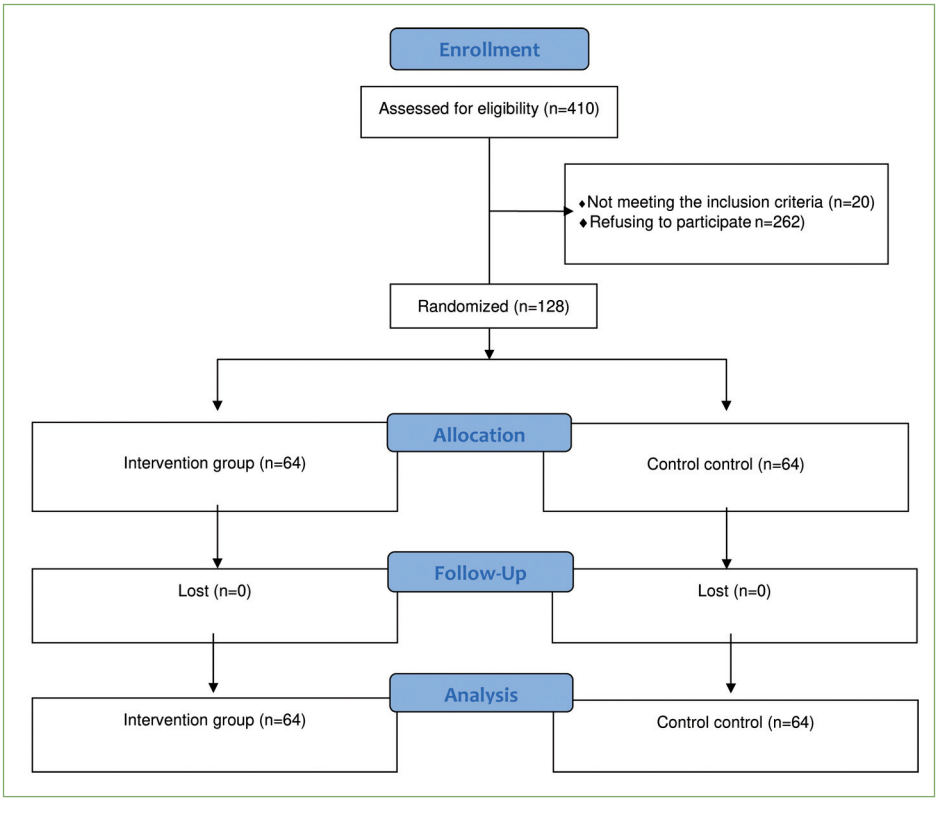

FIGURE 1: Study design.

heart, solar plexus, sacral, and root chakras) by positioning each hand on top of each chakra for 3-5 minutes.

■ Four reiki sessions were performed twice a week, each lasting 25-35 minutes. The days of the week were determined by lot.

DATA COLLECTION

Face-to-face interview method was used to collect data. Implementation of the questionnaires and scale questions took 10-15 minutes for each participant, on average.

Pretest data collection: Participants were informed about the research and written consent was obtained. Then, Individual Descriptive Questionnaire, Perceived Stress Scale (PSS), and Beck Anxiety Inventory (BAI) were applied.

Post-test data collection: Participants in the application group received reiki twice a week for 2 weeks. The Individual Descriptive Questionnaire, PSS, and BAI were administered to the control group two weeks later without any intervention.

DATA COLLECTION TOOLS

Individual Descriptive Questionnaire, PSS and BAI were utilized as data collection tools. The individual introduction questionnaire consists of 7 questions that include the socio-demographic data of the participants.

Individual Descriptive Questionnaire: This survey was prepared from literature review.[16-18] It consists of questions such as participants' age, marital status, gender, education level, and working hours.

Perceived Stress Scale (PSS): The scale, consisting of 14 items, was developed by Cohen et al.[19] The Turkish validity and reliability conducted by Eskin et al.[20] The scale is a 5-point Likert-type scale. It is consists of two subscales, perception of low self-esteem (4, 5, 6, 8, 9, 10, 13) and perception of stress/discomfort (1, 2, 3, 7, 11, 12, 14). Items 4, 5, 6, 7, 9, 10 and 13 of the scale are scored reversely. Ranges from 0 to 56 points in total. As the score increases, the perception of stress also increases. The Cronbach alpha coefficient of the Turkish version of the scale was 0.84.[20] The calculated Cronbach alpha value was between 0.74 and 0.89 in this study.

Beck Anxiety Inventory (BAI): The scale was developed by Beck et al. in 1988.[21] The Turkish validity and reliability study were performed by Ulusoy et al. in 1993.[22] The scale is 4-point Likert type and consists of 21 items. The scale has a total score range of 0-63. 8-15 points indicate low stress, 16-25 points indicate medium and 26-63 points indicate high anxiety. As the score increases, individuals' perception of anxiety increases. The Cronbach alpha calculated by Ulusoy et al. was 0.93.[22] Cronbach alpha was between 0.80 and 0.95 for his study.

THE ETHICAL ASPECT OF RESEARCH

Ethics committee approval of the research (date: March 1, 2021; no: 1954) was received from Siirt University Non-Interventional Clinical Research Ethics Committee. Permission was obtained from the hospital where the research was conducted. Additionally, verbal and written consents were obtained from participants who agreed to participate in the study. The principles of the Declaration of Helsinki have been complied with. Clinical Trials Identifier: NCT05648578.

DATA ANALYSIS

Data were used in the statistical package program of IBM SPSS 26 (USA). Descriptive statistics explained. Shapiro-Wilk test of normality was used to calculate the normal distribution of the data of numerical variables. For the first and second measurement comparisons of the scale scores of the groups, two-way analysis of variance was used for repeated measurements. Bonferroni test was applied for all pairwise comparisons. The age groups were compared using an independent samples t-test. Fisher exact test or Pearson chi-square was used to comparing the groups with categorical variables. A $p<0.05$ value was considered in all comparisons.

RESULTS

There is no significant difference between the groups according to their descriptive characteristics (marital status, gender, education level, working time, work unit, job satisfaction and age) ($p>0.05$) (Table 1).

TABLE 1: Distribution of participants by descriptive characteristics and comparison of parameters between groups.

	Reiki group n=64		Control group n=64			
Control variable	**n**	**%**	**n**	**%**	**Test value**	**p value**
Gender						
Female	43	67.2	45	70.3	0.145†	0.849
Male	21	32.8	19	29.7		
Marital status						
Married	31	48.4	23	35.9	2.050†	0.210
Single	33	51.6	41	64.1		
Education level						
Associate degree	9	14.1	9	14.1		
Undergraduate	47	73.4	48	75.0	0.135†	>0.999
Graduate	8	12.5	7	10.9		
Work unit						
Internal clinics	28	43.8	24	37.5		
Surgical clinics	22	34.4	21	32.8	1.243†	0.746
Intensive care	9	14.1	11	17.2		
Others (polyclinics, emergency service…etc.)	5	7.8	8	12.5		
Working years						
0-5 years	10	15.6	13	20.3		
6-10 years	19	29.7	23	35.9		
11-15 years	18	28.1	14	21.9	2.883†	0.587
16-20 years	10	15.6	11	17.2		
21 years and above	7	10.9	3	4.7		
Job satisfaction						
Yes	10	15.6	10	15.6	0.039†	>0.999
No	20	31.3	21	32.8		
Partly	34	53.1	33	51.6		
Age	$\bar{X}$±SD		$\bar{X}$±SD			
	31.3±6.93		29.8±7.6		1.090‡	0.278

SD: Standard deviation; †Pearson chi-square or Fisher exact test, ‡Independent samples t-test.

Statistically, low self-esteem perception scores of post-test for the reiki group were lower than the control group (p=0.035). The difference between pretest and posttest low self-esteem perception scores was statistically different (p=0.004). According to the groups, the effect size between pre-test and post-test scores was 0.259, and the statistical power was 0.826 (Table 2).

According to the intra-group comparisons, the post-test scores of the reiki group were statistically lower than the pre-test scores (p<0.001). The difference in pretest and posttest stress/discomfort perception scores between groups is statistically different (p<0.001). The effect size was 0.320, and the statistical power was 0.945 for the difference between the pretest and posttest scores according to the groups (Table 2).

The total stress scores of the post-test of the reiki group were statistically lower than the control group (p=0.026). According to in-group comparisons, the post-test total stress scores of the reiki group were statistically lower than the pre-test scores (p<0.001). Considering the differences in the pre-test and post-test total stress scores, the change in the groups was statistically different (p<0.001). The effect size was 0.360, and the statistical power was 0.980 for the difference between the pretest and posttest scores according to the groups (Table 2).

TABLE 2: Comparison of the groups' pretest and posttest scores from the stress scale and anxiety scale.

	Groups		Test statistics†	
	Reiki X̄±SD	Control X̄±SD	F value	p value
Low self-esteem perception				
Pretest	14.35±4.38	13.85±3.87	0.467	0.495
Posttest	13.65±3.59	14.93±3.19	**4.545**	**0.035**
Difference	0.70±1.89	-1.07±4.49	**8.540**	**0.004**
Test statistics‡	F=2.661; p=0.105	F=**6.257**; p=**0.047**		
Group effect: F=0.430; p=0.513 time effect: F=0.379; p=0.540 group*measurement effect: F=8.540; p=0.004 effect size=0.259; power=0.826.				
Stress/discomfort perception				
Pretest	18.95±4.45	18.75±4.13	0.071	0.790
Posttest	17.64±3.86	18.76±3.79	2.767	0.099
Difference	1.31±2.58	-0.01±1.45	**12.867**	**<0.001**
Test statistics‡	F=**25.132**; p**<0.001**	F=0.004; p=0.953		
Group effect: F=0.439; p=0.509 time effect: F=12.269; p<0.001 group*measurement effect: F=12.867; p<0.001 effect size=0.320; power=0.945.				
Total stress				
Pretest	33.31±7.93	32.60±6.53	0.300	0.585
Posttest	31.29±6.27	33.68±5.71	**5.077**	**0.026**
Difference	2.02±3.84	-1.07±4.77	**16.300**	**<0.001**
Test statistics‡	F=**13.838**; p**<0.001**	F=3.959; p=0.158		
Group effect: F=0.574; p=0.450 time effect: F=1.497; p=0.223 group*measurement effect: F=16.300; p<0.001 effect size=0.360; power=0.980				
Beck anxiety inventory				
Pretest	25.01±15.77	24.07±12.18	0.142	0.707
Posttest	21.87±12.57	25.81±8.88	**4.185**	**0.043**
Difference	3.14±5.74	-1.73±7.34	**14.233**	**<0.001**
Test statistics‡	F=**14.530**; p**<0.001**	F=4.431; p=0.837		
Group effect: F=0.401; p=0.528 time effect: F=0.854; p=0.357 group*measurement effect: F=14.233; p<0.001 effect size=0.335; power=0.963				

*Two-way analysis of variance in repeated measurements, †Comparisons between groups in each test, ‡Pretest-posttest comparisons in each group; SD: Standard deviation.

The post-test scores on the BAI of the reiki group were statistically lower than the control group (p=0.043). The post-test scores on the BAI for the reiki group were statistically lower than the pre-test scores (p<0.001). The difference in the pretest and posttest scores of the BAI turned out to be statistically different (p<0.001). The effect size was 0.335, and the statistical power was 0.963 for the difference between the pre-test and post-test scores according to the groups (Table 2).

DISCUSSION

Reiki, one of the non-pharmacological treatment methods, has positive effects on health and provides harmony between body, mind, and spirit. While studies involving reiki applications for different patient groups were found in the literature review very few studies examining the effects of reiki applications on stress and anxiety levels for nurses were encountered.[9,14,16,23-25] That's why this study was needed. It was observed that reiki application decreased the stress score average of nurses (Table 2).

In the study conducted by Dyer et al., remote reiki was applied to healthcare workers on the front lines in the fight against the coronavirus disease-2019 epidemic in the United Kingdom, and it was observed that there were statistically significant decreases in the stress level of the participants, and these results were associated with reiki.[14] Similarly, in a pilot study, it was found that reiki practice was effective in reducing stress.[9] In a double-blind and placebo-controlled study of Bat, the change in heart rate between the placebo and reiki group was found to be very close to significant.[26] Kurebayashi et al., on the

other hand, found that stress scores decreased by 24% in groups that received reiki twice a week for 4 weeks.[24] Bukowski found that the application of self-reiki by students twice a week for 20 weeks was influential in reducing stress and anxiety levels.[27] In another study examining the effect of the reiki technique on anxiety, the results were parallel to our study.[8] The findings of the reiki application performed with different sample groups were similar to the study results. It can be said that reiki application is a non-pharmacological complementary application that reduces stress in nurses, who are on duty even in the most difficult conditions and touch human lives, as well as in patients, and can be used in nurses.

In this study, the outcomes yielded that reiki practice was efficient in decreasing the anxiety score average of nurses (Table 2). In the study conducted by Dyer et al., remote reiki was applied to healthcare professionals and it was observed that there were statistically significant decreases in the anxiety levels of the employees.[14] Bondi et al. observed that the application of reiki practice to hospitalized women reduced their anxiety levels.[28] In the review article published by Billot et al., the results stated that reiki practice is beneficial in reducing anxiety and improvement quality of life in many cases.[18] In the study of Topdemir and Saritas, examining the effect of reiki demonstrated that reiki application reduced the anxiety levels of patients.[17] Cassidy et al. study examined the influence of preoperative reiki practice on women. Their findings showed that the level of preoperative anxiety decreased with musical reiki application compared to music alone.[23] In other studies examining the effects of reiki practice on stress, the findings were similar to the results of this study.[16,24,29-33] It can be said that reiki application can be an effective application and that it should be supported by new studies to examine its effect on nurses. These results confirm the hypothesis that reiki practice is effective in reducing stress and anxiety levels in nurses.

LIMITATIONS OF THE STUDY

The study was conducted in a single center. Therefore, the findings may not be applicable to the countrywide population.

CONCLUSION

The analysis of the results showed that after reiki sessions, there was a reduction in stress and anxiety levels in nurses. As an independent nursing practice, reiki can be used not only for patients but also for nurses. It may be recommended to provide training to nurses about reiki application and to apply it to nurses since it is safe, effective and easy to apply. In addition, to investigate the effectiveness of reiki application, it may be recommended to study different professional groups with a larger sample size.

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Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

This study is entirely author's own work and no other author contribution.

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