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Research Article/Özgün Araştırma

The effect of baby oil applied to pruritus areas on pruritus, fatigue and anxiety in cirrhosis patients with pruritus

Kaşıntısı olan siroz hastalarında kaşıntı bölgelerine uygulanan bebe yağının kaşıntı, yorgunluk ve anksiyete üzerine etkisi

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Abstract

Aim: The aim of this study was to investigate the effects of baby oil on pruritus, anxiety and fatigue levels of patients with liver cirrhosis.

Materials and Methods: This randomized controlled study was conducted with 60 patients hospitalized in the internal medicine clinic of a University hospital in the western part of Turkey. Patients in both groups; Patient Information Form, 5-D Itch Scale, Visual Analog Scale, Fatigue Severity Scale and Beck Anxiety Inventory were applied. In the intervention group, cooled baby oil was applied to the itching area 15 minutes at a time for a duration of 15 days. In the control group, no baby oil was applied. After 15 days' period, the same questionnaires were re-applied to the both groups. 5-D Itch Scale, Visual Analog Scale, Fatigue Severity Scale and Beck Anxiety Inventory scores of the patients in the control and intervention groups were compared before and after the baby oil application.

Results: Following the intervention, 5-D Itch Scale (19.016, p<0.001), Visual Analog Scale (20.544, p<0.001), Fatigue Severity Scale (6.292, p<0.001) and Beck Anxiety Inventory (4.705, p<0.001) scores were found to be significantly lower compared to the pretest assessment in the intervention group (p<0.001).

Conclusion: It was concluded that baby oil may be used as an effective nursing method in reducing pruritus, anxiety and fatigue in patients with liver cirrhosis.

Keywords: Anxiety baby oil, Nursing, Liver cirrhosis, Pruritus, Fatigue.

Öz

Amaç: Bu çalışmada, karaciğer sirozu olan hastalarda uygulanan bebe yağının kaşıntı, yorgunluk ve anksiyete düzeyine etkisinin incelenmesi amaçlanmıştır.

Gereç ve Yöntem: Randomize kontrollü olarak yapılan bu çalışma, Türkiye'nin batısında yer alan bir ildeki Üniversite hastanesinde dahiliye kliniğinde yatmakta olan 60 hasta ile yapılmıştır. Her iki gruptaki hastalara; Hasta Tanıtım Formu, 5-D Kaşıntı Ölçeği, Vizüel Analog Skala, yorgunluk şiddet ölçeği ve Beck Anksiyete Ölçeği uygulanmıştır. Müdahale grubundaki hastalara 15 gün süresince kaşıntı olan bölgelere soğutulmuş bebe yağı 15 dk. uygulandıktan sonra kaşıntı, yorgunluk ve anksiyeteyi değerlendirmek için, aynı skalalar 15. günün sonunda tekrar uygulanmıştır. Kontrol gurubuna ise bebe yağı uygulanmaksızın 15. günün sorasında aynı skalalar tekrar uygulanmıştır.

Bulgular: Müdahale ve kontrol gruplarında yer alan hastaların müdahale öncesi ve sonrası 5-D (19,016, p<0,001), Vizüel Analog Skala (20,544, p<0,001), Yorgunluk Şiddet Ölçeği (6,292, p<0,001) ve Beck Anksiyete Ölçeği (4,705, p<0,001) skorları karşılaştırıldığında, müdahale grubunda istatistiksel olarak anlamlı azalma olduğu bulunmuştur (p<0,001).

Sonuç: Bebe yağı, karaciğer sirozu tanılı hastalarda kaşıntı, yorgunluk ve anksiyeteyi azaltmada etkili bir hemşirelik girişimi olarak uygulanabilir.

Anahtar Kelimeler: Anksiyete; Bebe yağı; Hemşirelik; Karaciğer sirozu; Kaşıntı, Yorgunluk.

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Introduction

Liver cirrhosis is a progressive disease defined by replacement of healthy liver tissue with a corrupted fibrous tissue by repeated necrosis and regeneration.[1] Liver cirrhosis is shown to be one of the 10 most common causes of death in well-developed countries. In the USA, liver cirrhosis is the seventh biggest cause of death.[1,2]

Health Statistics Yearbook (2016) also demonstrated that the digestive system diseases rank the ninth place of the most common causes of death among chronic diseases when the distribution of causes of death by ICD-10 and genders are examined in Turkey.[3]

Liver cirrhosis, in addition to being a high-cost medical treatment, brings a period with several complications and side effects.[4,5] This disease can manifest symptoms such as jaundice, telangiectasia, splenomegaly, ascites, palmar erythema, the loss of body hair, pruritus, anorexia, malnutrition, fatigue, gynecomastia, gastro-intestinal bleeding, low self-respect, anxiety, depression and encephalopathy.[4,5,6] These symptoms and the course of disease decrease the life expectancy and the quality of life for patients.[2,4,5] Pruritus is one of the most significant symptoms which reduces the quality of life.[4] Recent studies have showed that 69-75% of patients diagnosed with primary biliary cirrhosis suffer from pruritus. [4-7]

Pruritus, originated from cholestatic reasons (primary biliary cirrhosis, primary sclerosing cholangitis, biliary obstruction), is commonly seen in cases with cirrhosis.[4,5] Pruritus in patients with liver cirrhosis is believed to be associated with plasma bile concentration. In addition to that, cholestasis in cirrhosis patients stimulates the release endogenous opioids such as histamine, substance P, bile acids, encephalin, lysophosphatidic acid (LPA) and autotoxin. These substances accumulate in blood and tissues and stimulates the neurons associated with itching. [5-10]

Pruritus may show up itself either intermittent and mild, or frequent and severe.[7,8] It is especially prominent on extremities. Not only it is rarely seen on the neck and the face, but it is also quite uncommon to manifest on the torso. It can be observed in genital areas, as well. After a hot bath and/or at nights when the skin is warm, the itching becomes particularly intense.[5,7,8]

A relation between pruritus and anxiety/fatigue is shown in patients with liver cirrhosis. Therefore, it is important to evaluate these symptoms simultaneously.[6] Many different pharmacologic agents and complementary methods are being used to treat pruritus in liver cirrhosis.[2,4,5,6,11] However, the lack of effectiveness with the current pharmacologic agents suggests a need for the further options.[5,6,7,12,13] Studies show that methods such as cold application, acupuncture, massage, phototherapy, acupressure and aromatherapy are being used as the complementary approaches.[14-22] But some of these complementary approaches are rather complex to perform, have high costs and require a specialized expert to carry out, thus have a limited use. Baby oil, in addition to being cheap, effective, having no side effects and convenient to use in both hospitals and in households, is shown to decrease symptoms of desquamation and xerosis.[15-17] Furthermore, baby oil is reported, to have high moisturizing agent, liquid paraffin.[17] In a 2014 study conducted by Karadag et al.[14] and a 2017 study by Mokhtrabadi et al.[17] reported that baby oil has positive effects on pruritus and fatigue in patients undergoing hemodialysis Afrasiabifar et al.[15] also reported that sweet almond oil reduces pruritus.

Nurses have important roles in increasing the quality of life of patients diagnosed with liver cirrhosis. They can help patients deal with pruritus by using complementary methods and evidence-based applications. Baby oil is a cheap, safe and effective product among the complementary methods which requires no expertise and has no side effects. Even though pruritus is seen on significant percent of cirrhosis patients, it is apparent that there is not enough discussion made on this subject. As there is no study focusing on the effectiveness of the baby oil on pruritus, fatigue, anxiety in cirrhosis, the need of such a study on this subject is evident. This study was conducted

with a purpose of providing evidence-based data on the use of baby oil for pruritus, fatigue, and anxiety in patients with cirrhosis.

Study Hypothesis

1. H0: Baby oil application has no effect on prutitus, fatigue and anxiety in patients with liver cirrhosis.
2. H1. Baby oil application reduces the severity of prutitus in patients with liver cirrhosis
3. H2. Baby oil application reduces the severity of fatigue in patients with liver cirrhosis
4. H3. Baby oil application reduces the anxiety level of patients with liver cirrhosis

Materials and Methods

Study design and sampling

This study used randomized controlled design.

Population

Patients in this study were recruited from Dokuz Eylül University Medical Faculty Hospital, Internal Medicine Clinic No.1, all of which were already being treated for liver cirrhosis. Number of subjects that required for this study was decided by running a power analysis tool on G-Power application. With a previously calculated 0.05 significance level (α), 0.80 statistical power (1-β) and 0.74 effect size, the requirement of 30 subjects is determined.[18] Power analysis was based on the study of Abdelghfar et al.[18] In the calculation of the effect size, the result of the severity of itching was considered. And 60 patients (30 intervention and 30 control group), who are treated for liver cirrhosis were selected. There was no loss in the study sample. And no adverse effects related to baby oil were reported by the patients in the intervention group.

The criteria for the recruitment process was:

a) At least 3 episodes of itching in the past 2 weeks (all episodes must be longer than 5 minutes) and suffering from pruritus for at least 6 months.,
b) Having no open wounds, cellulitis, infection, deep venous thrombosis, paraplegia, cardiac pacemaker, and no story of epileptic attack,
c) No history of allergic reactions,
d) Having thrombocyte count of more than 150.000
e) Not using any medical agents for itching (e.g. Antihistamines)
f) Being able to communicate properly and fluently, not having serious hearing-speaking problems, liver cirrhosis stage three and non-stage four
g) Not using any medical agents effecting sleep quality, e.g. antidepressants, antihistamines, hypnotics, benzodiazepines and other kinds of narcotics.
h) And giving consent to take part in this research.

The exclusion criteria was that developing an allergic reaction during the intervention or worsening liver cirrhosis.

Intervention/Intervention protocol

The patients were evaluated by the researcher based on the sampling criteria and the patients were included in the intervention and control groups by using simple random numbers table. This process continued till each group reached the desired number of patients (30 for each) (Figure 1). The researchers randomizing the groups and conducting the intervention was different. Therefore, a single-blind method was utilized. Additionally, the patients in the intervention and the control groups were waited in different rooms so they did not have the chance to interact with each other. Baby oil was applied to itching area of the patients in the intervention group, while no product was applied to the patients in the control group.

Temperature (cooled baby oil (10-15 ^{0}C) and the duration of application (15 minutes) of the baby oil were decided based on referring the literature.[14,16,17,23] In literature, it is stated that cooled baby oil is more effective in reducing the itching symptom and having a soothing effect. It is also shown that application of baby oil should be limited to 15 to 30 minutes to prevent irritation.[14,16,17,23] Studies have showed that applying baby oil for 15 days is effective. For this reason, baby oil

was applied for 15 days in this study. Patients with less than 15 days of hospitalization were not included. Researchers developed this intervention protocol based on an extend literature review. [14,16,17,23]

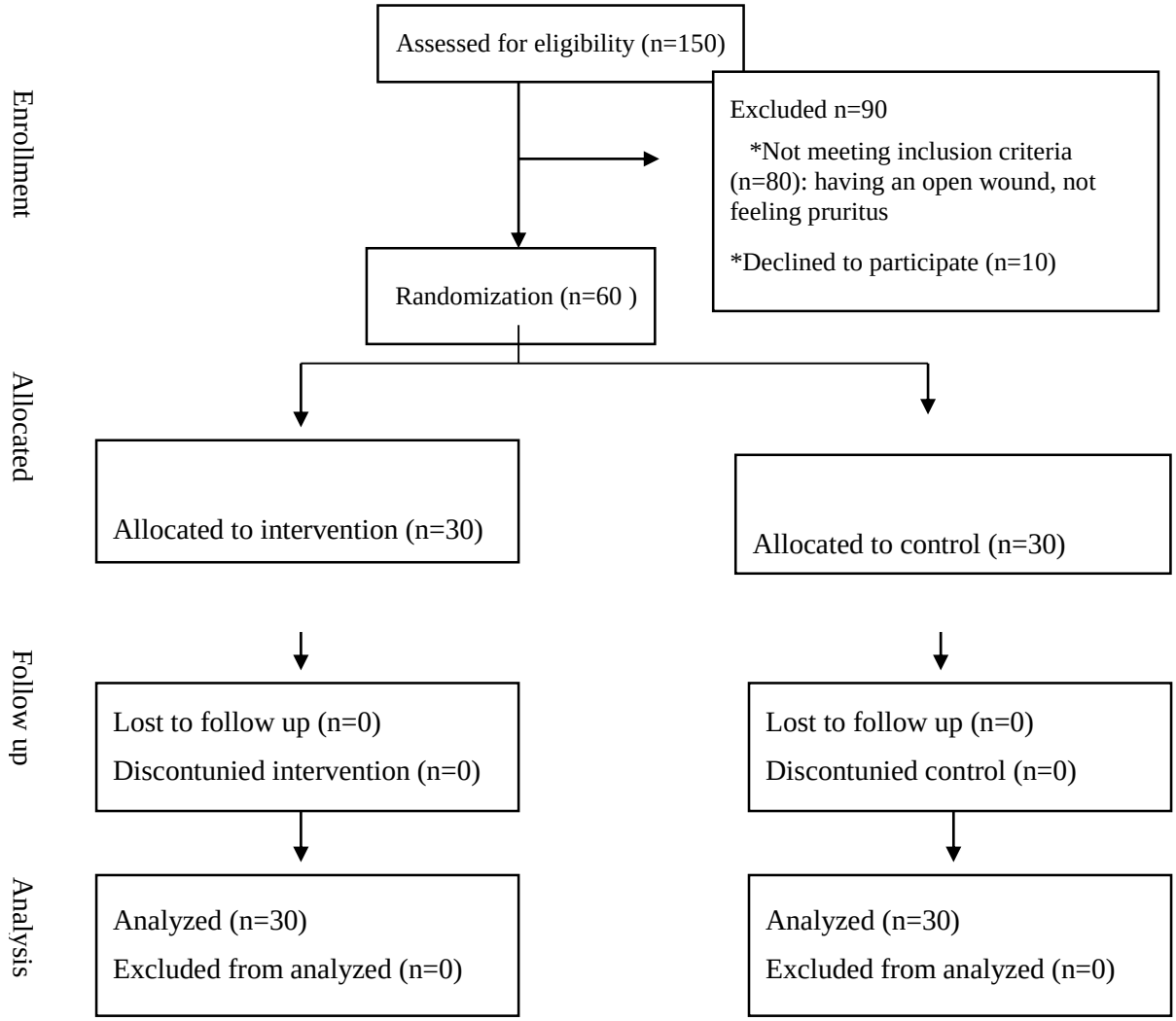

Figure 1. Consort flow diagram

Intervention protocol

a) Hands were washed before starting the procedure.
b) Patients were dressed in a proper sized patient gown and supplied with additional cloths if needed.
c) Skin was examined for bleeding, edema, open wounds etc.
d) Temperature of baby oil was determined with a thermometer and adjusted to 10-15 ^{0}C if needed.
e) Application of baby oil was applied rubbing by hand to the itching area till it is well absorbed. Duration of application was limited to 15 minutes.
f) In the case of occurrence of acute symptoms such as pain or tremor, application will be immediately ended.
g) At the end of the baby oil application, the body temperature was controlled because the cooled baby oil was used (normal values are based on 36.5-37 ^{o}C).
h) After baby oil application, patients were cleaned, dried and relieved.
i) It was noted if there are any new changes on the patient's skin after baby oil application.
j) The rest of the baby oil was stored to keep cool after checking the temperature setting of the fridge.

Data collection

Data were collected in 10-15 minutes by the researcher who did not apply the baby oil. The first questionnaires (pre-test) were applied before the baby oil application, and the last questionnaires (post-test) were applied at the

end of the baby oil application (at the end of the 15th day).

a) **Intervention group**: On the first day of study, patients' sociodemographic diseases' features were collected. Additionally, the following questionnaires were filled out with the patient; 5-D Itch scale, Visual Analog Scale (VAS), Fatigue Severity Scale (FSS) and Beck Anxiety Inventory (BAI). To correctly assess the level of pruritus, 5-D Itch scale and Visual Analog Scale (VAS) were conducted together. Due to average duration of a patient's hospitalization being 15 days, baby oil application process took place for 15 days. Application was done once a day. The application was made in the afternoon when itching was higher. After this 15 days' period, 5-D Itch scale, Visual Analog Scale, Fatigue Severity Scale and Beck Anxiety Inventory questionnaires were re-applied and itching, anxiety and fatigue levels were re-evaluated.
b) **Control group:** Like the intervention group, on the first day, patients' sociodemographic and diseases' features were collected. 5-D, VAS, FSS and BAI questionnaires were filled out. In this group, no baby oil application was carried out and patients were given routine medical care for 15 days. The routine care in the clinic was the daily nursing care. After this period, the same questionnaires were re-applied, and results were re-evaluated.

Data collection tools

Sociodemographic and clinical data form: These surveys were developed by the researchers based on the literature. [17-23] Sociodemographic data were collected through five questions including age, gender, marital status, education and social security status. Clinical data also included five questions: time passed since being diagnosed with liver cirrhosis, duration of pruritus, etiology of liver cirrhosis, presence of other comorbid conditions and presence of dry skin.[17-23]

Visual Analog Scale (VAS): Visual Analog Scale is used to measure out the severity of pruritus. VAS is used to provide non-quantifiable data a numeric value. Although it is widely used to measure the intensity of pain, it can also be used to measure the severity of itching.[14,20] Two end values of the parameter are written on the two opposite endpoint of a 10cm line. And it is asked from the patient to evaluate their own situation by placing a dot or a line in between these two endpoints.[24] In this study, one end of the 10 cm line had "No itching" while the opposite end had "very severe itching" written on it. Then patients were given out these scales and asked to mark their level of discomfort. After they marked, the scales were collected. The distance of the marking was measured with a standard ruler. It was estimated as; 0-2 cm no itching, 3-4 cm mild itching, 5-6 cm moderate itching, 7-8 cm severe itching and 9-10 cm unbearable itching.[24]

5-D Itch Scale: 5-D itch scale is developed in 2010 by Elman et al [25] in Texas Southwestern Medical Center, Dallas. It is consisted of five dimensions which are called Duration, Degree, Direction, Daily activities and eight variables. It is an easily performed scale that can measure the severity, duration, and state of itching as well as its effect on sleep, social and daily activities like school, job etc.

Total score of this scale varies between 5 and 25, 5 being minimum and 25 being maximum. Each one of the four dimension (duration, degree, direction, and daily activities) is scored 1 to 5, depending on its effect on sleep quality, social activities, household chores and school/education. Distribution is also scored 1 to 5 depending on how many body parts of total of 16 are affected (0-2 = 1 points, 3-5 = 2 points, 6-10 = 3 points, 11-13 = 4 points, 14-16 = 5 points.).

Validity and reliability analysis of the scale in Turkey is made by Ersoy and Akyar[26] and ensured by internal consistency with a 0.608 Cronbach's Alpha coefficient (>0.05). There was a high correlation between re-test and the first test. Cronbach alpha coefficient value was found to be 0.631 in the current study **Fatigue Severity Scale (FSS):** It is created by Krupp et al.[27] In this scale, participant gives a score between 1 to 7 to each entry, 1 being do not

agree at all and seven being in complete agreement.

The scale consists of nine questions and a total score ranges between 9 and 63. Scoring 36 or more shows severe fatigue. This scales validity and reliability analysis was made by Armutlu et.al.[28] Research's Cronbach alpha value was found as 0.96. study Cronbach alpha coefficient is found to be 0.93 in the last measurement of this study.

Beck Anxiety Inventory (BAI It was developed by Beck et al.[29], is a quadruple Likert type self-assessment scale. It is used by individuals to assess the frequency of anxiety symptoms. This inventory's validity and reliability analysis is made by Ulusoy et al. with a Cronbach alpha value of 0.93.[30]

Total score range of the scale changes between 0 and 63. High total score shows the severity of anxiety experienced by individual. There are 13 item that assess physiological symptoms, five items explain the comprehension and three items which characterize both somatic and comprehensive symptoms. In this study, Cronbach alpha coefficient was found to be 0.902.

Data analysis

Statistical Package for Social Sciences (SPSS) for Windows 21.0 was used to analyze the data. Characteristic analysis of the intervention and the control groups was compared with chi-square analysis and independent t-test. Whether the data were suitable for normal distribution or not was tested with the Kolmogorov Smirnov test. As the data shows normal distribution, the differences between the 5-D Itch Scale, VAS, FSS and BAI scores obtained from the intervention and control groups were analyzed with the independent sample *t* test. To assess the differences per group, the paired sample *t* test was used.

Results were evaluated within %95 confidence interval and $p<0.05$ significance level.

Ethical considerations

Approval was taken from the Ethical Board of Dokuz Eylül University Hospital the study was conducted in (02/10/2018 date and 2018/14-31 number) and written permission was taken from University Hospital. The study was conducted in accordance with Helsinki declaration principles. Verbal and written consent was obtained from each participant. Permission to use the scale was obtained from the people who conducted the validity and reliability study of the scales in Turkey.

Results

Sample characteristics

The study includes total of 60 patients, 30 being in the intervention and 30 being in the control group. 55% of the patients were male, 45% of those were female, 86.7% of the patients were married and 60% of them had primary school graduates. The mean age of the patients was 61.63±9.01 years and 68.3% of the patients had comorbidities. Mean duration of diagnosis was found as 54.06±44.89 months. Etiology of liver cirrhosis were post necrotic in 43% of the patients, while 18.3% was biliary and 26.7% were alcoholic. Dry skin problem was detected in 61.7% of the patients. While all the patients in this study were suffering from pruritus, the average duration of pruritus was detected as 20.53±18.41 months, min:6; max 96 months (Table 1).

According to the itch area distribution that can be found in the 5-D Itch Scale, body parts where the patients suffered the itching most were respectively; back (91.7%), plantar area (71.7%), abdomen (80.0%), foot and toes (55.0%), legs (48.3%) and chest (35.0%) (Table 2).

No significant difference was found between the intervention and the control groups in terms of age, duration of diagnosis, duration of pruritus, gender, marital status, education level, coexistent disease, etiology of liver cirrhosis and presence of dry skin ($p>0.05$) (Table 1).

Comparison of the 5-D Itch Scale, VAS, FSS and BAE scores between the intervention and the control group

When the 5-D Itch Scale, VAS, FSS and BAE scores of the patients in the control and intervention groups before and after the intervention were compared, the differences in

the change were found to be statistically significant in favor of the intervention group (p<0.001; Table 3).

Table 1. Baseline characteristics (n=60).

Variable	Group			Significance, *P*-value	
	Intervention group (n=30)	Control group (n=30)	Total sample (n=60)		
	n (%)	n (%)	n (%)		
Age (mean±SD)	62.00±9.21	61.26±8.95	61.63±9.01	0.313	0.756 [b]
Diagnosis duration (months)(mean±SD)	54.20±51.85	53.93±37.57	54.06±44.89	0.023	0.982[b]
Pruritus duration (months) (mean±SD)	20.36±19.47	20.70±17.63	20.53±18.41	-0.069	0.945[b]
Gender					
Female	17(56.7)	10(33.3)	27(45.0)	3.300	0.069[a]
Male	13(43.3)	20(66.7)	33(55.0)		
Marital status					
Married	25(83.3)	27(90.0)	52(86.7)	0.577	0.706[a]
Single	5(16.7)	3(10.0)	8(13.3)		
Educational Level					
Illiterate	6(20.0)	3(10.0)	9(15.0)	1.178	0.555[a]
Primary education (8 y)	17(56.7)	19(63.3)	36(60.0)		
High school (4 y)	7(23.3)	8(26.7)	15(25.0)		
Presence of comorbidities					
Yes	23(76.7)	18(60.0)	41(68.3)	1.926	0.165[a]
No	7(23.3)	12(40.0)	19(31.7)		
Etiology of liver cirrhosis					
Post necrotic	13(43.3)	13(43.3)	26(43.3)	4.662	0.198[a]
Alcohol	6(20.0)	10(33.3)	16(26.7)		
Biliary	5(16.7)	6(20.0)	11(18.3)		
Idiopathic	6(20.0)	1(3.3)	7(11.7)		
Dry skin					
Yes	20(%66.7)	17(%56.7)	37(%61.7)	0.635	0.426[a]
No	10(%33.3)	13(%43.3)	23(%38.3)		

a, Chi-square analysis; b, independent t test

Table 2. Areas with the most itching.

Areas with the most itching*			
	Yes (%)		**Yes** (%)
Head/Scalp	6.7	Face	8.3
Chest	35.0	Abdomen	80.0
Back	91.7	Hip	3.3
Thighs	21.7	Leg	48.3
Plantar area	71.7	Palm	30.0
Hand/fingers	28.3	Forearm	36.7
Upper arm	46.7	Points where clothing is in intense contact with the body (such as belts, underwear)	26.7
Spoon	13.3	Foot and toes	55.0

*More than one option selected.

In the intervention group; 5-D Itch Scale (19.016, p<0.001), VAS (20.544, p<0.001), FSS (6.292, p<0.001) and BAI (4.705, p<0.001) scores were found to be statistically significant when before and after tests were compared. After baby oil application, 5-D Itch Scale (pre-test:17.80(2.52), post-test:8.63(1.03)), VAS (pre-test:6.76(1.33), post test:0.70(1.02), FSS (pre test: 47.93(11.31, post-test: 39.66(11.55) and BAI (pre test:17.43(9.75), post-test:10.06(6.19) scores showed a significant decrease (Table-3).

In the control group, there were no significant difference found in scores of 5-D Itch Scale (3.788, p=0.393), VAS **(**3.026, p=0.123), FSS (2.728, p=0.128) and BAI (2.056, p=0.069) (Table 3).

Table 3. Comparison of 5-D Itch Scale, VAS, FSS and BAI scores within and between the groups.

Scores	Intervention group Mean (SD)	Control group Mean (SD)	Significance test[a] (p)
5-D Itch Scale			
Pre test	17.80(2.52)	17.36(2.18)	t [a]=0.710 (.480)
Post test	8.63(1.03)	17.40 (1.92)	**t [a]=-19.710 (*p*<0.001)**
Significance test(p)	t[b]= 19.016,*p*<0.001	t[b]= 3.788,*p*=0.393	
VAS			
Pre test	6.76(1.33)	7.23(0.85)	t [a]=-1.614 (.112)
Post test	0.70(1.02)	7.13(0.87)	**t [a]=-24.976 (*p*<0.001)**
Significance test(p)	t[b]=20.544, *p*<0.001	t[b]=3.026, *p*=0.123	
FSS			
Pre test	47.93(11.31)	58.60(4.62)	t [a]=- 4.777(*p*<0.001)
Post test	39.66(11.55)	58.13(4.89)	**t [a]=-7.185** (*p*<0.001**)**
Significance test(p)	t[b]=6.292, *p*<0.001	t[b]=2.728, *p*=0.128	
BAI			
Pre test	17.43(9.75)	22.56(13.93)	t [a]=-1.653 (.104)
Post test	10.06(6.19)	21.99(13.10)	**t [a]=-4.193** (*p*<0.001**)**
Significance test(p)	t[b]= 4.705, *p*<0.001	t[b]=2.056, *p*=0.069	

Abbreviations: BAI, Beck Anxiety Inventory; FSS, Fatigue Severity Scale.
[a]The score difference between intervention and control groups has been evaluated with the independent-samples t test.
[b]The score difference between the pre and posttests of the same group was evaluated with the paired-samples t test.

The relationship between 5-D Itch Scale, VAS, FSS and BAE scale posttest total score averages.

As a result of the correlation analysis between the patients' 5-D Itch Scale, VAS, FSS and BAE scale; A significant positive correlation was found between the scales (p<0.001).

Discussion

Pruritus is a common comorbid symptom of chronic liver disease. Pruritus is a complication of liver diseases characterized by cholestasis, as measured by increased activity of liver-derived alkaline phosphatase and plasma concentrations of bile acids.[5-10]

This study carries a significance in terms of being the first study to examine the effects of baby oil on pruritus in patients with liver cirrhosis. The average duration of pruritus was found as 20.53±18.41 months and the body area most affected were found back (91.7%) (Table 2). The prevalence of pruritus was reported to be 18–77% in patients with primary biliary cholangitis (PBC), 5.1-58.4% in patients infected with hepatitis C virus (HCV), and 8% in patients infected with hepatitis B virus (HBV).[9-12] Oeda et al.[7] found in their multicenter study including 1631 patients diagnosed with liver cirrhosis that the prevalence of pruritus is 40.3 % and the most suffered itching area was back (63.1%). These results show the similarity with our study.

Many studies show that pruritus may cause psychological and physical problems such as; skin lesions, hemorrhage, fatigue/weakness, social isolation, body image disturbance, sleep disorders, anger-anxiety-depression and suicidal sensation.[4-10] These problems decrease the quality of life, restrict the daily activities, reduce the motivation to self-care and complicate the adaption to the disease.[4-10] Despite all these, pruritus is being ignored by health professionals.[4-10,31,32]

Rifampicin, opioid antagonists, sertraline, and cholestyramine can be used as a long-term treatment for pruritus. Yet, these agents have limited effects when used long term and can manifest side effects.[10.11] Oeda et al.[7] also found in their study, that antipruritic agents fail to reduce the symptom in 57.8% of the patients and therefore are ineffective. For this reason, non-pharmacologic methods are needed. And this study demonstrates that baby oil-applied patients showed a significant decrease in itching, anxiety and fatigue levels. There is no other research evaluating the effect of baby oil in patients with liver cirrhosis. But there are some studies made on other disease groups. Karadağ et al.[14] reported that baby oil had a positive effect on itching, sleep quality and quality of life in hemodialysis patients. The mean score of itching decreased from

5.68±1.82 to 3.17(1.67). Also, another study conducted on hemodialysis patients made by Mokhtarabadi et al.[17] showed that baby oil reduced the itching symptoms. Mokhtarabadi et al. In the study, the itching score decreased from 5.87±2.43 (pre-test) to 3.37±2.11 (post-test) after baby oil application. In a study by Afrasiabifar et al.[15], sweet almond oil is found to reduce pruritus in hemodialysis patients. In a study carried out by Lin et al.[23], it was marked that baby oil diminished pruritus severity in hemodialysis patients due to its moisturizing properties.[23] These results show similarity with our results.

Topical moisturizing agents like baby oil create a thin layer on the skin and reduce the itching symptom with the paraffin they contain. Peppermint oil has also been reported to be effective on itching.[5] Moisturizing raw coconut oil and mineral-rich baby oil is believed to have such effects by stopping the nerve conduction on C fibers, reducing the chemical agent and reducing the inflammation.[5,14,20,] Baby oil contains liquid paraffin with high moisturizing properties; accordingly, it can relieve or even treat this condition properly.[5,14] Cold temperatures contrict blood vessels, lower cell metabolism and nerve transmission speed, interrupt nerve fibre transmission, paralyse neural receptors and anesthetise the treated area.[5,14,23,32,33] It is known that the dryness of the skin provokes the itching in patients with liver cirrhosis. Therefore, it is thought that baby oil can reduce dryness and hereby relieve the patient.

Limitations of the study

In this study, the single time use, and short-term effects of baby oil have been evaluated. The results obtained here are only valid for the short-term effect of baby oil on pruritus, fatigue and anxiety.

Conclusion

In this study, it is found that the application of baby oil significantly reduces the levels of itching, fatigue, and anxiety in patients with liver cirrhosis. Pruritus is an important factor on quality of life of, fatigue and anxiety a patient with liver cirrhosis. Nurses bear more responsibilities by spending more time with patients. Baby oil can be used as an independent nursing method to the pruritus in cirrhosis patients; being noninvasive, cheap, side-effect-less, and easy to use.

As there is no other study on effects of baby oil conducted, it is required to conduct different and wide-scale studies and relay the results stemming from these studies to nursing practices. Therefore, the necessity of further research to confirm the study results is apparent.

Ethical considerations

Approval was taken from the Ethical Board of Dokuz Eylül University Hospital the study was conducted in (02/10/2018 date and 2018/14-31 number) and written permission was taken from University Hospital. The study was conducted in accordance with Helsinki declaration principles. Verbal and written consent was obtained from each participant. Permission to use the scale was obtained from the people who conducted the validity and reliability study of the scales in Turkey.

Informed Consent

All participants signed the informed consent form, and their consent was obtained.

Author Contributions

Idea design, collection of resources, analysis, and literature, written and critical: EG, MA and YT.

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Conflict of Interest

There is no conflict of interest to declare.

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