

Evaluating the Effect of Slow-Stroke Back Massage on the Anxiety of Candidates for Cataract Surgery

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Background: The patients under cataract surgery often experience anxiety not only during the surgery, but also prior to the surgery.

Purpose: We sought to determine the effects of slow-stroke back massage on anxiety in patients undergoing cataract surgery.

Setting: The study was conducted in the Amiral-momenin Hospital of Zabol city, south-east of Iran.

Participants: A total of 60 candidates of cataract surgery participated in the study.

Research Design: The participants were randomly allocated to either control or intervention groups. The intervention group received slow-stroke back massages, while patients in control group received routine interventions.

Intervention: The slow-stroke back massage was performed on the patients assigned to the intervention group. The intervention was performed in the morning of the surgery day at 30 minutes before the surgery. The researcher performed each massage session in a sitting position. The duration of each massage session was 15 minutes.

Main Outcome Measures: Anxiety was assessed in the both groups in the morning of the surgery, before and immediately after the intervention. Independent samples Student's *t* test, paired samples Student's *t* test, and chi-squared test were used to analyze the data.

Results: Anxiety was not significantly different between the two groups before and after the massage ($p = .816$). On the other hand, paired samples Student's *t* test showed a significant difference comparing the anxiety scores before (49.7 ± 5.43) and after (45.16 ± 3.89) the massage in the intervention group ($p < .001$).

Conclusions: Based on our results, slow-stroke back massage, which is a low-cost and safe method, reduced anxiety in patients who were candidates for cataract surgery.

KEY WORDS: slow-stroke back massage; cataract; anxiety; surgery

INTRODUCTION

Among eye disorders, cataract is the most common cause of blindness worldwide.⁽¹⁾ Cataract prevalence is 50% in the age group of 65–75 years, reaching to 70% in those older than 75 years old. Currently, surgical intervention is the only treatment for cataract, with one million cataract surgeries annually performed in the United States.^(2,3)

Patient's stress before surgery can lead to serious physiological and psychological reactions such as anxiety and fear,⁽⁴⁾ endangering the patient's life by promoting detrimental health effects such as hypertension and tachycardia. In fact, severe anxiety increases the risk of death by as much as three times.⁽⁵⁾ Various studies have shown that patients undergoing cataract surgery often experience fear and anxiety both prior and during the procedure. The pre-surgery anxiety negatively affects the patients' psychological and physiological performances.^(6,7) The findings of Vaughn et al.⁽⁸⁾ showed that despite the underscored strategies to reduce anxiety and its complications in patients undergoing cataract surgery, the patients are inadequately prepared from psychological perspectives by the nursing team. However, this may be due to the high number of patient admissions at the same day of the surgery.⁽⁹⁾

The current therapies for mitigating the physiological derangements triggered by anxiety are mainly based on pharmaceutical interventions,⁽¹⁰⁾ along with the administration of anti-anxiety drugs and tranquilizers prior to the surgery. Nevertheless, most drugs are associated with unwanted complications which are accentuated in elders who may simultaneously receive multiple drugs (i.e., polypharmacy).⁽¹¹⁾ On the other hand, many of the currently used non-pharmacological practices pertain to the field of complementary medicine therapies. Research has shown that a variety of complementary medicine strategies can mitigate preoperative anxiety.⁽⁵⁾

Massage therapy is one of the most popular alternative and complementary therapies applied in clinical

practice by nurses. This method is easy to implement, safe, non-invasive, and relatively cheap.⁽¹²⁾ The slow-stroke back massage (SSBM) has been reported to be a simple, inexpensive, rapid, and non-invasive non-pharmaceutical technique that can be utilized as a nursing intervention, as well.⁽¹³⁾ SSBM is in fact a way of communication, recruiting sensory system (i.e., touching) instead of verbal method to interact with patients.⁽¹⁴⁾ In performing SSBM, the hands are gently moved on the skin without disturbing deep muscles.⁽¹⁵⁾ SSBM is applicable to the whole body, as well. SSBM usually starts slowly and in a rhythmic style from the posterior parts of the body and involves gentle movements of the hands on the patient's back at a speed of about 60 movements per minute, lasting about 3 to 10 minutes. The surface stroke movement used in this type of massage induces quite sensational effects and has very beneficial effects in patient relaxation.⁽¹⁶⁾ Massage is one of the most important complementary medicine therapies in nursing practice, and one of the indicators of comprehensive nursing care performed by skilled nurses.⁽¹⁷⁾ Massage therapy has been shown to be effective in managing anxiety in patients.^(18,19) A study conducted by Baron and Faubert⁽²⁰⁾ showed that anxiety decreased after massage therapy. However, Albert et al.⁽²¹⁾ concluded that massage therapy was ineffective to significantly reduce anxiety.

Research has shown variable anxiety levels in patients undergoing cataract surgery.⁽²²⁾ Anxiety greatly affects various patients' physiological and psychological functions.⁽⁷⁾ Nurses can particularly negate post-surgery complications, and the related financial expenses, by managing and reducing pre-surgery anxiety in patients. Many anxiety-reducing methods are available; however, the main point is to select the best and the safest method. Some protocols of complementary medicine can be effective in reducing anxiety.⁽¹⁹⁾ Massage is one of the most popular, easy to perform, safest, non-invasive, and affordable methods of complementary medicine to manage anxiety.⁽⁵⁾ Therefore, we here aimed to determine the effect of SSBM on the anxiety of patients undergoing cataract surgery.

METHODS

This was a randomized clinical trial study involving 60 candidates of cataract surgery referred to the Amirmomenin Hospital of Zabol city in the south-east of Iran between August 2015 and March 2016. The patients were randomly allocated into either of the two groups: intervention (30 subjects) and control (30 subjects). After obtaining informed consent, the patients entered into the study. The inclusion criteria were diagnosis of cataract according to the medical records, being candidate for surgical intervention, being at least 40 years old, having no history of anxiety

disorder and no consumption of relaxing and anti-anxiety medications on the night before the surgery, willingness to participate in the study, having full vigilance, acceptable listening and speaking abilities to answer questions, and having the severity of anxiety above 20 based on the Spielberger State-Trait Anxiety questionnaire.⁽²³⁾ The exclusion criteria were either withdrawal or death of patient during the study. The sample size was determined by considering the mean difference between the intervention and control groups, as suggested by Jalalodini et al.⁽¹⁸⁾ The data were obtained using the Spielberger State-Trait Anxiety questionnaire. First, demographic information, including questions about the participants' age, sex, marital status, and educational level, was gathered by a brief checklist. Then, anxiety was determined by the Spielberger State-Trait Anxiety questionnaire which contained 20 questions with four possible answers organized in Likert scale (i.e., very low, low, high, and very high).⁽²³⁾ The questionnaire was completed by interviewing the patients. The validity and reliability of the questionnaire have been universally verified,⁽²⁴⁾ with the reported α -Cronbach coefficients of 0.9452 and 0.9418 in normal and standard communities, respectively.⁽²³⁾ The minimum and maximum scores were 20 and 80, using this questionnaire. In this study, mild, moderate, and severe anxieties were assigned to the scores of 20–39, 40–59, and 60–80, respectively.⁽²⁵⁾

The subjects were randomly allocated into either SSBM or control groups. The patients in both groups were interviewed for obtaining the demographic and anxiety information using the Spielberger State-Trait Anxiety questionnaire. The interviews were conducted in the morning of the surgery, before and immediately after the intervention. In the intervention group, after giving privacy to the patients, the stroke massage was conducted using warm and oily hands. The massager, in semi-sitting position, placed the palms and fingers of the both hands on the patient's occiput region, moving one hand parallel to the vertebral column toward lower body, executing low and superficial pressure until reaching the sacrum. Then, the second hand was moved the same way while returning the other hand to its start position. This protocol was followed throughout the massage.⁽²⁶⁾ The researcher had massage therapy certification from an accredited agency. The researcher carried out the massages alone and in a quiet place. Each massage session lasted 15 minutes.

The members of control group received routine hospital-based educations, including a pamphlet providing information about cataract and the required cares before and after surgery. These patients received the required information from nurses verbally, as well. A full description of the study processes and importance was given to the patients, and informed consent was obtained from them. All the assessments were non-invasive. The study was approved by the Ethics Committee of Zabol University of Medical Sciences.

Statistical Analysis

After completing the questionnaires, the items were coded and scored to be entered the statistical software. The data were analyzed in SPSS 22 software and reported using absolute and relative frequencies, as well as means and standard deviations. The chi-square, Fisher's exact test, as well as paired samples and independent samples Student's *t* tests were used as statistical procedures. *P* < .05 was considered as the statistical significance threshold.

RESULTS

The randomization was performed at the study initiation. Our results indicated no significant differences in the patients' demographic features between intervention and control groups according to the chi-squared and Fisher's exact tests (*p* > .05). Most of the subjects were males (60%), married (86.7%), self-employed (73.3%), and lived in the city (96.7%) (Table 1).

Independent samples Student's *t* test showed no significant differences between the mean anxiety scores in the intervention and control groups before the intervention (*p* = .0915, Table 2).

TABLE 1. Demographic Profile of Patients in the Intervention and Control Groups

Variables	Intervention		Control	P-value
	Number (%) or Mean (Standard deviation)	Number (%) or Mean (Standard deviation)	Number (%) or Mean (Standard deviation)	
Age (years)	41-50	8(26.7)	12(40)	.206 ^a
	51-60	22(73.3)	18(60)	
Sex	Male	14(46.7)	18(60.0)	.301 ^a
	Female	16(53.3)	12(40.0)	
Marital status	Married	28(93.3)	26(86.7)	.305 ^a
	Single	2(6.7)	4 (13.3)	
Employment status	Employee	9 (30)	8 (26.7)	.246 ^b
	Self-employed	18 (60)	22 (73.3)	
	Housekeeper	3 (10)	0 (0)	
Vacancy	Urban	29(96.7)	28(93.3)	.554 ^a
	Rural	1(3.3)	2(6.7)	
	Illiterate	11(36.7)	16(53.3)	
Education	Elementary school	8(26.7)	10(33.3)	.078 ^a
	Diploma	10(33.3)	2(6.7)	
	Higher diploma	1(3.3)	2(6.7)	

^aChi-squared test.

^bFisher's exact test.

Paired samples Student's *t* test was used to examine the patients' anxiety scores before and after the intervention in both groups. The results indicated that the anxiety score significantly decreased in the intervention group (SSBM) (*p* < .001), but not in the control group (*p* = .231, Table 3).

DISCUSSION

Our results revealed that the mean anxiety scores were not significantly different between the two groups before intervention. After SSBM, however, anxiety score decreased to the mild level in the intervention group, indicating a positive impact for this intervention in reducing the patients' anxiety. In line with this study, the results of Bauer et al.,⁽²⁶⁾ who examined the effects of massage therapy on the severity of pain and anxiety in patients undergoing cardiac surgery, showed that massage can reduce preoperative anxiety. In another study evaluating the effects of hand massage on preoperative anxiety in ambulatory surgery patients in the United states,

TABLE 2. The Mean and Standard Deviation of Anxiety Score in Intervention and Control Groups Before and After Intervention

<i>p</i> value	95% CI		<i>t</i> ^a	Effect Size	Mean (± SD)	Groups
	upper	lower				
0.095	5.44	-0.361	1.71	2.54	49.7 Intervention (±5.43) (n=30)	Pre-intervention
					47.16 Control (±6.02) (n=30)	
0.816	2.003	-2.543	-0.23	-0.27	45.16 Intervention (±3.89) (n=30)	Post-intervention
					45.43 Control (±5.02) (n=30)	

^aIndependent sample Student's *t* test.

TABLE 3. The Mean and Standard Deviation of Anxiety Score in Intervention and Control Groups Before and After Intervention

<i>p</i> value	95% CI		<i>t</i> ^a	Effect Size	Mean (± SD)	Groups
	upper	lower				
0.001	4.89	1.43	3.722	3.15	49.7 Pre-intervention (±5.43) (n=30)	Intervention
					45.16 Post-intervention (±3.89)	
0.231	4.19	-1.07	1.208	1.55	47.16 Pre-intervention (±6.02) (n=30)	Control
					45.43 Post-intervention (±5.02)	

^aPaired sample Student's *t* test.

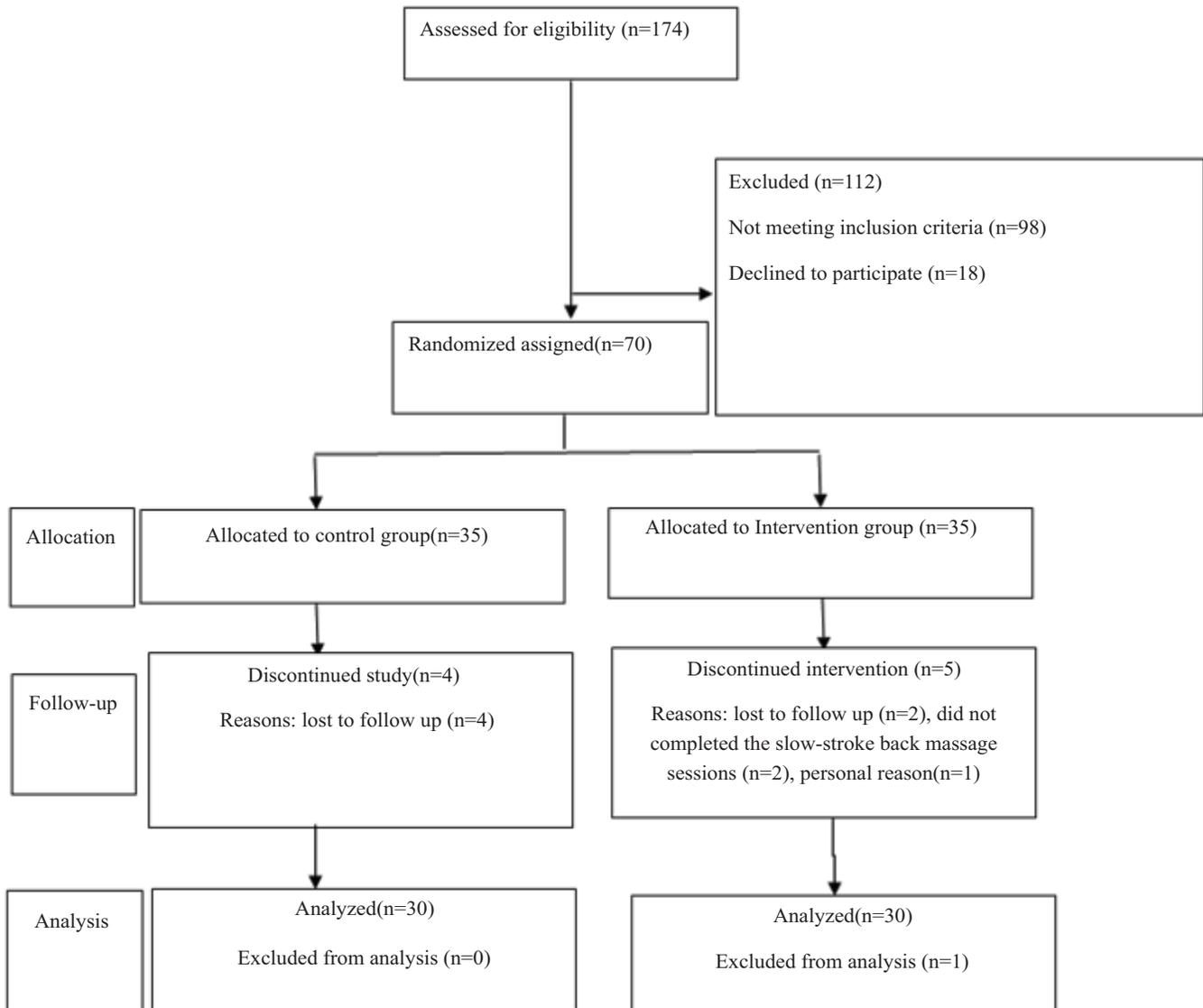


FIGURE 1. Study flow diagram.

the patients who received routine nursing care along with hand massage experienced lower anxiety.⁽²⁷⁾ Gholami-Motlagh et al.⁽²⁸⁾ in their study compared the effects of two Swedish massage methods on vital signs and anxiety. Their findings indicated positive effects for the massages on both vital signs and anxiety. The results of the three above-mentioned studies are consistent with our findings. Razmjoo et al.⁽²⁹⁾ examined the impact of foot massage on women's pain and anxiety after undergoing elective cesarean section. The results showed a significant difference in pain severity; however, anxiety was not affected by the massage therapy, unlike our findings. This may be due to different cultural aspects between the two studied populations and the nature of the surgeries. In another report by Ghezljeh et al.,⁽³⁰⁾ massage intervention did not affect either anxiety or pain in patients with

burns—which is also inconsistent with our findings. This discrepancy may also root in different study protocols and sample populations, as patients with burns experience higher levels of pain and anxiety. Nevertheless, Baron and Faubert⁽²⁰⁾ showed that anxiety decreased following massage therapy. Furthermore, our results regarding the positive impacts of massage therapy on anxiety are consistent with the findings of Haun et al.⁽³¹⁾ and Dreyer et al.⁽³²⁾

The limitation of this study included the inability to control potential intervening variables such as emotional, physical, cultural, and social factors which were beyond the researcher's control. In this study, we assessed the effects of SSBM as the massage therapy on anxiety level in our subjects. It is recommended to evaluate other variables, such as patients' satisfaction, to improve the assessment procedure.

CONCLUSION

According to the results of the present research, massage is an effective non-pharmacological method to reduce anxiety in patients undergoing cataract surgery. Since nurses play an important role in treating and relieving anxiety in patients, it is advisable that they dedicate more time to patients undergoing cataract surgery and consider providing appropriate massage therapy settings for them. It is further recommended to investigate the effects of massage therapy in other groups of patients.

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CONFLICT OF INTEREST NOTIFICATION

The authors declare there are no conflicts of interest.

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