Original Research

The Effect Of Prayer On The Hemodynamic Status Of Patients After Surgery

Saeideh Azizi Mahkooyeh[1], Mahbobe Dargahi[2*], Raheleh Rasad[3], Narjes Kazemi[4], Khadije Ganjivatan[5], Hamid Hojjati[6*]

1. MSc in Medical, Surgical Nursing, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran. Orcid: 0000-0002-0080-5269

2. MSc in Medical, Surgical Nursing of Tehran University of Medical Sciences, Tehran, Iran. Orcid: 0000-0002-0970-363X

3. Nursing Department, Nursing and Midwifery School, Kermanshah University of Medical Sciences, Kermanshah, Iran. Orcid: 0000-0002-7247-0453

4. MSc of Nursing, Department of Nursing, School of Nursing, Dezful University of Medical Sciences, Dezful, Iran. Orcid: 0000-0001-9720-8331

5. Master's degree in internal surgical nursing, Bahar Center for Education, Research and treatment, Shahroud University of Medical Sciences, Shahroud, Iran. Orcid: 0000-0002-5141-8760

6. Assistant Professor, Nursing Research Center, Golestan University of Medical Sciences, Gorgan, Iran. Orcid: 0000-0002-3350-7356

Corresponding Author: Hamid Hojjati. Assistant Professor, Nursing Research Center, Golestan University of Medical Sciences, Gorgan, Iran. **Email:** hojjati_hamid2019@yahoo.com

Abstract

Background: Anxiety and lack of pain control caused by surgery lead to hemodynamic changes and aggravate physical complications. Among the religious sources, prayer is the most used source in the treatment of diseases. This study was conducted with the aim of examining the effect of prayer on the hemodynamic status of patients after surgery.

Method: This semi-experimental study with two intervention and control groups was conducted on 54 patients who had been selected by non-random method. The Tavasol prayer was broadcasted to patients in the intervention group during the provision of clinical care. Patients in the control group received the hospital routine care. Hemodynamic status of patients was recorded by sphygmomanometer, pulse oximeter, and thermometer. Data were analyzed by Rapid Meier statistical test.

Results: The repeated analysis of variance did not show a significant difference between the two groups in terms of body temperature (P=0.32), pulse rate (P=0.06), diastolic blood pressure (P=0.7) and systolic blood pressure (P=0.43).

Conclusion: Nurses as a professional member of medical team play a vital role during the hospitalization of patients. They are also required to provide nursing care based on patient needs by understanding the patient's spiritual needs. Therefore, prayer therapy as a holistic care has an effective role in the internal coherence of patients.

Keywords: Prayer therapy, Hemodynamic changes, Patients, Surgery

Submitted: 2 July 2023, Revised: 22 July 2023, Accepted: 5 August 2023

[Downloaded from mail.intjmi.com on 2025-06-11]

Introduction

Surgery is a combination of anesthesia and cuts with tools such as needle or surgical blade, which leads to psychological problems such as anxiety, pain, insomnia and fear (1, 2). Pain and anxiety are among the side effects of surgery that occur due to stimulation of nervous system (3). Pain increases heart rate, blood pressure and heart functions, which in turn can lead to respiratory problems, hypoxia and aggression. These problems can cause a delay in the healing process (4). Anxiety caused by surgery stimulates the sympathetic system and increases blood pressure. However, anxiety can also cause a decrease in blood pressure due to drug side effects (5). Therefore, anxiety and lack of pain control caused by surgery can lead to hemodynamic changes and aggravate physical complications (3). Anesthetics can also cause hemodynamic instability. Therefore, it seems important and necessary to control parameters such as blood pressure, pulse rate, temperature and respiratory rate (6). Pain killers, narcotics, benzodiazepines or non-pharmacological methods are also used for pain relief in surgery (7). Studies show that various methods, such as relaxation, music, prayer, and reading holy book reduce anxiety and pain after surgery (5). Since spirituality as an important aspect of health becomes more important during illness and crises (8), religious beliefs become more important during illness than any other time (9). Among the religious sources, prayer is the most used source in the treatment of diseases (10). Prayer is one of the religious behaviors that are related to mental health and well-being (3). Prayer plays an important role in reducing anxiety and stabilizing hemodynamic status (11). Religious practices such as prayer affect not only emotional states but also physical quality, and within a few minutes or a few days, it helps the recovery of physical diseases (12). Today, prayer therapy has been proven as a holistic approach at the global level (12). Studies show that prayer therapy increases spiritual health and reduces cardiac burden in patients with heart problem (13). Prayer is the strongest and highest problem solver, which causes the release of spiritual energy (10). It can be said that prayer reduces anxiety and improves spirituality (14). Studies have shown the therapeutic effects of prayer in cardiovascular disease, AIDS, infertility, arthritis, and so on (15). Religious practices such as prayer affect not only the emotional states but also the physical quality of people (10). Therefore, prayer has a great role in reducing anxiety and creating balance in hemodynamic changes (15). Spiritual beliefs such as belief in resurrection or spiritual practices such as prayer increase self-efficacy and improve the quality of care (16). Since hospital is the right place to diagnose spiritual disorders, nurses as a professional team members have an opportunity to increase the well-being of patients by providing support and meeting their spiritual needs (12, 17). It has been repeatedly observed healthcare worker do not pay attention to the spiritual needs of patients in the hospitals (10, 18). Unfortunately, in Iran, in many cases, nursing is limited to identifying physical problems (3). Considering the effectiveness of prayer as a holistic care method, this study was conducted with the aim of examining the effect of prayer on the hemodynamic status of patients after surgery.

Method

This semi-experimental study with two intervention and control groups was conducted on 54 patients undergoing surgery (hernia, appendicitis, gall bladder, hemorrhoids). The environment of this study was the men's surgical ward of Hakim Jurjani Hospital in Gorgan in 1402. Conditions for entering the study were; undergoing surgery, being a Muslim and of Iranian origin, being able to communicate verbally and visually, being fully aware of time and space at the time of study, and being over 15 years old. One of the exclusion criteria was unwilling to participate in the study. The sample size was calculated to be 54 people (n=27 in each group) with G*Power software based on Hojjati et al. (2016) study, taking into account the effect size of 1 and the confidence interval of 95%. The

[Downloaded from mail.intjmi.com on 2025-06-11]

significant level of 0.05 was considered for all tests. The data collection tools included a sphygmomanometer to control blood pressure, a pulse oximeter to check pulse rate, and an electronic thermometer to check body temperature from the forehead. In shifts where the researcher was not present in the ward, the vital sign control sheet was used to record the vital signs. In the implementation of this study, after approving the project and presenting it to the hospital officials, the researcher first explained the purpose of study to the participants, and then informed them about confidentiality of their information, the preservation of anonymity and the safety of study. The participants were divided into two intervention and control groups by non-random method. Patients in the intervention group, after being transferred from the operating room to the ward and gaining consciousness, were allowed to listen to the Tavasol prayer played by the Android phone. The prayer was performed an average 4-6 times during the patient's hospitalization. In the control group, routine care was delivered to patients. After collecting the data, it was entered into SPSS-21 statistical software to be analyzed by descriptive statistics (table, mean, standard deviation) and inferential statistics (chi-square and rapid measurer) at a significance level of 0.05.

Results

The mean age of participants in the intervention group was 44.29 + 13.64 years and in the control group was 37.48 + 12.36 years. The U-Man-Whitney test showed a significant difference between the two groups in this regard (P=0.06). Chi-square statistical test showed a significant difference between the two groups in terms of marital status (P=0.35), education (P=0.21), occupation (P=0.18), and gender (P=0.5). The repeated analysis of variance showed no significant difference between the two groups in terms of body temperature (P=0.32), pulse rate (P=0.06), diastolic blood pressure (P=0.7) and systolic blood pressure (P=0.43).

Discussion

The results of this study showed that prayer did not have a significant effect on the hemodynamic changes of patients undergoing surgery in both intervention and test groups. This issue can be related to the short-term hospitalization rate, individual cultural differences, and the effects of anesthetic drugs. Rajablo et al. (2019) in a study to examine the effect of therapeutic Zikr on the hemodynamic changes of heart patients showed the effectiveness of therapeutic Zikr on blood pressure and pulse rate of patients (11). Kalhor Nia et al. (2014) in a study showed that spiritual care helps to manage stress, control blood pressure and increase the quality of life in hospitalized patients (19). Brasileiro 2017) argued that prayer plays an important role in inner peace and balance in vital signs such as blood pressure, breathing and stress control of renal patients (20). Hissari et al. (2020) revealed that spiritual beliefs and believing in divine power play an effective role in increasing self-efficacy, because spiritual beliefs play an important role in the internal cohesion of people (16). Hidayat (2023) showed that prayer therapy in patients before and after appendectomy surgery balances vital signs in patients (21). Delnavaz (2020) in a study showed that prayer and Zikr therapy reduces anxiety and fear in heart patients (22). In stressful situations, epinephrine and norepinephrine hormones increase heart rate and blood pressure. On the other hand, spiritual therapy by creating a sense of relaxation can reduce patients' heart rate and blood pressure (19). In heart patients, having religious belief, praying and trusting in God reduce stress and increase adaptability, because remembering God helps people to attain peace of mind and calm (12, 23). Praying can have many advantages such as reducing doctor's visit by about 26%, lowering blood pressure, reducing the use of medicine in 80% of patients with high blood pressure and heart patients, and reducing the number of visits by health organizations (24, 25). In the Holy Qur'an Surah Ra'ad, Allah says that remembrance of God, thinking about the greatness of God, thinking

[Downloaded from mail.intjmi.com on 2025-06-11]

about the philosophy of creation, glorifying the nature of truth and giving thanks for the blessings brings peace to the soul and calms the heart (13). Remembrance of God turns the fear of death into peace, and reduces anxiety and fears caused by mistrust of the future (22). It can be said that spiritual beliefs play an effective role in maintaining physiological balance during illness and improving mental health (26). Religious beliefs, such as prayer, calm the heart and reduce the level of death anxiety in patients (15). Using spiritual experiences and spiritual care such as prayer reduces stress and increases self-efficacy (27, 28). Therefore, increasing spirituality improves physical health, prevents heart diseases, lowers blood pressure, and improves health (12).

Prayer and making sacrifices increase human tolerance against diseases and problems. Prayer is a special factor in the face of the problems and causes mental-psychological peace in patients (12, 14). Today, the effectiveness of prayer therapy as a holistic approach has been proven at the global level. Many people, even those who are not familiar with the Arabic language and do not understand the meaning of Qur'an, find peace by hearing its voice (22). Studies show that although most nurses consider spiritual care to be an important part of holistic care, only nearly half of them practice it, and in most cases, this care is neglected (29). Nurses, as professional team members in medical care during the hospitalization patient, need to provide nursing care based on patient needs by understanding the spiritual needs of patients. Among the limitations of this study, we can point to the short hospitalization of patients in the surgical ward, and the broadcasting of prayer by phone. It is suggested to conduct a similar study in a longer period of time and with a larger sample size.

Conclusion

The results of this study showed that prayer has no effect on the hemodynamic changes of patients after surgery. However, since prayer is the most common treatment method in complementary medicine, its effects on inner peace and harmony have been proven. Considering the important role of nurses in understanding the spiritual needs of patients, it is possible to improve the quality of nursing care by meeting the spiritual needs of patients. For this reason, complementary medicine methods such as prayer therapy should be used to increase the mental and physical relaxation of patients. It is hoped that by using the findings of this study and with serious cooperation between the healthcare team members, we witness the effect of such therapies, create a sense of inner peace in patients and speed up their recovery.

Acknowledgement

The researchers consider it necessary to express their gratitude to all participants who helped us in this study. This project has a code of biological ethics from the ethics committee of the Islamic Azad University of Aliabad Katoul.

Conflict of interest

There is no conflict of interest in this research.

References

1. Motahari niya H, Hojjati H. The influence of education on anxiety in mothers of children with surgery. jpenir. 2019;5(4): 49-55.
2. Motahari Niya H, Hojjati H. The impact of General Psychological Training on the self-efficacy of Mothers whose Children Undergoing Surgery in Taleghani Pediatrics Hospital in Gorgan, Iran. nmj. 2019; 16(1): 43-50.
3. Hojjati H, Aghamolai M, Asadinejad H, Dehghan BH, Afra A, Kamalgharibi N. Hemodynamic Changes in Two Methods of Patient Controled Analgesia and Intramuscular Injection after Abdominal Surgery. Arumshcj. 2012; 14(3)
4. H. H, M. AM, S. F, R. EA, SM. M, N. Hp. Comparison of patients' satisfaction of intramuscular injection via two methods of self-control and muscular injection: attending to ethical criteria in patient care. Journal of Education and Ethics in nursing. 2013;2
5. Attari M, Eslami S, Mahmoudzadeh H, Shakeri M. The Effect of Preoperative

[Downloaded from mail.intjmi.com on 2025-06-11]

Anxiety on Hemodynamic Changes during Spinal Anesthesia in Patients Undergoing the surgery for Lumbar Disc Herniation. Journal of Isfahan Medical School. 2015;33(351): 63-1555.

6. Masoudifar M, Foroghi M, Hashemi T. The Comparison of the Effects of Fentanyl and Dexmedetomidine on Hemodynamic Stability in Patients undergoing Stereotactic Surgery. Journal of Isfahan Medical School. ۲۰۲۲;۴۰(۶۵۹):۴۸-۵۴.
7. Hekmat-Afshar M, Hojjati H, Sharif nia SH, Hojjati H, Salmasi E, Arazi S. The Effect of Music Therapy on Anxiety and Pain in Mothers after Caesarean Section Surgery. arumshcj. ۲۰۱۲;۱۴(۳):۰-.
8. Reyhani T, Sekhavat Pour Z, Heidarzadeh M, Mousavi SM, Mazloom SR. Investigating the Effects of Spiritual Self-Care Training on Psychological Stress of Mothers with Preterm Infants Admitted in Neonatal Intensive Care Unit. The Iranian Journal of Obstetrics, Gynecology and Infertility. ۲۰۱۴;۱۷(۹۷):۱۸-۲۷.
9. Okhli A, Hojjati H, Sadeghloo A, Molaei A, Shahrabady S. The Relationship Between Observing Religious Beliefs and Suffering in Hemodialysis Patients. J Relig Health. ۲۰۲۲;۶۱(۳):۲۰۱۸-۲۸.
10. hojjati h, motlagh m م, nouri f ف, shirifnia s h sh, mohammadnejad e ا, heydari b ب. Relationship between different dimensions of prayer and spiritual health of patients treated with hemodialysis. jccnursing. ۲۰۱۰;۲(۴):۷-۸.
11. Rajabloo M, Gharehsoflou S, Mamashli L, Hojjati H, Hekmatipour N. The Effect of Recommended Recitals on Blood Pressure and Pulse Rate in Patients Admitted to the Cardiac Care Unit. Jundishapur J Chronic Dis Care. ۲۰۱۹;۸(۴):e۹۰۶۷۶.
12. Hojjati H. Compare two methods of pray and mentioning on life expectancy i patients hospitilization in CCU Ward Social Security Golestan Hospitals in ۱۳۹۳. CMJA. 2016;6(1):94.
13. sharifnia sh, hojjati h, nazari r, qorbani m, akhoondzade g. The effect of prayer on mental health of hemodialysis patients. jccnursing. ۲۰۱۲;۵(۱):۲۹-۳۴.
14. Hojjati H, Hekmati Pour N, Khandousti S, Mirzaali J, Akhondzadeh G, Kolangi F, et al. An Investigation into the Dimensions of Prayer in Cancer Patients. mazujrh. ۲۰۱۵;۳(۱):۶۵-۷۲.
15. Negar Ranjbar Hajabadi RESFHHMT. The Relationship between Frequency of Prayer and Death Anxiety in Cancer Patients. Indian Journal of Forensic Medicine & Toxicology. ۲۰۲۰;۱۴(۳):۲۱۶۳-۷.
16. Elham Hesari FSNKHH. The Relationship between Believing in Resurrection (Ma'ad in Islam) and Self-efficacy in Mothers of Children with Thalassemia. Indian Journal of Forensic Medicine & Toxicology. ۲۰۲۰;۱۴(۴):۶۲۱۱-۷.
17. Yazarloo M, Hojjati H, Abdolreza Gharebagh Z. The Effect of Spiritual Self-care Education on Stress of Mothers of Premature Infants Admitted to NICU of Hospitals Affiliated to. ۲۰۲۳.
18. Valipour Eskandarkolaii E, Hekmatipour N, Hojjati H. The Effect of Spiritual Self-Care Training on the Severity of Insomnia of Diabetic Adolescents. CMJA. ۲۰۲۳;۱۳(۱):۲۸-۳۵.
19. Kalhornia-Golkar M, Banijamali S, Bahrami H, Hatami HR, Ahadi H. Effectiveness of Mixed Therapy of Stress Management Training and Spiritual Therapy on Level of Blood Pressure, Anxiety and Quality of Life of High Blood Pressure Patients. Journal of Clinical Psychology. ۲۰۱۴;۶(۳):۱-۱۱.
20. Brasileiro TOZ, Prado AAO, Assis BB, Nogueira DA, Lima RS, Chaves ECL. Effects of prayer on the vital signs of patients with chronic kidney disease:

[Downloaded from mail.intjmi.com on 2025-06-11]

randomized controlled trial. Rev Esc Enferm USP. ۲۰۱۷;۵۱:e۰۳۲۳۶.

21. Hidayat AI, Purnawan I, Mulyaningrat W, Saryono S, Siwi AS, Rias YA, et al. Effect of Combining Dhikr and Prayer Therapy on Pain and Vital Signs in Appendectomy Patients: A Quasi-Experimental Study. J Holist Nurs. ۲۰۲۳:۸۹۸۰۱۰۱۲۳۱۱۸۰۰۵۱.
22. delnavaz P, Sadeghi M, Hojjati H, Hekmatipour N. The Effect of Prayer Voice and Therapeutic Reminders on the Anxiety of Death of Hospitalized Patients in the CCuDepartment. International Journal of Psychosocial Rehabilitation. ۲۰۲۰;۲۴:۲۰۲۰.
23. Paturzo M, Petruzzo A, Bertò L, Mottola A, Cohen MZ, Alvaro R, et al. The lived experience of adults with heart failure: a phenomenological study. Ann Ig. ۲۰۱۶;۲۸(۴):۲۶۳-۷۳.
24. Sharif-Nia H. On the relationship between prayer frequency and spriitual health in pateints under hemodialysis therapy. H Sharif Nia and G Akhundzade H .۱۲;۲۰۱۰. Hojjati, M Qorbani, R Nazari
25. Moeini M. Patients' Religious Beliefs in Cardiac Pain Situations: A Qualitative Research. Journal of Qualitative Research in Health Sciences. ۲۰۲۰;۳(۱):۱۰۴-۱۳.
26. Tadwalkar R, Udeoji DU, Weiner RJ, Avestruz FL, LaChance D, Phan A, et al. The beneficial role of spiritual counseling in heart failure patients. J Relig Health. ۲۰۱۴;۵۳(۵):۱۵۷۵-۸۵.
27. Sadegh H, Mahla Y, Maryam Ebrahimpour R, Fatemeh A, Zahra Abdolreza G, Somayeh A, et al. The Effect of Spiritual Self-care Training on the Anxiety of Mothers of Premature Infants Admitted to NICUs. Journal of Pharmaceutical Negative Results. ۲۰۲۲:۳۳۹-۴۳.
28. May RW, Cooper AN, Fincham FD. Prayer in Marriage to Improve Wellness: Relationship Quality and Cardiovascular Functioning. J Relig Health. ۲۰۲۰;۵۹(۶):۲۹۹۰-۳۰۰۳.
29. Khorrami Markani A, Amiri E, Vahidi M. SPIRITUAL CARE OF END OF LIFE PATIENTS IN IRAN: A NEGLECTED NURSING PRACTICE. UNMF. ۲۰۲۰;۱۷(۱۰):۷۶۷-۷۰.

[Downloaded from mail.intjmi.com on 2025-06-11]

Table & Figure:

Table 1: Comparison of hemodynamic changes in the two intervention and control groups after surgery

Hemodynamic status \ Time		After surgery	6 h later	12 h later	24 h later	p-value
Temperature	Intervention	37.07±0.97	36.48±1.25	36.57±0.66	36.6±6.59	0.32
	Control	36.85±0.73	36.6±0.63	36.4±0.53	36.24±3.2	
Pulse rate	Intervention	75.11±11.49	76.9±48.54	70.25±6.1	66.85±3.37	0.06
	Control	73.8±21.6	72.88±0.73	66±4.7	65.92±4.65	
Systolic bp	Intervention	7.25±0.97	7±0.73	6.8±0.69	7.11±0.69	0.7
	Control	6.88±0.8	7.3±21.63	7.2±0.8	7.14±0.6	
Diastolic bp	Intervention	11.7±1.37	11.87±1.08	11.7±1.21	12.22±1.21	0.43
	Control	11.6±2.4	12.32±1.57	11.77±1.25	12.02±1.15	

[Downloaded from mail.intjmi.com on 2025-06-11]