

Investigating Aid Effect of Holy Quran Sound on Blood Pressure, Pulse, Respiration and O₂ Sat in ICU Patients

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Abstract

Introduction and Purpose: Holy Quran sound includes sound waves with specific frequency and wavelength. These waves produce oscillating strands which influence the brain cells and restore their balance and coordination. It also leads in dramatic increase in its defence power against disease. Thus, current study aims at investigating effect of Holy Quran sound on blood pressure, pulse, respiration, and O₂ saturation in ICU patients in Zabol city.

Materials and Methods: This research is a clinical trial of a pre and post group in which 30 patients hospitalized in intensive care units (ICUs) in Zabol hospitals were selected by purposive sampling method. Data collection tools included demographic questionnaire related to the disease, physiological index registration form, Glasgow Coma Scale, and physiological tools. For 10 consecutive days, Surah Yousuf with Minshawi Tarteel was broadcast for the subjects daily for 15 minutes via headphones through mp3 player. Then the physiological indexes were measured two times before and after the intervention. Data were analysed using descriptive and inferential statistics including T-test, Pearson correlation coefficient, Mann-Whitney, Friedman and Kruskal-Wallis by SPSS17 software.

Findings: It was shown that mean values of vital signs are different before and after intervention, which is statistically significant. The mean systolic and diastolic blood pressure and mean arterial pressure, heart rate and respiratory rate decreased after intervention, but the percentage of arterial oxygen saturation increased after intervention.

Conclusion: Findings demonstrated that listening to Holy Quran sound influences vital signs of unconscious patients admitted to the ICU so that it can be used to modify the vital signs in these patients.

Keywords: Holy Quran sound, vital signs, ICU

INTRODUCTION

Coma is the state of deep non-consciousness or lack of response to environmental stimuli caused by traumatic or non-traumatic brain injury (injuries resulting from infections, epilepsy, metabolic causes, cerebrovascular diseases, non-traumatic skull bleeding, malignancies and central nervous system surgery) [1].

Figures for brain injuries are high in the world, but in Iran, due to high road accident rates, these are more abundant. Comatose patients experience various changes including cognitive and psychological changes, physical disabilities, behavioural problems, and lack of sense and cognition, which have dramatic effects on the patient and his family life. Music may act as stimuli for creating optimal physiological and psychological responses in the listener. Great music of Holy Quran is one of the most beautiful, attractive, and pleasant music which can serve as a compliment treatment and alternative for excessive use of drugs in ICUs [1].

Quran is the divine book of Muslims which covers all aspects of human life and treatment of diseases can be obviously one of the aspects of divine verses of Holy

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Quran, and it is task of the doctors to manifest its effect [2]. In Quran therapy it is always emphasized that essentially the Quran is very effective in treatment of people with different medical problems.

Recent advances of medical sciences and improvement of care services increased victim survivability statistics, but these improvements have not guaranteed the patient's full recovery to the condition before the disease. Thus it causes hospitalization of patients for long times in ICUs. On the other hand, hospitalization is a stressful factor. Patients hospitalized in ICUs confront many stresses. It is estimated that 30 - 70 percent of patients experience severe physiological tension [1]. Heart pulse rate often rises following tension, and arrhythmia is more probable. Some of the physiological responses that are repeatedly observed toward the tension include increased metabolic rate and consequently increased body temperature, increased cardiac output and cardiac contraction, followed by increased blood pressure, heart rate and respiratory rate [3].

Drugs such as sedatives and analgesics are widely used to control the stress of patients in intensive care units. These drugs are expensive and have many complications, such as weakening of the respiratory system and even death. Some studies have shown that the continuous use of sedatives has delayed the separation of patients from mechanical ventilation and has led to an increase in patient care costs [4]. Nowadays using complementary therapies in medical system is highly emphasized, so that these therapies are known as a psychological factor aiming at developing comfort in stressful situations [5]. Music therapy is one of the complementary therapies. Music therapy is a complimentary therapy which improves recovery and well-being of patients through increasing stress threshold and eliminating negative emotions, regulating internal processes, creating comfort, and raising immunity and helps in the psychosocial, physiological and emotional integrity of the individual during treatment and disability [1].

Many studies have been conducted regarding music therapy. Results of these studies agree on reducing anxiety and creating comforting state. However, evidence on anti-anxiety effects of music on physiological indexes such as heart pulse rate, respiration, and blood pressure are inconsistent. Findings by Han *et al.* aiming at investigation of calming music effect on physiological indexes and anxiety of patients under mechanical ventilation indicated that music caused reduction of blood pressure, pulse rate, and respiration [6]. While Bodge *et al.* in their study aiming at studying calming music effect on physiological indexes and pacification of patients under mechanical ventilation found that music had significant effect on calming patients, but it lacked any significant effect on physiological indexes

(systolic and diastolic blood pressure, respiration rate and heart pulse rate) [7].

One of the most beautiful sounds is sounds of reading Holy Quran's verses with its special order, which is raised as one of the most wonderful aspects of miraculous Quran [8]. Calming effect of listening to Holy Quran on nervous and tense individuals is so that 97 percent of these problems is reduced. More interestingly, these positive results were obtained while many of these people were not even familiar with Arabic and did not understand the meaning of the verses. However, they felt calm by hearing the Qur'an verses due to the physiological effects of the Quran on their nerve system, because it has been proved that the human nervous system positively responds to sound stimuli with regular ups and downs [9]. In Iran, several studies have been carried out on the effects of Quranic sounds on patients in various fields and positive results have been obtained. For example, results obtained from the research by Ilderabadi *et al.* (2003) for investigating effect of Holy Quran sounds on vital signs of patients before heart surgery showed significant differences in heart pulse rate and respiratory rate in intervention group compared to the control group [10].

Since hearing is the strongest sense of the five senses and it is the last sense that stops working in unconscious ICU patients, and due to the limited research works in this field as well as attention to the culture and beliefs of the research location, effect of the Holy Quran's sound on blood pressure, heart pulse and respiration, and O₂ saturation in ICU patients in Zabol University of Medical Sciences hospitals was investigated.

MATERIALS AND METHODS

Current research is a clinical trial research and research population included all patients hospitalized in ICUs in hospitals affiliated to Zabol University of Medical Sciences with inclusion criteria. Inclusion criteria were as follows: 1. their families were consent to participate in the study. 2. Consciousness level of samples was between 8 -10 based on Glasgow Coma Scale. 3. The hemodynamic state of their body was stable in terms of water and electrolyte (this condition was confirmed by the patient's therapist). 4. No hearing impairment. 5. Not receiving continuous intravenous sedatives. 6. Not hospitalization for more than one month. 7. No history of brain damage. 8. No case of diabetes. 9. No case of cardiovascular disease and fat embolism. 10. Lack of drug addiction. 11. Lack of Otitis. 12. Lack of skull fracture or bleeding or surgery in the temporal region. 13. Entering the study at least 24 hours after stabilization of hemodynamic symptoms. Exclusion

criteria included: 1. Critical change in hemodynamic symptoms, 2. Patient's death before tenth day. Finally 30 ones were selected from research population using random sampling, and sample size was specified using the formula. For 10 consecutive days, Surah Yousuf with Minshawi Tarteel was broadcast for the subjects daily for 15 minutes via headphones through mp3 player, and then the physiological indexes including systolic and diastolic blood pressure, respiration, heart pulse, and O₂ Saturation were measured by means of a physiological index register form in two rounds, including the first turn five minutes before the playback of the Quran and the second time immediately after the completion of the playback.

Data were collected using demographic questionnaire related to the disease, physiological index register form, Glasgow Coma Scale (GCS), and physiological tools. Demographic questionnaire related to the disease included items about personal information of patient, Quranic background, and information related to the disease. Biological tools included Mercury barometer, Stethoscope and stopwatch.

It should be noted that GCS is the main tool for measurement of consciousness level of ICU patients which is a standard tool and its validity and reliability is confirmed. In order to increase reliability of bio-physiological tools, these tools were calibrated by a medical equipment engineer, and then they were used. In order to analyse data, appropriate to the measurement level of variables, in addition to descriptive statistics, inferential statistical methods including parametric tests (pairwise t test) and non-parametric tests (Spearman correlation coefficient, Mann-Whitney, Wilcoxon and Kruskal-Wallis) were used by SPSS17 software.

Findings

The data of thirty subjects were investigated in this clinical trial. Mean age of them was 42.36 at 8.04 consciousness level. Majority of subjects were male (70%), married (76.66%) with Quranic background (70%). Findings also showed that diastolic blood pressure, heart pulse rate, and respiratory rate followed normal distribution. While diastolic blood pressure and O₂Sat did not show normal distribution.

Findings indicated that mean vital signs (systolic and diastolic blood pressure, heart pulse rate and respiratory rate) reduced after intervention compared to before intervention, which this mean difference statistically shows significant difference ($0.0001 > p$). Findings also showed that mean O₂sat increased after intervention compared to before intervention, which this mean difference statistically shows significant difference ($0.0001 < p$) (Table 1).

In addition, research findings indicate that there is no significant relationship between age, gender, marital status and Quranic background of patients with vital signs and O₂ sat after intervention ($0.05 < P$). It suggests that Holy Quran sound has influenced vital signs and O₂ sat in all patients, even those with no Quranic background.

DISCUSSION

Results of this study show that there is difference between mean values of vital signs before and after intervention, and this difference is statistically significant ($0.0001 > P$). So that mean values of systolic and diastolic blood pressure, heart pulse rate, and respiratory rate decreased after intervention, but O₂ saturation values increased after intervention.

Many studies have been conducted on miraculous effects of Quran verses on treatment of physical and psychological diseases and adjustment of human health [1]. Findings of the current research showed that listening to Quran divine sound is effective in reducing vital signs and increasing consciousness level of unconscious patients in ICUs.

Shirvani (2012) in a study entitled "Investigation of Quran sound effect on vital signs and arterial oxygen pressure in unconscious patients admitted to ICUs" concluded that the Quran sound stabilized the vital signs of patients and increased arterial oxygen pressure, which is consistent with our research findings [11].

Mirbagher (2011) compared music and Quran sound effect on anxiety and vital signs of patients before abdominal surgery, and found that both music and Quran sound had positive effect on reducing blood pressure, pulse rate, and respiratory rate as well as anxiety level of patients, and Quran sound is more effective, which is consistent with current research findings [5].

Although the research on effect of the Holy Quran sound on vital signs is limited, Majidi (2004) studies effect of the

Table 1: Investigation of vital signs and O₂ sat in patients before and after intervention

Variable	Mean±SD		Statistical test	P-value
	Before intervention	After intervention		
O ₂ sat	97.35±2.38	95.63±1.75	Wilcoxon Test	<0.0001
Systolic blood pressure	114.25±13.03	131.14±13.67	Wilcoxon	<0.0001
Diastolic blood pressure	73.13±8.58	78.56±9.10	Pair-wise T	<0.0001
Heart pulse	75.87±9.07	89.61±8.86	Pair-wise T	<0.0001
Respiratory rate	15.15±1.65	17.66±1.61	Pair-wise T	<0.0001

Holy Quran sound on reducing anxiety level before and after angiography of coronary arteries [8] and Ilderabadi (2003) determined the effect of Quran sound on the level of anxiety before heart surgery, and showed that the people who listened to the Quran had lower levels of anxiety and more normal vital signs than the control group, which is in agreement with the findings in the current research [10].

Keshavarz (2009) in a study entitled “Investigating effect of Holy Quran sound on the physiological responses of premature infants admitted to ICU” found that the number of pulses and respiration decreased in the intervention group compared to the control group by broadcasting Holy Quran sound. This result is also consistent with the results of our study [12].

Different results are available regarding effect of music on vital signs. According to Nilsson (2008), music stabilizes vital signs [13]. Wallace (2001) found no change in blood pressure and pulse and respiratory rate [14], which these differences may be due to difference in the way of selection of patients and variety in environmental and cultural conditions. Research findings suggested the fact that listening to Quran sound influences reduction of blood pressure, pulse rate, and increasing arterial oxygen pressure of patients.

CONCLUSION

Sound of Holy Quran as a mystical music, after its expressive miraculous dimension, affects human mental and psychological states. Therefore, given findings of current research, Holy Quran sound can be used as a useful non-medicine therapy for stabilizing vital signs of patients.

Using Holy Quran sound has advantages such as ease of use, low cost, and being non-invasive and non-risky for patients (as opposed to pharmaceutical methods), so it can be recommended that ultimately improves the recovery and well-being of patients. Imam Baqir (PBUH) states: “There is a cure for any pain in the Quran.”

If doctors get familiar with effectiveness of Quran on recovery of their patients, a great change will be created in the quality of life of patients. Overall, if the optimal grounds are provided for wider research works of this type and investigating these therapies, they can be used in the scope of complimentary therapies.

In nursing practices, Holy Quran sound as an effective intervention can be part of patients’ care plan, and it can be used as a non-invasive therapeutic tool for improving homodynamic status and physiological indexes of patient. In addition, conducting these practices by nurses is crucially

important for paving the way to acquire professional independence. On the other hand, providing Holy Quran sound is a low-cost technique which needs no use of high and special human resources. Thus, holy Quran sound can play significant role as a nursing intervention in care of ICU patients. Patients, their accompany persons and families collaboration, health care providers, health educators are suggested to give further knowledge and information about Quran and spend more time to listen to Quran to decrease their complications and pains(15). In this study, it was shown that Holy Quran sound can be effective in improving and stabilizing physiological indexes (blood pressure, heart pulse, and respiratory rate) and O₂ sat of patients, and since critical changes in these indexes in ICU patients create adverse vital conditions, it is suggested that Holy Quran sound is used beside other medical methods in ICU. Using social networks are medias which use toward teaching and learning of lessons and they can use for teaching Quran inpatients in the all ward into hospital which they are useful for teaching and learning the Holy Quran (16).

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