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RESEARCH ARTICLE

The Effect of Spiritual Therapy on Clients' Vital Signs during Pulmonary Function Test: An Experimental Study

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ABSTRACT
Background: The patient's vital signs must stay stable pre a pulmonary function test since the approach demands the patient to breathe slowly and deeply and exhale quickly. However, events that cause variations in normal vital signs may impact the patient. Many strategies can be utilized to stabilize vital signs, including spiritual treatment. The purpose of this study is to compare the effectiveness of spiritual therapy on the vital signs of client's pre a pulmonary function test. Methods: Un experimental design study with an application (pre-test, post-test), to determine the effectiveness of spiritual therapy for clients pre pulmonary function test for 106 clients in Al-Diwaniyah, Al-Shamiya, and Al- Hamza public hospitals In Iraq. Participant's vital sings (pulse rate, respiratory rate, blood pressure and oxygen saturation) were measured before and after the intervention group. Two groups assigned as Quran intervention and a control group. Results: The results showed the difference in Pulse rate between pre and post- test were decrease in Quran therapy group 9.23 b/m. While Systolic blood pressure and Diastolic blood pressure were increased in Quran therapy group 5.17 /4.07 mm/hg. Also the results showed the respiratory rate was decreased in Quran therapy group 4.75 b/ m. While Oxygen saturation was increased in Quran therapy group 2.95. Conclusions: Listening to the Qur'an pre pulmonary function test had a positive effect on the regulation or stability of vital signs. Age and body mass index have the most influence on the vital signs of the clients who listed to the Quran pre pulmonary function test.

Keywords: Spiritual Therapy, Vital Signs, Pulmonary Function Test and Clients.

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INTRODUCTION

Asthma, Chronic Obstructive Pulmonary Disease (COPD), infections like influenza, pneumonia, and Tuberculosis (TB), pulmonary embolism, pulmonary hypertension, lung cancer, pleural effusion, pneumothorax, mesothelioma, chronic and acute bronchitis, and emphysema, among other breathing problems, are all examples of lung disease. Several lung diseases can induce respiratory failure (Matthew, 2020). Lung disease is classified into three types: The first is diseases of the airways, the tubes that transport oxygen and other gases into and out of the lungs. Second, lung tissue diseases alter the structure of lung tissue. Scarring or inflammation of the tissue prevents the lungs from expanding fully. Third, clotting and scarring or inflammation of the blood vessels in the lungs produces lung circulation illnesses, which affect the blood vessels in the lungs (Dempsey & Scanlon, 2018).

Spirometry is the most common pulmonary function test (Gallucci et al., 2019). It is frequently used to provide objective data for lung disease diagnosis and monitoring in the evaluation of lung function. In 2005, the American Thoracic Society and the European Respiratory Society partnered to produce spirometry technical standards (Graham et al., 2019).

There are many spiritual therapy techniques that impact the vital signs such as Supplications, prayer, and the Quran. In spiritual treatment, recitation of the Quran has been found as a remedy for physical and mental ailments (Amin et al., 2017). The findings revealed that playing the holy Quran recitation resulted in a balance in patients' blood pressure and arterial oxygen pressure (Mirzaeian et al., 2017). As a result, Quran recitation can be used as a therapeutic strategy to restore balance to blood pressure, pulse rate, respiratory rate, and oxygen saturation (Mansouri et al., 2017; Mirzaeian et al., 2017; Nasiri et al., 2017; Nejad et al., 2018; Risnah et al., 2021). The sound of the Holy Quran is made up of sound waves with a precise frequency and wavelength. These waves create oscillating strands that affect brain cells and help them regain their balance and coordination (Mansouri et al., 2017).

According to the World Health Organization, 1.5 million individuals died from chronic respiratory disease, 1.2 million died from cancer (trachea, bronchi, and lung), and 600,000 died from respiratory infections (WHO, 2019). Chronic Obstructive Pulmonary Disease (COPD) affects around 200 million people globally, with 65 million having moderate or severe airway disease, according to most studies, and it is underdiagnosed 72 to 93 percent of the time (Roglic, 2016). A spirometry test is unlikely to aid a compromised patient; instead, it should be delayed until the patient develops a pneumothorax, hypo- or hypertension, or unstable arrhythmias. The vital signs of a patient receiving a pulmonary function test should be stable during the process, and the testing should take place in a well-lit and pleasant environment (Van Gaal et al., 2019). The patient must inhale slowly and deeply and exhale swiftly during the procedure (Cazzola et al., 2020). The patient may be affected by variables that cause changes in normal vital signs (Sapra et al., 2021). Spiritual treatment is a method used by researchers to stabilize vital signs and provide substantial lung function test results (Mansouri et al., 2017; Morris, 2019).

COPD is the third biggest cause of mortality globally, accounting for 3.23 million deaths in 2019. Over 80% of the fatalities occurred in LMICs (low and middle-income countries) (WHO, 2021). Therefore, thus study concerns the effectiveness of spiritual therapy on clients' vital signs during pulmonary function test in Al-Diwaniya Province/ Iraq.

METHOD

An experimental design with an application (first /pre-test, second post-test), study group approach for 106 clients by used simple random sampling method to determine the effectiveness of spiritual therapy therapy for client's pre pulmonary function test in Al-Diwaniyah, Al-Shamiya, and Al- Hamza public hospitals In Iraq. Participant's vital sings (pulse rate, respiratory rate, blood pressure and oxygen saturation) were measured before and after the intervention group. Two groups assigned as Quran intervention and a control group.

Study instrument: Consists of the following:

Demographics questionnaire: This section contains the respondents` age, gender, marital status, educational level, body mass index, occupation.

Quran Therapy: This section the patients listened to Quran (surah Yaseen with Al-Menshawi voice) by using an Mp3 player and a headphone for 15 minutes.

Vital sings: It consists of pulse rate, oxygen saturation, systolic blood pressure, diastolic blood pressure, and respiratory rate. The tools were used a digital pulse oximeter (Pulse Oximeter Jumper 500 E) to measure pulse rate,

oxygen saturation. A digital sphygmomanometer was used (Omron model code: M6 comfort HEM-7360-E) to measure systolic and diastolic blood pressure. While the respiratory rate was measured by manual observation, and surgical alcohol (Valera surgical spirit 70% made in U.A.E) was used to sterilize the instruments.

The data were analyzed First, the mean and standard deviation, frequency and percentage then, paired sample t- test, person correlation and two ways ANOVA. The statistical package for social sciences (SPSS) version 2021and a descriptive statistic method for 106 Samples for clients' pre pulmonary function test. The Significance level is at $p<0.05$.

RESULTS

Table 1 reveals that age of participant's for control group with Mean ± SD 37.94 ± 15.105 years and 42.79 ± 17.348 years for Quran therapy group. According to the gender, the female was 56.6% in control and 58.5% in Quran therapy group. In the marital status the most of participants was married in the two groups 64.2% in control, 77.4% in Quran therapy group. According to educational levels the high percentage of the participants in control and Quran groups had diploma 37.7%. Regarding to the Body Mass Index of the participants were overweight with Mean ± SD 28.20 ± 4.377 kg/m2 in control group, 29.57 ± 4.523 kg/m2 in Quran therapy group. According to the occupation the most of the participants 37.7% housewife in control group, 41.5% in Quran therapy group.

In Table 2 the results showed the difference in Pulse rate between pre and post- test in the control group were increase 1.07 b/m, while decrease in Quran therapy group 9.23 b/m. The results showed the difference in Systolic blood pressure between pre and post- test in the control group were increase 1.41 mm, while decrease in Quran therapy group 5.17 mm. The results showed the difference in Diastolic blood pressure between pre and post- test in the control group were decrease 0.59 Hg, while increase in Quran therapy group 4.07 Hg. The results showed the difference in Respiratory rate between pre and post- test in the control group were increase 0.80 b/m, while decrease in Quran therapy group 4.75 b/m. The results showed the difference in Oxygen saturation between pre and post- test in the control group were decrease 1.95, while increase in Quran therapy group 2.95.

Table 3 showed there were significant statistical correlations between ages with Systolic blood pressure and Oxygen saturation. There were significant statistical correlations between marital status with pulse rate and diastolic blood pressure. There were significant statistical correlations between BMI with Systolic blood pressure, Respiratory rate and Oxygen saturation.

Table 1. Participants Demographics Characteristics

Demographics	Control group		Quran group	
	f.	%	f.	%
Age				
Mean ± SD	37.94 ± 15.105		42.79 ± 17.348	
Total	53	100.0	53	100.0
Gender				
Male	23	43.4	22	41.5
Female	30	56.6	31	58.5
Total	53	100.0	53	100.0
Marital status				
Single	16	30.2	10	18.9
Married	34	64.2	41	77.4
Divorce	1	1.9	0	0
Widow/ Widower	2	3.8	2	3.8
Total	53	100.0	53	100.0
Educational levels				
Illiterate	11	20.8	10	18.9
Primary school	11	20.8	8	15.1
Secondary school	11	20.8	14	26.4
Diploma	20	37.7	20	37.7
High degree	0	0	1	1.9
Total	53	100.0	53	100.0
Body Mass Index				
Mean ± SD	28.20 ± 4.377		29.57 ± 4.523	
Total	53	100.0	53	100.0
Occupation				
Employee	5	9.4	8	15.1
Earner	15	28.3	12	22.6
Retired	4	7.5	4	7.5
Unemployed	9	17.0	7	13.2
Housewife	20	37.7	22	41.5
Total	53	100.0	53	100.0

M = mean of score, S.D=Standard Deviation, f.: Frequency, %: Percentage

Table 2. The Difference in mean between pre and post-test among study groups with regard to participant's vital sings

Pulse rate				
	Pre-test		**Post-test**	**The difference**
	Mean		**Mean**	
Control group	**92.9811**	→	**94.0566**	**1.07↑**
Quran therapy group	**89.4340**	→	**80.2075**	**9.23↓**
Systolic blood pressure				
	Before test		**Post-test**	**The difference**
	Mean		**Mean**	
Control group	**118.3774**	→	**116.9623**	**1.41↓**
Quran therapy group	**120.4151**	→	**125.5849**	**5.17↑**
Diastolic blood pressure				
	Pre-test		**Post-test**	**The difference**
	Mean		**Mean**	
Control group	**78.6415**	→	**78.0566**	**0.59↓**
Quran therapy group	**78.3396**	→	**82.3774**	**4.07↑**
Respiratory rate				
	Pre-test		**Post-test**	**The difference**
	Mean		**Mean**	
Control group	**18.0189**	→	**18.8113**	**0.80↑**
Quran therapy group	**19.7547**	→	**15.3962**	**4.75↓**
Oxygen saturation				
	Pre-test		**Post-test**	**The difference**
	Mean		**Mean**	
Control group	**96.9811**	→	**95.0377**	**1.95↓**
Quran therapy group	**95.1887**	→	**98.1321**	**2.95↑**

Table 3. Pretest and posttest of vital sings differences among participant's Quran therapy group demographics.

Demographics	**Group**	**Statistics**	
		Analysis	**Sig.**
Age	Pulse rate	Cc=.054	.702
	Systolic blood pressure	Cc= .342	.012
	Diastolic blood pressure	Cc=.154	.270
	Respiratory rate	Cc= -.270-	.050
	Oxygen saturation	Cc= -.470-	.000
Gender	Pulse rate	F= 1.356	.255
	Systolic blood pressure	F= .573	.456
	Diastolic blood pressure	F= 2.893	.101
	Respiratory rate	F= .015	.904
	Oxygen saturation	F= 1.571	.221
Marital status	Pulse rate	F= 3.898	.033
	Systolic blood pressure	F= 2.241	.126
	Diastolic blood pressure	F= 5.153	.013
	Respiratory rate	F= 1.718	.199
	Oxygen saturation	F= 2.028	.152
Level of education	Pulse rate	F= 1.374	.270
	Systolic blood pressure	F=.284	.885
	Diastolic blood pressure	F= 2.174	.100
	Respiratory rate	F=.221	.924
	Oxygen saturation	F=.642	.638
Body Mass Index	Pulse rate	Cc=.115	.412
	Systolic blood pressure	Cc=.283	.040
	Diastolic blood pressure	Cc= .047	.736
	Respiratory rate	Cc= -.399-	.003
	Oxygen saturation	Cc= -.446-	.001
Occupation	Pulse rate	F= 1.544	.219
	Systolic blood pressure	F= 2.709	.052
	Diastolic blood pressure	F= 1.915	.138

	Respiratory rate	F= 1.461	.243
	Oxygen saturation	F= 1.570	.212

P=probability value, NS: Non-Significant at P > 0.05, S: Significant at P < 0.05

DISCUSSION

The current study population consisted of 106 clients who were randomly assigned to two groups: Control (n=53), Quran (n=53). The mean age was 28.3 ±1.437 for control group and 27.2 ± 1.066 for study group. The mean of participant's was 41.81 years old in the study. The results consistent with Boussaid et al., 2020 undertook a research in Tunisia that found the mean age of 44.45 years (26-72). The current study consistent with Antoniazza et al., 2018 that conducted a study in Italy and found the sample participants' age, they all reported their age; (4%) of the participants were 50 or younger than 50.

The participants were females 51.6% more than males 48.4% in the study groups. The results consistent with Antoniazza et al., 2018 that conducted a study in Italy and found the sample comprised men (46%), and women (54%).

Regarding to the Body Mass Index, the participants was overweight with mean 29 k/m2. The current study consistent with a study that conducted in 2017, Seo performed a research in Korea that found the body mass index in female was overweight.

The results showed the difference in Pulse rate between pre and post- test decrease in Quran therapy group by 6.32 beats. The current study consistent with study for Lee (2015) that found music interventions reduced heart rate by 4.25 beats per minute. The current study also supported by Elcokany & Abd El Wareth (2019), For Muslim patients, listening to the Holy Quran Recitation (HQR) is a kind of spiritual assistance. Spiritual care is advised since it might impact the patient's comfort. After HQR, the study groups mean heart rate, were lower than the control groups.

The results showed the difference in Systolic blood pressure between pre and post- test increase in Quran therapy group. The results showed the difference in Diastolic blood pressure between pre and post- test increase in Quran therapy group. The current study also supported by Imran, Gul, and Batool (2021) conducted a research in Pakistan to see how Surah Al-Rehman affected the vital signs of post-CABG patients. Surah Al Rehman showed statistically significant impacts on participants' diastolic blood pressure that increased (DBP, p=0.04).

The results showed the difference in Respiratory rate between pre and post- test decrease in Quran therapy group. The results showed the difference in Oxygen saturation between pre and post- test increase in Quran therapy group. The current study also supported by Elcokany & Abd El Wareth (2019), For Muslim patients, listening to the Holy Quran Recitation (HQR) is a kind of spiritual assistance. Spiritual care is advised since it might impact the patient's comfort. After HQR, the study group's mean respiratory rate and shortness of breath were lower than the control groups. The current study also supported by Imran, Gul, and Batool (2021) conducted a research in Pakistan to see how Surah Al-Rehman affected the pain level, oxygen saturation, and vital signs of post-CABG patients. Surah Al Rehman showed reduced RR, and increased oxygen saturation in post-CABG patients.

CONCLUSIONS

At the conclusion of this study, the listening to the Qur'an pre pulmonary function test had a positive effect on the regulation or stability of vital signs. The listening to the Qur'an decreased the heart rate and respiratory rate and increased the blood oxygen saturation and blood pressure pre and post pulmonary function test.

The age and body mass index have the most influence on the vital signs of the clients who listen to the Quran pre pulmonary function test.

ETHICAL CONSIDERATIONS COMPLIANCE WITH ETHICAL GUIDELINES

All experimental protocols were approved by the Al-Diwaniya Health Directorate in Iraq, and all experiments followed the permitted procedures.

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AUTHOR'S CONTRIBUTIONS

Study concept, Writing, Reviewing the final edition by all authors.

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The authors report no conflict of interest

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