

The Effect of Benson's Relaxation Technique Training Program on Elderly Patients with Renal Failure

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Abstract Renal failure means the kidney inability to maintain liquid and electrolyte balance, it's considered chronic disease, and it affects patients' psychotic conditions in addition to its physical side effects. **Aim of the study:** to appraise the effect of Benson's relaxation technique training program on elderly patients with renal failure **Design:** A quasi- experimental design was used. **Setting:** The study was conducted at the hemodialysis units at Aswan university hospital and Aswan General Hospital. Egypt. **Sampling:** A purposive sample was used. **Sample size:** 60 elderly patients with renal failure divided into two equal groups (study and control group). **Tool of data collection:** two tools were used. **Tool I:** a structured interviewing questionnaire covering three parts: **Part 1:** Demographic characteristics of elderly patients. **Part 2:** past medical history. **Part 3:** elderly patients' knowledge of about renal failure and Benson's relaxation technique. **Tool II: The Depression Anxiety Stress Scales (DASS):** consists of 21 questions which the 7 questions are used for measuring any symptoms of depression, anxiety and stress. **Results:** The study revealed that the elderly patient's' age ranged from 60 to 80 years. 66.7% and 70 % of control and study group elderly patients always suffering from anxiety, and 76.7% and 73.3% of them always suffering from depression. The total knowledge of study group increased than control group with highly significantly difference improvement after applying program. **Conclusion:** there was highly significant differences improvement for study group of elderly patients' knowledge, level of depression, stress and anxiety than control group post applying of the training program than pre. **Recommendation:** Provide all elderly patients in hemodialysis unit with educational brochures, posters and simple handbooks about renal failure and Benson's relaxation technique.

Keywords: renal failure, Benson's relaxation technique

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1. Introduction

The world's older population continues to grow at an unprecedented rate so the number of elderly people is growing faster than any other age group, but that does not necessarily mean that they are living healthier [1]. Globally, the population aged 65 and over is growing quicker than all different age groups. The number of persons aged 80 years or over is predictable to triple, from 143 million in 2019 to 426 million in 2050 [2]. Furthermore, elderly is a fundamental risk factor for the development of many chronic disease especially kidney disease has been found to be more prevalent in those over the age of 60 when compared to the rest of the general population [3].

Chronic kidney failure is the progressive and irreversible loss of kidney functions. Two-three percent of the current world's population is suffering from chronic renal failure and every year the rate increases twice [4].

Range of Chronic kidney disease (CKD) is varying from proteinuria and renal failure to chronic renal failure [5]. Chronic renal failure documented as one of the most important cause of morbidity and mortality [6]. The prevalence of the condition in the US elderly was much higher at about 39.4% of persons aged 60+ years have been noted to have chronic renal failure versus 12.6 and 8.5% of persons aged 40-59 years and 20-39 years, respectively [7]. According to World Health organization report in France the mean age of patients on dialysis is 70.2 years and in the UK it is around 65. In our practice, the 2011 census of the Brazilian Nephrology Association revealed that 31.5% of the patients on renal replacement therapy were 65 or older, an increase of 0.8% in relation to the previous year [8,9].

Common treatment strategies for chronic renal failure incorporate renal replacement treatment, hemodialysis, peritoneal dialysis and kidney transplant; hemodialysis is the most commonly connected strategy, with major impacts on patient health [10]. In spite of the fact that hemodialysis utilizes as advanced treatment of chronic

renal failure patients, it may be unpleasant involvement for the patients and is accompanied by a high incidence of mental disorders such as depression and anxiety [11].

In the last 3 decades, psychological factors have attracted more attention in end stage like patients with chronic renal failure [12]. Previous researches have reported some psychological problems issues like suicide ideation, depression, anxiety, sexual disorders, social issues, paranoia, physical complain, compulsive disorders, psychoses, aggression, and phobia; although researchers are not unanimous in terms of prevalence and intensity of these problems among hemodialysis elderly patients [13].

Depression is the fourth cause leading to disability in the world, is one of the most common psychiatric disorders in hemodialysis elderly patients. The prevalence of depression was from 5% to 71.4% among elderly patients undergoing hemodialysis [14]. Depression in hemodialysis patients increases their vulnerability to suicidal behaviors [15]. Anxiety disorder of final renal failure stage patients is two times more than mean of general anxiety so it is emphasized to diagnose and cure anxiety for hemodialysis patients [16]. Also hemodialysis patients have a very high anxiety level compared to other chronic disease patients' especially elderly people [17].

Depression and anxiety are considered to be the most common end-stage renal disease-related psychological disorders, with adverse effects on the course of disease and treatment process and are recognized as an independent risk factor for mortality in elderly patients [18]. And both of them associated with unhealthy forms of behavior, such as alcohol and tobacco use, poor eating habits, sedentary lifestyle and non-compliance with treatment [19].

Stress refers to the consequence of the failure of a person to respond appropriately to emotional or physical threats [20]. Mental health is directly related to perceived stress [21]. Inappropriate coping decreases quality of life and leads to physical, mental, economic, social, and emotional problems [22]. Management of anxiety, depression, and stress among hemodialysis elderly patients includes pharmacological and non-pharmacological interventions [16].

Recent researches focused on non-pharmacological techniques. Considering the complications associated with pharmacological treatments, recently, non-pharmacological techniques, commonly known as complementary therapies, have attracted the attention of patients including hemodialysis patients. Complementary therapies are holistic in nature and are applied to increase patients' physical and mental well-being [23]. Common complementary therapies interventions include biofeedback, music therapy, yoga, mind distraction techniques, relaxation, time control, lifestyle changes, cognitive restructuring and guided imagery. Relaxation techniques leads to fatigue reduction on elderly patients and have less side effects in hemodialysis unit [24].

Relaxation is one of most useful non pharmacological technique, which reduces stress, depression and anxiety through impact on mental and physical conditions, decreased the anxiety level, mood disturbance, body discomfort, and autonomic nervous system's activity and improves the elderly patients' quality of life in

hemodialysis unit [25,26]. Relaxation techniques acts by balancing the posterior and anterior hypothalamic regions, reducing the activities of sympathetic nervous system and inducing catecholamine secretion leads to reduced muscle tension, alleviation of adverse physiological effects, reduced blood pressure and regular breathing, pulse rate and muscle spasms induced by stress [27].

Benson's relaxation is one of successful method interventions which uses for elderly patients with renal failure, introduced in 1970, seems to be a suitable option, considering its simplicity, requires no special equipment's and easy application [28]. Which is one of the effective nursing intervention methods to use, depending on muscles expansion with deep breath that they are effective methods in psychological factors improvement and enhance quality life in elderly patients on hemodialysis through its effect of complete relaxation of all the muscles [29].

Elderly patients with renal failure are exposed to stress, anxiety and depression even more severe than others in hemodialysis unit. So the nurses play an important role to decrease stress, anxiety and depression by leaning elderly patients to apply Benson's relaxation technique. Also, nurses determine the adequacy and quality of care for elderly patients in hemodialysis unit and provide them by suitable health education about renal failure and its management. Nurse work on increasing renal failure elderly patients' awareness of cares minimizes treatment costs and economic burden of society or elderly patients' problems [30].

1.1. Significance of the Study

Number of older adults projected to increase dramatically over the next two decades. Four decades later, individuals 65 years old and older now comprise the most rapidly growing segment of the end-stage renal disease population in wealthier countries [31,32]. Presently, life expectation of Egyptian males and females at birth is 70.82 years and 76.2 years, respectively [33].

Benson's relaxation creates balance between anterior and posterior hypothalamus decreases sympotic nervous system and secretion of catechol amine which lessens muscular tension and undesired body physiologic effects. It is one of most useful non-pharmacological technique which reduces stress through impact on mental and physical conditions, depression, mood, anxiety, and self-steams [12,25]. Among relaxation methods, Benson's relaxation method is one of the easiest to learn and administration. So nurse uses it for management stress, anxiety and depression among elderly hemodialysis patients by help them to apply Benson's relaxation techniques [20,21]. Despite the importance of reduction of stress and anxiety among elderly patients, there is no evidence to evaluate the impact of it on elderly patients in hemodialysis unit. Benson's relaxation including mindfulness techniques that are affected on wide range of physical and psychological signs and symptoms such as anxiety, pain, depression, mood and self-esteem and reduced stress. It most have less side effects, less costs and no complications on elderly patients [34,35].

1.2. Aim of the Study

To appraise the effect of Benson's relaxation technique training program on elderly patients with renal failure.

1.3. Research Hypothesis

H (1). Study group of elderly patients' knowledge will improve post applying training program than control group

H (2). Study group of elderly patients with chronic renal failure who apply Benson's relaxation training program will improve their psychological status (anxiety, depression and stress) than control group.

2. Subjects and Method

2.1. Study Design

A quasi-experimental design was utilized to achieve the purpose of the present study.

2.2. Settings

The current study was conducted at the hemodialysis unit at Aswan university hospital and Aswan General Hospital.

2.3. Subjects

A purposive sample of (60) elderly patients of both sexes, who arranged to hemodialysis units in the above mentioned setting, undergoing hemodialysis since at least six months and agree to participate in the study. The elderly patients were taken and distributed randomly and divided into two equal groups and fulfilling the following criteria:

Study group: consisted of 30 of elderly from two sexes who received the education about Benson's relaxation training program and began implementation of the program before hemodialysis and during Hemodialysis

Control group: consisted of 30 of elderly from two sexes who was exposed only to regular hemodialysis.

Sample size:

It was calculated using epidemiological information (EPI info.) program version 6.02

Criteria for selection of the subjects:

- Aged 60 years and above, of both sexes.
- Able to communicate effectively.
- Undergoing hemodialysis for at least six months, and scheduled for maintenance hemodialysis 2 or 3 times per week.
- Accept to participate in the study.

Exclusion criteria:

- Elderly patients with cognitive disability or physical disabilities (e.g. paralysis, coma).
- Patients with kidney transplant or peritoneal dialysis.

Tools for data collection:

To achieve the aim of the current study two tools were utilized by the researchers. These tools were as follow:

Tool I: Structured interviewing questionnaire sheet;

This tool was developed and used by the researchers after extensive literature review and it included three parts:

- Part I: Socio-demographic data of the elderly: This part developed by the researchers, it was comprised of ten items related to patients' age, sex, marital status, educational level, residence, occupation, income, and living condition.
- Part II: Medical history of Elderly: It involved questions about elderly patients' present complaints (as anxiety, stress, and depression), disease status which included presence of others chronic disease as diabetes mellitus, hypertension, number of medication used dialysis frequency, blood test results, family history duration of disease, and duration of dialysis session.
- Part III: Elderly patients' knowledge: It was developed by the researchers after reviewing of current literature to assess patients' knowledge about renal failure and Benson's relaxation technique. It included 8 questions about renal failure (as meaning about renal failure, types, causes, sing & symptoms, diagnoses, treatment, prevention and complications) and 28 questions about Benson's relaxation technique (as meaning, benefits and its effect on anxiety, depression, and stress, and Benson's relaxation technique instructions).

Scoring System

Elderly patients' knowledge about renal failure and Benson's relaxation technique was done as follows correct answer take a score of one grade, while incorrect answer or did not know take zero. The scores obtained for each set of questions ware summed up to get the total score for elderly patient's knowledge. The total knowledge score was computed out of 36, it classified into three categories:

- Poor knowledge that represents < 50% scored from (0 to <18 question)
- Fair knowledge from 50 to <75% scored (18 < 27 question).
- Good knowledge 75% or more scored from (27- 36 question).

Tool II: The Depression Anxiety Stress Scales (DASS):

It was developed by Crawford, (2003) [36] updated from Ottaghi, et al., (2016) [37]. It is a self-report questionnaire commonly used to assess levels of anxiety and depression.

The questionnaire comprises, DASS- 21 assessed depression, anxiety and stress. This questionnaire consists of 21 questions which the 7 questions are used for measuring any symptoms of depression, anxiety and stress.

Scoring system:

The range of questions is classified in four options. Elderly patients asked to choose one response from the four given the rating scale as: not apply take zero, some of the time take 1, a good part of time= 2, most of the time=3. Scores ranged from 0 to 3 and the total score was 63 grad divided into three ranges:

- Normal from (0 - 9)
- Average (moderate) from (10 - 20)
- Severe from (21+)

Validity and reliability:

For validity purposes, the researchers conducted an extensive literature review and developed the questionnaires from the previously used tools and

reviewing the pertinent reviews. Tool I was designed by the researchers and revised by five experts in the field of community health nursing (for content validity). While tool II, reliability was 0.83. Reliability analysis was ascertained with Cronbach's alpha to determine the extent to which the items in all tools are related to each other.

Pilot study:

A pilot study was conducted to assess the applicability of the tools, the feasibility of the study and to estimate the time needed for data collection. It was conducted on 10 % (6) of the total participants according to the selection criteria. All elderly patients participated in the pilot study excluded from the study sample. Based on the results of the pilot study and expert's opinion, modifications and omissions of some details were done and then set the final fieldwork schedule.

Fieldwork:

This study was carried out through three sequential phases: interviewing & assessment phase, implementation phase and evaluation phase. The data collection period was done for 6 months in period from beginning of September 2016 to the end of February 2017.

The assessment phase:

During this phase, the researchers explained the purpose of the study, tools components, and steps of Benson relaxation technique (BRT). The time needed for completing the questionnaire was ranged from 30 - 45 minutes for each elderly patient.

The planning and implementation phase:

- In this phase, the researchers selected elderly patients randomly and divided into two equal groups (30 elderly patients per each group), each patient interviewed individually by the researchers.

- The first interview was carried out by the researchers for each participant of both groups for collecting baseline data about socio-demographic and medical history. The interview carried out often in hemodialysis unit. It took about 30 - 45 minute using tools (I, II).

- **The first group;** elderly patients were the control group which received hemodialysis and routine care.

- **The study group;**

The researchers presented training program about Benson relaxation technique to elderly patients by using some illustrating pictures, brochure, video films, and demonstration and re-demonstration to learn elderly patient about this exercise and how to do it. The technique was performed before, during or after hemodialysis for 15 minutes for each time. The elderly patient was advised to do these procedures twice a day for 15 minutes every day. This technique was carried out once in the presence of the researchers in a private room in the hospital and again by the elderly patient at home. Benson's relaxation training program was done in 4 sessions each session lasted from 30- 45 minute.

Benson's relaxation includes the following steps respectively:

1. Sit quietly in a comfortable position.
2. Close the eyes.
3. Deeply relax all muscles, beginning at the soles for the feet to the top of the head moving forward up, and relax all parts of the body.
4. Take a breath from the nose. Exhale from the mouth whenever exhaling, repeat one word or number

silently (as God), inhale, and exhale with comfort and confidence.

5. Do this for 15 minutes. Try to keep the body and muscles relaxed, and repeat the desired word in their mind. Elderly patients can open their eyes to check the time, but do not use an alarm.
6. When they finish, sit quietly for several minutes at first with closed eyes and later with opened eyes.
7. Do not worry about whether you are successful in achieving a deep level of relaxation. Maintain a passive attitude and permit relaxation to occur at its own pace.
8. When distracting thoughts occur, ignore them and continue repeating the word (God). With practice, the response should come with little effort.
9. Practice the technique twice a day, but not within 2 hour after any meal as the digestive processes seem to interfere with the elicitation of anticipated changes.

The evaluation phase:

This phase was emphasized on estimating the effect of the intervention after applying training program about Benson's relaxation technique on elderly patients' knowledge, anxiety and depression level, through a comparison between both groups.

2.4. Ethical Considerations

- An official approval was obtained from administrative authorities to carry out the study after explanation of the purpose of the study.
- Approaches to ensure the ethics were considered in the study regarding confidentiality and informed consent. Confidentiality was achieved by the use of closed sheets with the names of the participants replaced by numbers. All participants were informed that the information they provided during the study would be kept confidential and used only for statistical purpose.
- Written informed consent was taken from all elderly patients before being enrolled in the study after explaining the purpose of the study.
- The elderly patients were informed that their participation in the study was voluntary and they could withdraw from the study whenever they decide.
- The findings would be presented as group data with no personal participant's information remained.

2.5. Statistical Analysis

The collected data were scored, tabulated and analyzed using (SPSS) version 20. The collected data were presented in tables and graphs using the actual numbers and percentages. Appropriate statistical tests were used to analyze the data as, chi-square test (X^2), independent sample t-test. The level of significance was set at $p < 0.05$.

3. Results

Table 1: Illustrates that the elderly patients' age ranged from 60 to 80 years with mean \pm SD = 68.9 \pm 5.3 years.

Males were more prevalent in the studied subjects they constituted 56.7 % and 60% in control and study group respectively of the elderly patients, while 46.7% and 40% of them were females in control and study group respectively. Regarding marital status 56.7% and 50% in control and study group respectively of the elderly patients were married. Regarding the level of education 33.3% and 40% of the control and study group patients had secondary education, while 30% of them were illiterate. On the other hand 70% and 76.7% of control and study group elderly patients' income was sufficient of essential needs respectively. Also, 50 % and 56.7 of control and study group elderly patients living with their family while 6.7 % and 3.3 of them living alone respectively.

Table 2 shows that, it was found that 50 % of the elderly patients suffering for renal failure since 1- 5 years. Also, 66.7% and 70 % of control and study group elderly patients always suffering from anxiety, and 76.7% and 73.3% of them always suffering from depression respectively. While 63.3% and 60% of control and study group elderly patients always suffering from stress respectively. Regarding dialysis frequency 60% and 63.3% of control and study group patients was three sessions per week, and reported the duration of each session lasts 4 hours respectively.

Table 3 shows the elderly patients' total knowledge about renal failure and Benson's relaxation technique pre/post applying training program. It appears from the

table that the total knowledge of study group increased than control group with highly significantly difference improvement after applying training program at $P \leq 0.01$.

Table 4 explores that anxiety, depression and stress among study group decreased post applying training program than pre at $P \leq 0.01$. Also, the study group total mean scores for anxiety, depression and stress of elderly patients were improved than control group with significantly difference improvement after applying training program.

Figure 1 presents that there was significantly difference improvement in comparison of elderly patient's depression between pre and post training program among study group ($P < 0.002^*$) than control group ($P > 0.17$) after applying training program.

Figure 2 shows that there was significantly difference improvement among study group of elderly patients' stress ($P < 0.001^*$) in comparison between pre and post training program. While there was no significantly difference improvement among control group ($P > 0.18$) between pre and post applying training program.

Figure 3 shows that there was significantly difference improvement among study group of elderly patients' anxiety ($P < 0.04^*$) in comparison between pre and post training program. While there was no significantly difference improvement among control group ($P > 0.11$) between pre and post applying training program.

Table (1): Frequency Distribution for Demographic Data of Elderly patients with Chronic Renal failure (No. = 60)

Items	Control group		Study group	
	No.=30	%	No.=30	%
<u>Age (years)</u>				
60 – 65 year	14	46.7	12	40
66 - 75 year	11	36.7	14	46.7
76 + year	5	16.6	4	13.3
Mean \pm SD = 68.9 \pm 5.3				
<u>Sex</u>				
Male	17	56.7	18	60
Female	13	43.3	12	40
<u>Marital status</u>				
Widow	9	30	11	36.7
Married	17	56.7	15	50
Divorced	4	13.3	4	13.3
<u>Level of education</u>				
Illiterate	9	30	9	30
Basic education	8	26.7	6	20
Secondary education	10	33.3	12	40
University education	3	10	3	10
<u>Residence</u>				
Rural	17	56.7	16	53.3
Urban	13	43.3	14	46.7
<u>Occupation</u>				
Working	7	23.3	6	20
Not Working	23	76.7	24	80
<u>Income</u>				
Insufficient	5	16.7	4	13.3
Sufficient of essential need	21	70	23	76.7
Sufficient and save	4	13.3	3	10
<u>Living condition</u>				
Family (Wife/ husbands)	15	50	17	56.7
Siblings	13	43.3	12	40
Alone	2	6.7	1	3.3

Table 2. Distribution of Elderly Patients Medical History (No. = 60)

Items	Control group		Study group	
	No.=30	%	No.=30	%
<u>Duration of Renal failure disease:</u>				
1-5 years	15	50	15	50
6-10 years	11	36.7	12	40
> 10 years	4	13.3	3	10
<u>Presence of others chronic illness</u>				
Diabetes mellitus	11	36.7	10	33.3
Hypertension	10	33.3	13	43.3
Osteoarthritis or osteoporosis	9	30	7	23.4
<u>Anxiety</u>				
Always	20	66.7	21	70
Sometimes	9	30	8	26.7
No	1	3.3	1	3.3
<u>Depression</u>				
Always	23	76.7	22	73.3
Sometimes	6	20	8	26.7
No	1	3.3	0	0.0
<u>Stress</u>				
Always	19	63.3	18	60
Sometimes	9	30	11	36.7
No	2	6.7	1	3.3
<u>Dialysis frequency</u>				
Twice/week	12	40	11	36.7
Three/ week	18	60	19	63.3
<u>Duration of dialysis session</u>				
3 hours	18	60	19	63.3
4 hours	12	40	11	36.7

Table3. Distribution of Elderly patients' Total Knowledge about Renal Failure and Benson's Relaxation Technique Pre/Post Training Program (N = 60)

Total Knowledge score	Pre		Post		χ^2	P- value
	N.	%	N	%		
<u>Good</u>						
Study group	1	3.3	26	86.7	21.76	0.001*
Control group	1	3.3	2	6.7		0.18
<u>Fair</u>						
Study group	9	30	4	13.3	23.19	0.043*
Control group	10	33.3	13	43.3		0.18
<u>Poor</u>						
Study group	20	66.7	0	0.0	26.01	0.01*
Control group	19	63.4	15	50		0.17

Table 4. Comparing the Mean scores of depression, stress and anxiety between Study and Control group Pre/Post Training Program (N = 60)

Items	Pre		Post	
	Mean \pm SD	P- value	Mean \pm SD	P- value
<u>Depression</u>				
Study group	5.89 \pm 0.83	0.98	2.71 \pm 0.92	0.001*
Control group	5.97 \pm 0.85		6.03 \pm 0.89	
<u>Stress</u>				
Study group	5.63 \pm 0.94	0.80	2.40 \pm 1.09	0.001*
Control group	5.57 \pm 0.94		5.80 \pm 0.99	
<u>Anxiety</u>				
Study group	6.29(0.86)	0.88	5.69 \pm 0.78	0.04*
Control group	6.31(0.83)		6.37 \pm 0.77	

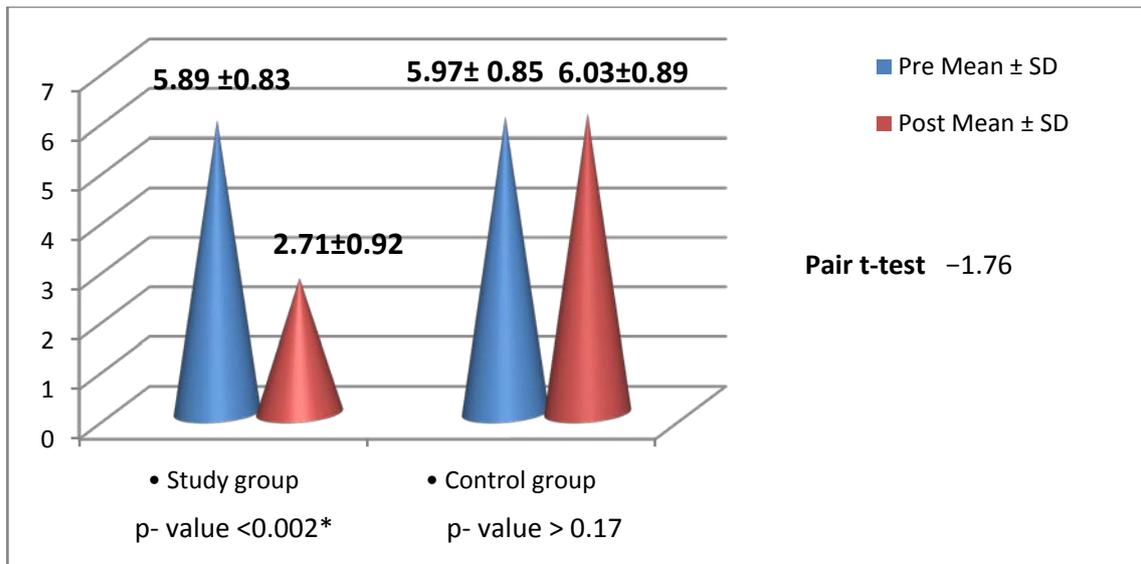


Figure 1. The Comparison of Elderly Patients' Depression mean score between Pre and Post Training Program (N=60)

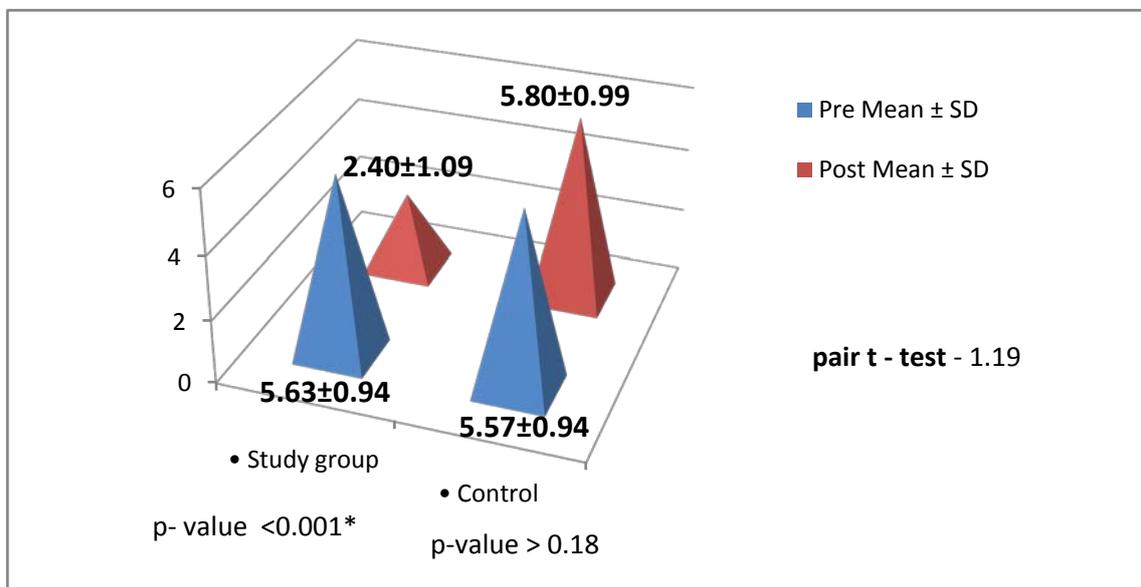


Figure 2. The Comparison of Elderly Patients' Stress mean score between Pre and Post Training Program (N=60)

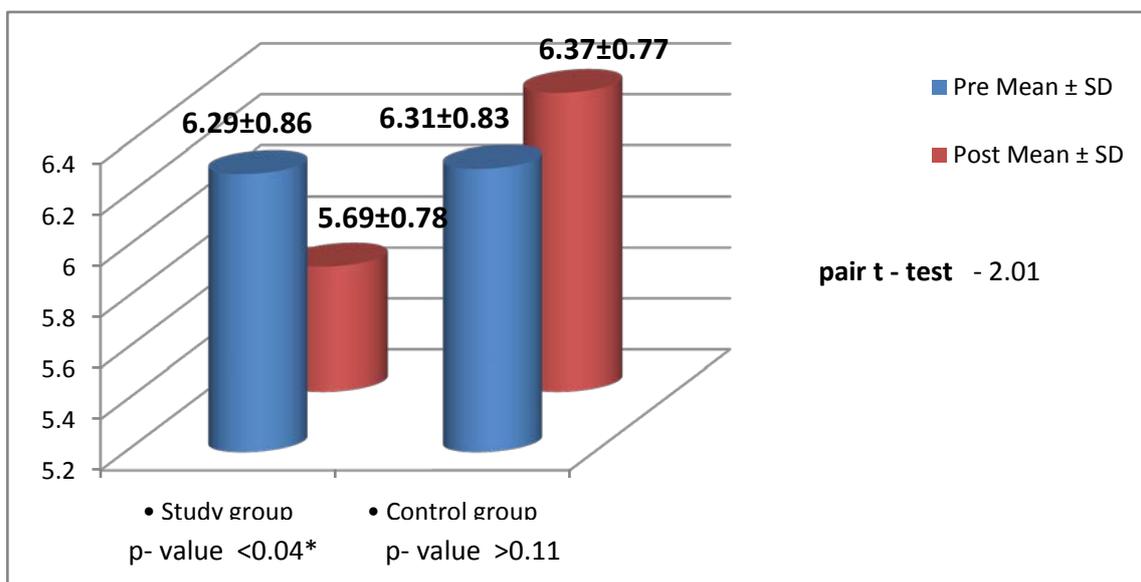


Figure 3. The Comparison of Elderly Patients' Anxiety means score between Pre and Post Training Program (N=60)

4. Discussion

The elderly is a layer of society & they are considered as a growing population with special needs in modern world to keep pace with huge industrial, science & technological development. Renal failure means the kidney inability to maintain liquid and electrolyte balance. It affects elderly patients' psychological conditions in addition to its physical side effects [17,37]. Renal failure treatments methods include kidney transplantation, hemodialysis and peritoneal dialysis (PD). Hemodialysis is the most common treatment method for chronic renal failure patients [38]. Depression, anxiety and stress are the most common psychological disorder in elderly patients undergoing hemodialysis. This disorder has adverse effects on the course of disease and treatment process and is recognized as an independent risk factor for death in hemodialysis elderly patients [39,40]. Relaxation is one of the nursing interventions that can be used as non-pharmacological therapies to decrease depression, anxiety and stress, it is easily learned by the elderly patients [41].

Socio-demographic data of the elderly patients and their medical history

Regarding to age of elderly patients, the mean age of them was 68.9 ± 4.2 years, majority of the studied elderly patients were married, Around third of elderly patients were illiterate and nearly half of them had secondary education, while two third of them their income was sufficient of essential need only, results were in consistent with Masry, (2017) [26] & Otaghi, (2016) [37] who stated that 55.7% of their participants were married, 50% of study subjects were illiterate and young old also not have enough income.

As for sex, the present study revealed that males constituted more half of the studied subjects, and more than half of them living with their family while minority of them living alone. These results in line with Heshmatifar, (2015) [42] & Kiani, et al., (2017) [17] who mentioned that the rate of progression of chronic renal disease is more rapid in men than in women. The rate of progress of renal disease is influenced by gender. Worsening of renal function in patients with chronic renal disease is more rapid in men than in women.

Concerning to duration of renal failure disease half of the elderly patients suffering for renal failure since 1- 5 years. Some of the studies which confirms this point are Kiani, et al. (2017) [17] who study tidal was "The effect of applying Benson's relaxation method on hemodialysis patients: changes in stress, anxiety and understanding pain" they revealed that around two thirds of hemodialysis subjects dialyzed below 5 years and one third of them on hemodialysis for more than 5 years. In the opposite direction, a study conducted in Taiwan by Yang, et al. (2017) [43] reported that the majority of their subjects had been on dialysis for more than 5 years.

The maximum of studied elderly patients suffering from anxiety and depression. Same results have been reported in the studies by Dumitrescu, et al. (2009) [44] & Mollahadi et al. (2010) [45] who mentioned that the means of stress, anxiety, and depression is high among the patients with hemodialysis (HD). Also, the studies

confirms this point with Kiani, (2017) [17] & Zyga (2015) [46] who show that anxiety is one the common reported problems among the elderly patients with chronic hemodialysis and its prevalence are from 45% to 89%. Also, this results agreement with Nazemian, (2008) [47] who study title was "Effect depression and anxiety in hemodialysis patients", he showed that (51.4%) of hemodialysis patients had state anxiety and (49.7%) had trait anxiety. On the other hand a systematic and meta-analysis study by Mirzaei, (2015) [48] in Iran, they reported that, the prevalence of depression in patients undergoing hemodialysis was 63% of them. Ahmadzadeh, (2012) [40] who study, the prevalence of depression, anxiety, combined depression and anxiety in hemodialysis patients were 50, 12/2, and 7/8 percent respectively.

In the same context Cohen, et al., (2016) [49] who illustrated that a high prevalence of depression symptoms in patients who underwent hemodialysis. In another study carried out by Knuth B, et al. (2014) [50] in Brazil, they found the prevalence of depressive symptoms in hemodialysis patients was 48% of studied sample. From the researchers point of view some scholars introduced depression as the most common psychological disorder in elderly patients undergoing hemodialysis.

As regards dialysis frequency the present study revealed that majority of elderly patient in hemodialysis do three sessions per week, and each session lasts 4 hours. This finding is corresponding with Lopes, et al., (2016) [51] who mentioned that hemodialysis is usually done three times a week, for 3 to 4 hours a day. It depending on how well the kidneys work, and how much fluid in the body and weight which they have gained between treatments sessions.

Concerning to elderly patients' knowledge about renal failure and Benson's relaxation technique, the current study shown that there is a significantly difference improvement in knowledge after applying training program. This was in harmony with Wright, et al. (2013) [52] who found that educational tool increased the participants' awareness and knowledge about several topics of critical importance in chronic kidney disease (CKD) & hemodialysis, aware risks of CKD, knew that heart disease could be associated with having CKD, and better understood goals of CKD risk management. On same line with Lopez-Vargas, et al., (2016) [53] who mentioned that, there was a significant improvement in the mean knowledge score after the educational intervention program about chronic kidney disease, indicating that the educational tool was effective in improving CKD knowledge in the post educational intervention program, and decrease their risk for CKD progression, a first and important step to actualizing behavior change as lifestyle modification in terms of healthy eating, limiting sodium intake, increasing hydration and exercise were the most common goals.

On the others hand Lambert, et al., (2015) [54] reported that lack of knowledge is a barrier to elderly patient engagement in self-management of renal failure disease. Well-designed interactive educational interventions not only can improve elderly patient's knowledge but also foster patient engagement in self-management toward renal failure risk factor management and decrease elderly patients' anxiety and stress.

The current study results there was highly significance improvement of study group knowledge about Benson's relaxation technique. This rustles agree with Otaghi, (2016) [37], Tahmasbi, (2016) [55] & Pasyar, (2015) [56] in their studies have been carried out on the effect of relaxation on hemodialysis patients training on Benson's relaxation technique, they found that Benson relaxation technique is simple, easy to learn and implementation and does not require high cost, and simple non-aggressive method in nursing cares if effective. So patient apply it decrease anxiety, stress and depression. From the researchers opinion increasing elderly patients' awareness about management of renal failure, cares lessens treatment costs and economic burden of elderly patients or society, it will decrease many health problems among elderly patients.

This part proved the research hypothesis **H₁**, which stated that "study group of elderly patients' knowledge will improve post applying training program than control group".

Part II: effect of training program on depression, anxiety and stress among elderly patients.

Results of this study showed that anxiety, depression and stress among study group decreased post applying training program than pre at $P \leq 0.01$. Study group total mean scores for anxiety, depression and stress of elderly patients were improved than control group with significantly difference improvement after applying training program. According to the results, which indicated the positive effect of Benson relaxation technique on anxiety, depression and stress in hemodialysis of elderly patients. Some of the studies which confirms this point as Otaghi, et al., (2016) [37] who found applying Benson's relaxation decrease level of stress, anxiety and pain. In the same context with Torabi, (2013) [57] reported that the significant effect of Benson's relaxation method and pressure massage on patients' anxiety before kidney transplantation. Also, agree with the study of Gorji, et al., (2013) [4] who indicated the anxiety level decrease in Benson's relaxation method at the end of fourth week and they believed that decrease of anxiety and stress can relax the patients undergoing hemodialysis.

Concerning elderly patient's anxiety the current study revealed that there was significantly difference improvement among study group of elderly patients' anxiety ($P < 0.04^*$) in comparison between pre and post training program. While there was no significantly difference improvement among control group ($P > 0.11$) between pre and post applying training program. This results agree with the study of Rambod, et al., (2014) [41] reported that there was decrease level of anxiety with significantly difference after application of Benson's relaxation technique, so it is necessary for hemodialysis patients to carry out the Benson's relaxation technique always and continuously which reflected on improving physical activity. On opposite side a study done in Yogyakarta by Kurniasari, (2016) [58] who reported that Benson's relaxation technique have low effect on anxiety scores of hemodialysis patients. From the researchers point of view this conflict in this results may be explained by high prevalence of depression, stress and anxiety among elderly patient, and may be due to limited practiced

time period while Benson's technique need prolonged period to be effective.

As regarding to elderly patients' stress, the results of the current study reported that there was significantly difference improvement among study group of elderly patients' stress ($P < 0.001^*$) in comparison between pre and post training program. While there was no significantly difference improvement among control group ($P > 0.18$) between pre and post applying training program. This results agree with Otaghi, et al., (2016) [37] found that there was positive effect of applying Benson's relaxation technique on improving the level of stress and anxiety among patients undergoing hemodialysis. On opposite side a study done by Feyzi, (2015) [59] reported that there was no statistically significant change in patients' level of stress and anxiety who undergoing hemodialysis. It may be due to permanent going to hemodialysis unite, long period and burden costs of treatment.

Regarding to depression among elderly patients, the present study revealed that there was significantly difference improvement in comparison of elderly patients' depression between pre and post training program among study group ($P < 0.002^*$) than control group ($P > 0.17$) after applying training program. This result was in the same line with Field, (2006) [60] revealed that the mean score of depression in the intervention group reduced from 9 ± 3.5 before the intervention to 7.5 ± 3.3 after the intervention, and Benson's relaxation technique (BRT) is effective in reducing depression in elderly hemodialysis patients. This result is supported by Heidari Gorji, (2013) [23] who reported that the effects of relaxation training, and tricyclic antidepressants on depression, cognitive behavioral therapy and relaxation training were equally effective in the alleviation of depression symptoms. Depression scores in cognitive behavioral therapy, relaxation and antidepressant groups decreased by 82%, 73% and 29%, respectively. On the opposite side a study done in Iran by Otaghi, (2016) [37] who found that Benson's relaxation technique decrease the depression level but without significant difference found. From the researchers' opinion elderly patients require continuous applying of Benson's relaxation technique to reduce stress, depression and anxiety. Thus it is necessary for the elderly patients to carry out the Benson's relaxation technique always and continuously. Relaxation is effective as stress reducers and can reduce stress and anxiety in these elderly patients partly.

This part answered to the research hypothesis **H₂**, which stated that "Study group of elderly patients with chronic renal failure who apply Benson's relaxation training program will improve their psychological status (anxiety, depression and stress) than control group".

5. Conclusion

It could be concluded that, there was highly significant differences for study group of elderly patients' knowledge regarding renal failure, and Benson's relaxation technique improved than control group after implementing of the training program than pre. Also, study group of elderly patients' depression, stress and anxiety decrease (improved)

post applying program than pre, with highly statistically significant differences.

6, Recommendation

In light of the study findings, the following recommendations are proposed:

- Provide all elderly patients in hemodialysis unite by simple educational pamphlets and posters about renal failure and technique.
- Establish booklet about use the Benson's relaxation technique should be available at hemodialysis unit and outpatient hospital clinics, and geriatric health centers for elderly persons.
- Further studies on the impact of Benson's relaxation technique with a large number of elderly patients with different chronic diseases.

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