IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 5, Issue 3 Ver. VI (May. - Jun. 2016), PP 45-55
www.iosrjournals.org

Combination of Physical Exercises Program with Music Activities and Its Effect on Musculoskeletal Pain, Anxiety and Depression for Institutionalized Elderly

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Abstract: *Elderly populations constitute a large segment of Egyptian community. Physical and psychological changes occurs during elderly stage makes them complain frequently from muscle pain, anxiety and depression.*

The aim of this study *was to evaluate the implementation of physical exercises program combined with music activities on musculoskeletal pain, anxiety and depression for institutionalized elderly.*

Material and methods, *Quasi experimental design was used. The study was conducted in Elsaada Geriatric Home in Tanta City; Egypt. 20 elderly subjects of the residents firstly conduct physical exercises for one hour/day for two weeks. Two weeks after, implement physical exercise combined with music activities for another two weeks. The effect of interventions on pain, anxiety and depression was evaluated using Visual Analogue Scale and Behavioral rating scale of pain, Beck Anxiety Inventory and Geriatric Depression Scale.*

Results*: there was a statistically significant differences found between the effect of physical exercises intervention and physical exercises with music intervention in relation to levels of depression; anxiety and pain with a difference mean 2.85±4.38, 7.65±5.32 and 1.35±1.50 respectively.*

Conclusion and Recommendation*: This study provides evidence that the combination between exercise and music interventions is more effective tools for relief of pain, anxiety, and depression among elders. The study recommended that the geriatric home should involve music activities and exercise program on their daily schedule. Also, nurses can use exercise and music interventions beside each other as safe, inexpensive and effective interventions, for elders with musculoskeletal pain, anxiety or depression.*

Keywords: *Elders, Pain, Anxiety, Depression, Exercise, and Music.*

I. Introduction

The elderly population has grown proportionally faster in Egypt. The percentage of population aged 65+ reached to 5.0% in 2010 and it is projected to reach 14.2% in 2050. Life expectancy in Egypt reached also 72.3 years in 2010 and it is projected to reach 79.1 years in 2050[(1)]. As the population ages, they have limited regenerative abilities and are more prone to disease, syndromes, and sickness than younger adults. The changes associated with old age comprise both physical changes and mental changes, often interactive [(2)]. Health care systems in Egypt have largely ignored the needs of the elderly. There are only sporadic programs to care for the elderly, mainly initiated by the community or within the private sector. Those above 65 years old represent 4.4% of Egypt's population. The country has 34 old people's homes for over a million elderly people, and some homes have waiting lists of over 1000 persons [(3)].

A growing list of psychological states including stress, anxiety, depression and mood disturbance becomes common among elders and have been linked to many chronic disorders such as coronary heart disease, cancer, diabetes and mental disorders as well as to accidents [(4)] . Many of elders are also very much affected by joint and muscle pain which affect their quality of life. Although today there is a wide range of medicinal assistance readily available, the best relieving solution is to first try a natural relief method. Thus, there is an urgent need for inexpensive and effective strategies to promote psychological well-being and improve general heath status, especially for elders [(5)].

Music is one of life's earliest experiences and in late adulthood musical memories remain as some of the most deep-rooted. For the geriatric client, music therapy can be an effective and enjoyable medium for the maintenance and improvement of cognitive, physical and socio-emotional functioning. Providing music that is related to an individual's cultural and/or religious backgrounds, or providing opportunities to rediscover musical skills can promote relaxation and alleviating anxiety and depression. It can also stimulate cognitive functioning through providing opportunities to learn new skills as well as through utilizing previously acquired knowledge. Both long and short term recall can be stimulated through such experiences as musical associations, singing familiar songs, and sequenced activities utilizing rhythm instruments, songs and/or movement. Music can

stimulate and activate signal pathways, which can, in turn, modulate chemical mediators; thus, facilitating recovery from depression or diminishing its symptoms.[6- 8]

Music is often used to provide motivation for physical activation in the elderly. Playing instruments can increase range of motion, develop muscle strength and tolerance, and enhance both fine and gross motor functioning. Singing can improve oral-motor skills and enhance respiratory functioning. Music can also facilitate states of relaxation thereby promoting sleep and decreasing pain and anxiety. Music therapy offers an alternative and positive approach for reinforcing quality of life for the elderly. Scientists believe that music's ability to make the person feel good may be one way it helps to alleviate pain. When the body encounters something painful electrochemical signals travel from the site of the pain to the spinal cord and on to the brain. Studies suggest that music can interfere with pain signals even before they reach the brain and Pleasant music triggers the release of the brain chemical dopamine. [9-11]

Physical activity has been shown to be associated with decreased symptoms of depression and anxiety as common psychiatric conditions seen in elderly personnel. Exercise consider one of the most positive and healthy coping strategy to manage anxiety and depression. Exercise probably helps ease depression in a number of ways, which may include: releasing feel-good brain chemicals that may ease depression (neurotransmitters and endorphins), reducing immune system chemicals that can worsen depression, increasing body temperature, which may have calming effects. Exercise has many psychological and emotional benefits too. Meeting exercise goals or challenges, even small ones, can boost the persons' self-confidence. Moreover, Exercise is a distraction that can get the elderly away from the cycle of negative thoughts that feed anxiety and depression and give them the chance to meet or socialize with others. Just exchanging a friendly smile or greeting as the person walk around his/her neighborhood can help improving mood status [12-13].

Scientists have found that regular participation in aerobic exercise has been shown to decrease overall levels of tension, elevate and stabilize mood, improve sleep, and improve self-esteem. About five minutes of aerobic exercise can begin to stimulate anti-anxiety effects. According to some studies, regular exercise works as well as medication for some people to reduce symptoms of anxiety and depression, and the effects can be long lasting. One vigorous exercise session can help alleviate symptoms for hours, and a regular schedule may significantly reduce them over time [11,12]

When the pain and stiffness sets in, however, moving the affected joint is the last thing on many peoples' minds and lack of exercise actually can make the joints even more painful and stiff. The best conventional management for joint pain generally involves exercises to keep the joints flexible, encourage nourishment of the cartilage, and strengthen the muscles surrounding joints. It is the movement of a joint that forces oxygen and nutrients into the cartilage and removes waste products, thus helping to keep the cartilage healthy. Exercise gives energy to get through the day and improve the general sense of well-being [7].

Geriatric and psychiatric nurses should understand and meet the often complex physical and mental health needs of older people. They try to help their patients protect their health and cope with changes in their mental and physical abilities, so older people can stay independent and active as long as possible. Health promotion related to physical activity and exercise is an integral part of the nurse practitioner (NP) role [8]. Nurses can share in providing natural, inexpensive and effective strategies, such exercise and music therapy, to improve physical and mental status of elders. There is a suggestion that using more than one strategy at the same time may give better effect. The aim of this study is to evaluate the effect of a combination between exercise program and music therapy on improving level of pain, anxiety and depression among elders and compare it with the effect of exercise program only [4]

The aim of this study was to:

Evaluate the implementation of physical exercises program combined with music activities on musculoskeletal pain, anxiety and depression for institutionalized elderly.

Research hypotheses:

Implementation of physical exercises program combined with music activities may decrease intensity of musculoskeletal pain and decrease levels of anxiety and depression for institutionalized elderly more than implementation of physical exercises program only.

II. Material and methods

Material:

- ***Study design:*** Quasi experimental design was use in this study
- **Setting:**-This study was conducted in Elsaada Geriatric Home which affiliated to Ministry of Social Affairs in Tanta City; With capacity of 32 beds, 25 were occupied during carrying out the study (7male and 18 female)

- **Subjects: -** 20 elder clients (4male and 16 female) who fulfilled the study criteria: (agrees to participate in the study, have no contraindication for movement and free from any psychotic illness) were constituted the study subjects.

- **Tools of the study:**

Four tools were used in this study

Tool I: - Questionnaire sheet consists of 2 parts to assess Socio demographic data and clinical data:

Part 1: - Socio demographic data such as age, sex, education, marital status, number of children and music like and dislike.

Part 2: - include clinical data such as medical history for most chronic diseases,

Tool II: - **pain assessment sheet**, consists of 2 parts.

Part 1: - clinical assessment of pain, including:

This part was developed by the researchers after review of literature to assess Pain location, type of pain (is it primary or secondary pain), duration, character, and nature of the pain, using analgesics and its effect on reducing pain level ,factors that increase or decrease pain level .

Part 2: - Assessing pain intensity using Visual Analogue Scale

Visual Analogue Scale:- It developed by ***Wewers M.E. & Lowe N.K. (1990*)** [(13)]to assess pain intensity. It is a simple assessment tool consisting of a 10 cm line with (0) on one end, representing no pain, and (10) on the other end, representing the worst pain ever experienced. The patients are instructed to point to the position on the line between the two ends to indicate how much pain they are currently feeling. The level of pain was classified as follow:-

0	⟶	No pain
1-3	⟶	Mild pain
4-6	⟶	Moderate pain
7-9	⟶	Severe pain
10	⟶	The worst pain ever experienced

Part 3:- Assessing pain intensity using Behavioral rating scale;

Behavioral rating scale: - It developed by ***Kohler & Strain, 1992***[(14).] It designed to use with patients unable to provide self-reports of pain. It consists of five observable measurements (face score, restlessness score, muscle tone score, Vocalization score, and Consolability score). Each of the five measurements has three statements categories (0, 1 or 2). The total pain score of the five measurements is 10 grads. Higher score indicate sever pain.

Tool III: **Beck Anxiety Inventory (BAI)**

Developed by ***Beck JG (1988)*** [(15-16)]**,** it consists of 21 items to assess anxiety level. Each statement was rated on a 4 point Likert scale where 0 =not at all, and 3=sever constantly. With a total score =63 grades, classified as follows**:**

A grand sum between 0 – 21 indicates low anxiety.

A grand sum between 22– 35 indicates moderate anxiety

A grand sum that exceeds 36 is Persistent and high anxiety

Tool IV: - Geriatric Depression Scale (GDS)

Developed by *Yesavage JA, Brink TL, Rose TL (1983)* [(17)]. It consists of 30 items to assess the level of depression in elderly.

Each statement has Yes or No response where No=0 and Yes =1 it have 20 positive and 10 negative statements, with a total score =30 grades, classified as follows:

No depression -0-9, Mild depressives-10-19, Severe depressives-20-30

Method

- Both the translated tools and those developed by the researchers were validated by a jury to ensure their content validity. The jury consisted of five experts in the geriatric and psychiatric nursing fields. The required correction and modifications were carried out accordingly.
- Before starting the study, an official letter was addressed from the dean of the faculty of nursing to the directors of geriatric home to request their permission and cooperation to collect data from the selected setting.

- ❖ Ethical considerations: - Informed consent to participate in the study was obtained from the study subject after explanation the purpose of the study. They were also assured about the confidentiality of the obtained data. As well the elder's privacy was always respected. The study subjects were informed that they have a right to withdraw from the study at any time if they wanted.
- ❖ Reliability of the study tools (tool II part 1, 2 and 3, tool III and tool IV) were tested through measuring internal consistency, Cronbach's Alfa were = 0.780, 0.94, 0.80, 0.86 and 0.81 respectively.
- ❖ A pilot study was carried out on 5 elders after taking their approval to ascertain clarity and applicability of the study tools. In addition it serves to estimate approximate time required for interviewing the study subject.

Developing and implementing the program

Program was developed after review of literature and implemented by the researchers.

A- The general objective of the Program was to reduce level of pain, anxiety, and depression among elders through implemented physical exercise and music activities.

B- The contents of the Program were organized in twenty (20) successful sessions provided for the studied subjects (five sessions each week); divided into two interventions separated by two weeks;

1. Implement physical exercises alone for the studied subjects for two weeks.
2. Two weeks after, implement physical exercise combined with music activities for another two weeks.

C- In the day before implementing the program sessions, the researchers conduct a session of five hours to establish relationship with the studied subjects and oriented them about the Program as well as complete the assessment tools to assess pain, anxiety, and depression among elders

D- Each of the physical exercises session consists of one hour divided in to two half hour separated by 15 minutes as arrest period. The physical exercises program includes stretching and strengthening exercises and exercises to improve hand mobility and reduce hand pain. Stretching exercises such as neck Stretch, shoulder raises and rotations, shoulder push outs, arm/trunk stretch, hip stretch, ankle rotations, hamstring stretch, and arm circling, calf stretch, thigh stretch, and side bends. Strengthening exercises such as calf raises, wall arm push outs, and squats. The researcher do on front of them and the studied subjects re-demonstrated after that.

E- The physical exercises combined with music activities session consists of:

- Combined and executive type of music activities was conjunction with other therapeutic procedures (physical exercises). The patient is asked to select music he likes as it would soothe him better, and his music was used as an adjuvant to various therapies.
- Executive music activities consist of individual or group singing. Patients with long stays are the best candidates for this form of music intervention**.**
- Each session consists of two hours; during the first hour, the participants were allowed to sing songs, playing in instruments as they prefer and listening to music and songs.
- During the other hour, the participants were asked to conduct a group of exercises as the researcher do on front of them with musical background. The exercises in the intervention include stretching and strengthening exercises.

F- Teaching methods & aids used during the sessions

- Group discussions, Role play, demonstration and re demonstration were used as teaching methods.
- Real objects, flip charts, Pictures, lab top, head phones, sound sunglass and musical CDs were used as teaching aids.

G - **Evaluation of the intervention**

Three assessments were done to the study subjects in order to evaluate their level of pain, anxiety and depression.

- ❖ First time (pre assessment) before implementation of the Program using the four study Tools.
- ❖ Second time**:** post I, immediately after the implementation of physical exercises Program, Using Tool I part 2, Tool II, Tool III, and Tool IV.
- ❖ Third time: post 2, immediately after the implementation of physical exercises combined with music activities, Using Tool I part 2, Tool II, Tool III, and Tool IV.

Statistical analysis:

Data was collected, tabulated and analyzed using SPSS V18. Statistical presentation and analysis of the present study was conducted, using the mean, standard error, student t- test, Paired t-test, Chi-square, Linear Correlation Coefficient, and Analysis of variance [ANOVA] tests.

III. Results

Table (1) represents the distribution of the studied elderly by their-socio-demographic characteristics. It shows that, the age of the studied sample ranged from 60-84 years, with a mean 70± 5.129 years. Most of

elderly participants (80%) were females. As regards the elderly education, about two thirds (65%) of the sample were illiterate and 30% of them had university education. In relation to marital status, more than three quarters (80%) of the sample were widow and 15% of them were single. However**,** there are three quarters of them (75%) having children. Nearly half of this percentage (46.6%) have from 2 to 3 children followed by 33.33% have from 4-5 children and 20% have from 6-7children.

Table (2) represents the distribution of the studied elderly by their medical history. It shows that more than one half (55%) of the elderly had osteoarthritis and more than one third (35%) of them had hypertension, followed by 30% had diabetic and 20% of them had osteoporosis. 15% of the sample had also Rheumatoid arthritis and heart disease. Small percentages of elderly had other various medical problems including chronic liver disease, chronic renal disease, hyperthyroidism, Parkinsonism, Urinary incontinence.

Table (3) represents the distribution of the studied elderly according to their clinical assessment of the pain. Regarding the site of the pain, there were three quarters (75%) of the sample had knee pain and half of them (50%) had pain in hands and elbow followed by 25% of them had back pain and other 25% had pain in all joints. Small percentage (15%) of them had pain in neck and shoulder. Concerning to the type of the pain, there were three quarters (75%) of the sample reported that their pain is a primary pain and the rest (25%) of them had secondary pain. There were three quarters of the sample (75%) reported that the pain present since some years and more than one half (55%) of them reported that the onset of the pain was insidious. In relation to the nature of the pain, nearly three quarters (75%) of the elderly reported that the pain occurs in the form of throbbing sensation followed by 55% of them reported that the pain occurs in the form of burning sensation and 25% and 15% of them had sharp and allodynia pain respectively. Most of the sample (85%) reported that the pain occurs on intermittent intervals.

As regard to factors increase or decrease level of pain among those elders, about two thirds (65%) of the sample reported that walking and house activities is a main factors that increase their pain followed by (15%, 10% and 10%) of them reported lack of movement, carry heavy objects and cold respectively. On the other hand, nearly two thirds (60%) of the sample reported that physical exercises decreases their pain and more than half (55%) of them reported that rest and sleep as a decreasing factors followed by 25% and 15% of the sample reported heating and massage as a decreasing factors respectively.

Table (4) Revealed comparison between elders' responses in relation to three interventions concerning the level of anxiety, depression, and pain. The study results revealed that, in relation to level of anxiety, 10% of the patients obtained low level pre-program, while post physical exercises program, 35% of the patient fall in the same category. While out of 95% of the patients had low level post physical exercises and music intervention. A statistically significant relation was obtained between the three different timing of the intervention either pre, post I and post II (0.001)

In relation to level of depression, more than one half of studies subjects (60%) have severe depression pre-program. While none of the subjects fall in the same category even post physical exercises program or post physical exercises and music intervention with statistically significant relation at level of (0.001).

While regarding to pain level, the majority of the study subjects have a sever level of pain (90%) preprogram. post physical exercises program none of the subjects fall in the same category. while only 5% of the subjects obtained sever pain after physical exercises and music intervention and statistically significant relation was also found between three scores at level of (0.001)

Table (5) reveals comparison between elders' responses in relation to three interventions concerns the level of anxiety, depression, and pain according to the differences or change in the total mean scores. The result shows that the highest mean of differences or change in three interventions was between pre intervention and post physical exercises with music intervention with significant difference at <0.001 for three scorings. The table shows also that the difference between the effect of physical exercises intervention (post 1) and physical exercises with music interventions (post 2) was a statistically significant difference in relation to levels of depression, anxiety and pain with a difference mean 2.85±4.38, 7.65±5.32 and 1.35±1.50 respectively.

Figure (3) reveals the correlation between levels of pain, anxiety, and depression in studied subjects' pre interventions. The results indicate a positive correlation between level of anxiety and level of depression at level 0.003. The relationship between level of pain with level of depression and level of pain with level of anxiety shows also a positive correlation at level 0.005and 0.025 respectively.

Table (1) Distribution of the studied elderly by their socio-demographic characteristics

socio-demographic characteristics	Studied elderly	
	N (20)	%
Age		
60< 74 year	16	80.00
74 < 84year	4	20.00
Mean± S.D 70± 5.129		
Sex		
Female	16	80.00
Male	4	20.00
Education		
Illiterate	13	65.00
Primary education	1	5.00
University (high) education	6	30.00
Marital status		
Single,	3	15.00
Widow	16	80.00
Divorced	1	5.00
Having children		
Yes	15	75.00
No	5	25.00
Number of children (n=15)		
2-3	7	46.67
4-5	5	33.33
6-7	3	20.00

Table (2) Distribution of the studied elderly by their medical history

Medical history	Studied elderly	
	No (n=20)	%
Osteoporosis	4	20.00
Rheumatoid arthritis	3	15.00
Osteoarthritis	11	55.00
Chronic liver disease	2	10.00
Chronic renal disease	2	10.00
Diabetic	6	30.00
Heart disease	3	15.00
Hypertension	7	35.00
Parkinsonism	1	5.00
Urinary incontinence	1	5.00
Hyper thyroidism	1	5.00

Table (3) Distribution of the studied elderly according to their clinical assessment of the pain intensity

clinical assessment of the pain*	No (n=20)	%
Site of the pain		
All joints	5	25.00
Neck& Shoulder	3	15.00
Knee	15	75.00
Hands &Elbow	10	50.00
Back	5	25.00
Type of the pain		
Primary	15	75.00
Secondary	5	25.00
how long does the pain last		
Since some months	5	25.00
Since some years	15	75.00
The onset of the pain		
Insidious	11	55.00
Associated with trauma	9	45.00
The nature of the pain*		
Sharp	5	25.00

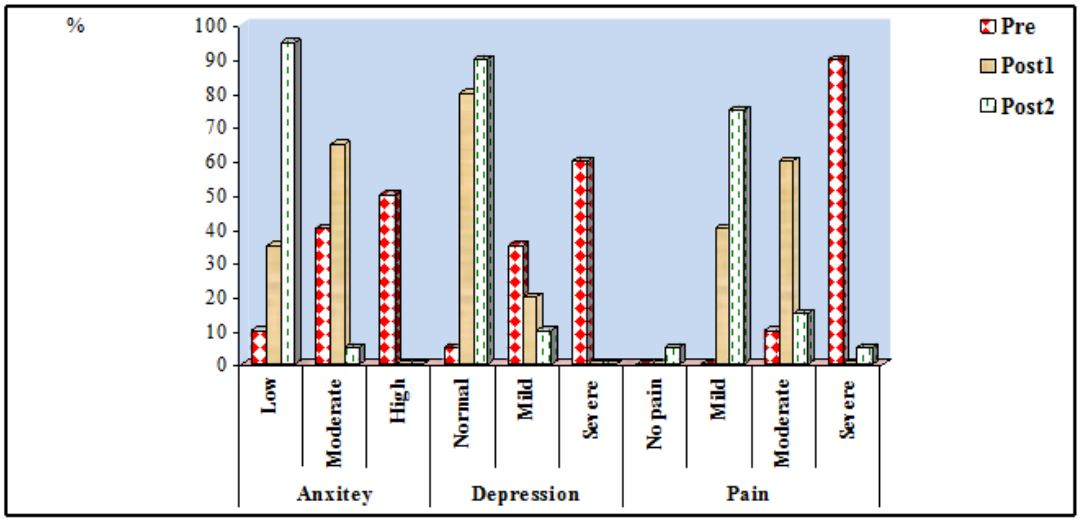
burning	11	55.00
Throbbing	14	70.00
Allodynia	3	15.00
The continuity of the pain		
Continuous	3	15.00
Intermittent	17	85.00
Factors increase pain		
Walking and house activities	13	65.00
Lack of movement	3	15.00
Carry heavy objects	2	10.00
Cold	2	10.00
Factors decrease pain*		
Rest &sleep	11	55.00
Massage	3	15.00
Physical exercises	12	60.00
Heating	5	25.00

The response isn't mutually exclusive

Table (4): Comparison between elders' responses in relation to the level of anxiety, depression, and intensity of pain before and after application of two interventions

		Pre assessment		After physical exercises program		After combined physical exercises with music program		**Total**		**Chi-square**	
		N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**X^2**	**P-value**
Anxiety	**Low**	2	10.00	7	35.00	19	95.00	28	46.67	46.266	<0.001*
	moderate	8	40	13	65	1	5	22	36.66		
	High	10	50.00	0	0.00	0	0.00	10	16.67		
Depression	**No depression**	1	5.00	16	80.00	18	90.00	35	58.33	50.152	<0.001*
	Mild	7	35.00	4	20.00	2	10.00	13	21.67		
	Severe	12	60.00	0	0.00	0	0.00	12	20.00		
Pain	**No pain**	0	0.00	0	0.00	1	5.00	1	1.67	66.951	<0.001*
	Mild	0	0.00	8	40.00	15	75.00	23	38.33		
	Moderate	2	10.00	12	60.00	3	15.00	17	28.33		
	Severe	18	90.00	0	0.00	1	5.00	19	31.67		

Figure 1:- Comparison between elders' responses in relation to three interventions concerning the level of anxiety, depression, and pai*n*



Post1: post physical exercises intervention **post 2**: post physical exercises and music intervention

Table 5: Comparison between elders' responses in relation to three interventions concerns the level of anxiety, depression, and pain according to the differences (change) in the total mean scores.

		Total score			Comparison	Change (difference)			Paired t-test	
		Mean	±	SD		Mean	±	SD	t	P-value
Depression	**Pre**	20.25	±	5.92	**Pre- Post 1**	13.30	±	6.67	8.92	<0.001*
	Post 1	6.95	±	3.65	**Pre- Post 2**	16.15	±	6.47	11.15	<0.001*
	Post 2	4.10	±	3.02	**Post 1-Post 2**	2.85	±	4.38	2.91	0.01*
Anxiety	**Pre**	26.80	±	12.53	**Pre-Post 1**	16.60	±	11.80	6.29	<0.001*
	Post 1	10.20	±	5.69	**Pre-Post 2**	24.25	±	12.22	8.88	<0.001*
	Post 2	2.55	±	2.39	**Post 1-Post 2**	7.65	±	5.32	6.43	<0.001*
Pain	**Pre**	8.10	±	1.21	**Pre-Post 1**	3.90	±	1.55	11.23	<0.001*
	Post 1	4.20	±	1.32	**Pre-Post 2**	5.25	±	1.41	16.66	<0.001*
	Post 2	2.85	±	1.76	**Post 1-Post 2**	1.35	±	1.50	4.03	<0.001*

Figure 2:- Comparison between elders' responses in relation to three interventions concerns the level of anxiety, depression, and pain according to the differences (change) in the total mean scores.

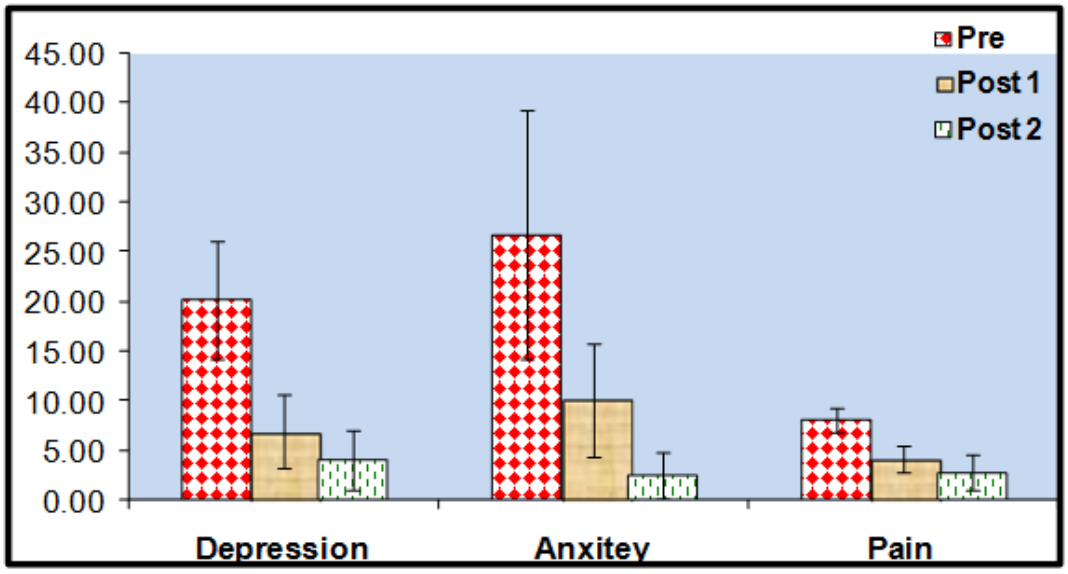
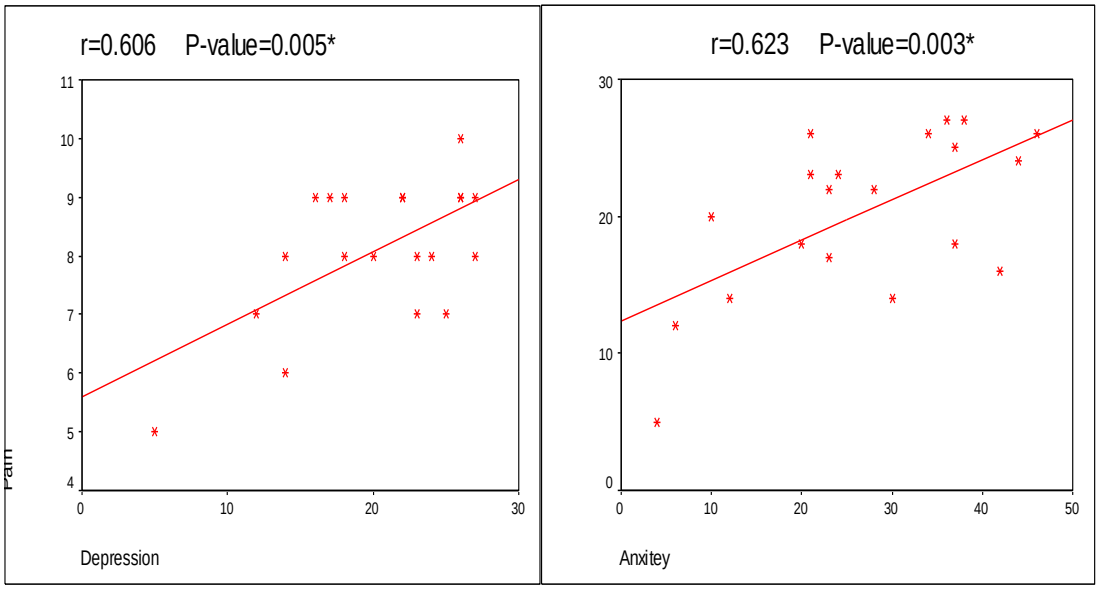
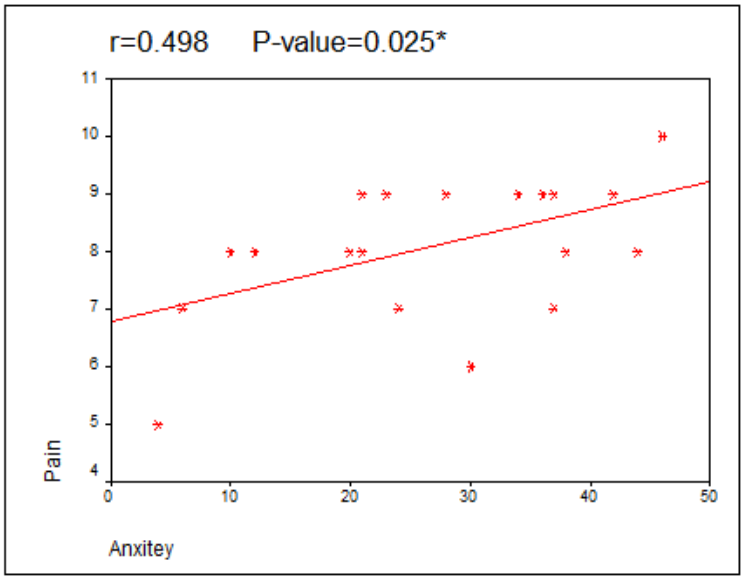


Figure 3: Correlation between intensity of pain, levels of anxiety and depression in studied subjects' pre interventions.





IV. Discussion

Depression and anxiety in elderly people may be contributed to multiple losses of aging. Chronic pain in older people presents also a significant obstacle in maintaining function and independence. This study examined the difference between the effect of physical exercises program combined with music activities on the intensity of musculoskeletal pain and levels of anxiety and depression compared with the effect of physical exercises program alone among institutionalized elderly. The overall results of the study shows that physical exercises accompanied with music activity significantly improve levels of pain, anxiety and depression rather than physical exercise alone. Music can improve motivation, elevate mood, and increase feelings of control in older people. Also, Physical exercises have major role upon the physiological and Psychological functions. Physical activity encompasses an intentional, structured activity undertaken to improve one's health [(18, 19)].

The present study shows that two weeks of physical exercises make a significant improvement in different levels of pain, anxiety and depression among elders. This can be explained by the fact that the studied elders don't make any exercises for long time, they don't have chance to make a wide range of movement because of their presence in geriatric home and this geriatric home hasn't any of exercises program or activities, in addition to that the majority of studied elders were female and haven't chance to make any house hold that they used to do before. To add more, these old females are properly cultured to practice. This was evident as they needed an intensive effort to explain the importance of the program to motivate them. After sharing in this program, their response to physical exercises was very impressive and energetic. Exercises appear to have mental health benefits on them and promoting psychological well-being too.

This result is congruent with other recent epidemiological reports, experimental trials and literature reviews supporting the fact that physical activity and exercise are associated with better physical and psychological health [(20-23)]. *Biddle et al* reviewed evidence on exercise and physical activity in relation to different aspects of mental health. They found that exercise is associated with the strongest anxiety-reduction effects and emphasized the causal link between physical activities and reduction in clinically-defined depression [(24)]. Also, who found that Beck Depression inventory, Hamilton Rating Scale of Depression and Quality of life subscales of bodily pain were all significantly improved by exercise among elders aged 60-84 [(25)].

Regarding the combination of music activity and singing with an exercises activity, a statistically significant improvement occurred in the levels of pain, anxiety and depression after combination of music and exercises program as measured by Visual analog scale (VAS), Geriatric Depression Scale (GDS) and Beck Anxiety Inventory (BAI). This can be explained through that, in the present study elders choose a soothing music that established a soothing power. It properly had a unique link to their emotions, refreshed their memory about the happy time in their life, gave them hope in life and also diverted elders' attention about their pain, anxiety and depression. On the other hand, when elders choosing exciting music, it motivated them and gave them energy, refreshment, optimism. So music can make elders calmer and relaxed and less anxious during and after conducting exercises and this can help them to get red off depressed mood and anxiety. Also, music may have a positive influence on wellbeing by providing joy, social interaction, reviving memory and social inclusion.

Esent study result is congruent with the findings of some studies that examined the effect of music with exercise on older people. For example, ***Jeon EY*** 2009 who found that music therapy and rhythmic exercise had

positive effects on quality of life, mental health and upper extremity muscle strength in **i**nstitution-dwelling elderly women [(26)]. On the same line, ***Sahranavard A*** et al 2012 who found that aerobic exercises with music are significantly reducing depression in women over 25 years [(27).]

Similarly, a lot of studies support that using music and singing in health care can improve quality of life for older people by easing pain, anxiety and depression. *Ruth MC* et al who indicated that listening to relaxing music had steadily decrease pain scores in elderly with osteoarthritis pain [(28)]. ***Castillo S*** 2010 revealed also that music therapy group revealing a better improvement not only in the frequency of depression symptoms, but also stimulates beneficial feelings and decrease levels of depression [(29).] Moreover***, Guétin S et al*** 2009 reported that a significant improvement in anxiety and depression were observed in the music therapy group and the effect of music therapy was sustained for up to 8 weeks after the discontinuation of sessions [(30)].

Finally, one can tell that if activities done while listening to music can positively alter the physiological and psychological functions, and may even are music specific. This idea agrees with ***Raja R and Arumugam, N 2006*** who found that there is a significant difference of muscle recruitment between simulative music, sedative music and music silence. [(31)]

V. Conclusion and Recommendation

This study provides evidence that the combination between exercise and music interventions is more effective tool for relief of pain, anxiety, and depression among elders. The study recommended that

- The nurses can use exercise and music interventions beside each other as safe, inexpensive and effective interventions, for elders with musculoskeletal pain, anxiety or depression.
- Geriatric home should addmusic activities and exercise program on their daily schedule

Acknowledgement

The authors would like to express their sincere gratitude to the geriatric home administrating team who helped in facilitating conduction of this study. Great appreciation as well is to the elders who accepted to participate in the current study.

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