EFFICACY OF AQUA-AERO FIT: A WATER BASED EXERCISE PROGRAM FOR CARDIORESPIRATORY ENDURANCE AMONG PSYCHIATRIC PATIENT IN SELECTED REHABILITATION CENTER

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ABSTRACT

Purpose: This paper identify the effectiveness of a Aqua-AeroFit : A Water Based Exercise program on cardiorespiratory endurance on psychiatric patients on selected rehabilitation centers.
Methods: A Quasi-experimental design with comparison on the effectiveness of selected 30 participants for the proposed water based exercise program and 30 participants for Land based program enrolled in a selected psychiatry center.
Results: Results shown that Physiatrist much accepted the results on the effectiveness of water based exercise program on cardiorespiratory endurance among psychiatry patients. Study showed that the effectiveness of Aqua-AeroFit a Proposed Water based exercise program for cardiorespiratory endurance compare to landbased exercise program.
Implication: The study emphasized the inclusion of Aqua-AeroFit Water-Based exercise program for cardiorespiratory endurance in physical therapy management for psychiatry patient as part of rehabilitation program

Keywords: Aqua-Aero Fit. Water Based Exercise, Vo2 Max

INTRODUCTION

Mental health stress that is “more than just the absence of mental disorders or disabilities.” Peak mental health is about not only avoiding active conditions but also looking after ongoing wellness and happinesswhich stated by WHO, 2018. The researchers believe that mental disorders may cause not only mental impairment but also affects Physical conditioning and fitness status of oneself. Physical activity on described any movement of your body that utilize your muscles and expends energy. WHO, 2015 also stated that exercise has also been found to decrease symptoms such as decrease self-esteem and social withdrawal. Physical activity and exercise can contribute on an individual and prevents or delay onset of different mental disorders which also stated on the study of Sharma, 2016. These parts of fitness are body composition, cardiorespiratory endurance, flexibility, muscular endurance, power, and strength.

Cardiorespiratory fitness (CRF) reflects the for performing large-muscle, dynamic, and moderate intensity exercises for long time periods.According to Quin, 2020, One of the composition of physical Fitness is cardiorespiratory endurance is VO2 max. Thus, this may also a holistic approach not only increasing Physical activity and fitness but also, mental, and psychological improvement thru exercise, that may be used for additional treatment on mental disorders. According to studies of Sharma, 2016, lifestyle change and exercise which can provide increase relevance on human with mental disorder with co morbid status. Patients

who are at are increase risk of chronic illness related to sedentary lifestyle and phatmacological co morbidities like diabetes, hyperlipidemia, and cardiovascular disease. An essential part of lifestyle gestivmodification is exercise. The researchers believed that decrease in physical fitness and Physical activity are associated with a decrease rate mental health disorder, but less is known about the impact of cardiorespiratory fitness or CRF. Acording to Kandola (2019). Several reviews and studies believe that people who are physically active and maintain their cardio respiratory fitness across the lifespan have a reduced risk of experiencing a depressive episode, in addition to other co morbidities among health outcomes which noted on the studies of Hallgren , 2017. Evidence also shown that physical activity may be an often-neglected management in Psychiatrical related health care. Mental disorders, as high co morbidity of physical conditions such as respiratory, metabolic, cardio-vascular and neurologic diseases which linked to overweight, smoking, and unhealthy lifestyle. --In addition to these, the researchers believes increasing activity and maintaining physically fit make mental disorders decrease its prevalence.Low cardiorespiratory fitness is a potent independent predictor of all-cause and cardiovascular mortality in apparently healthy individuals and those with established cardiovascular disease. The optimal measure of cardiorespiratory fitness is maximal oxygen uptake which the VO2max, the integrative capacity to transport and use O2 for the provision of cellular energy, usually identified in response to a graded exercise test based on Haynes, 2019. Land-based exercise (LBE), as an exercised prescribed according to Dong, 2018, which includes calisthenics, aerobic exercises and other behavioral therapy activities were included on Mental Institutions as Physical activity programs which includes exercises that may improve cardiopulmonary endurance, weight bearing training thru Zumba, high intensity exercise programs, (HIIT) jogging, running and calisthenics.

Simas, 2017 suggested that Water Based exercise program is an exercise which consists of jogging in half trunk area in which includes water like waterobics, aquatic fitness, aqua fitness, aqua fit which is activity of water calsithenics exercise such as in a swimming pool. This type of activity is indicated in rehabilitation and therapeutic procedures and is included in exercise programs for cardiorespiratory and Physical fitness improvement, particularly for adults and elderly with functional limitations according to Bucallini, 2017. It has numerous importance compared to Land Based Exercise program. Firstly, the relatively constant water temperature and hydrostatic pressure may facilitate blood circulation, ease soft-tissue contracture, and relieve muscle spasms and fatigue. Secondly, since water resistance acts in the opposite direction to body motion, greater muscle activity is required which may enhance muscular strengthening. Thirdly, water buoyancy can decrease the likelihood of injury, and protect against joint degradation by rdecrease weight bearing.according to the stidies of Kim (2016).

The researcher believed that water exercises through the proposed Aqua-Aero Fit program was the initial Water Based Exercises Regimen as an effective exercise may increase the physical fitness level and cardiorespiratory endurance on psychiatric disorder, which may improve physiological focusing cardiorespiratory This was supported the conclusion of the study of Ayan,2017, that Water-based exercise may capable of enhancing cognitive function and improve VO2max of Psychiatric patients which prompts the researcher to challenge mental ill patient to do water based exercise program instead of usual land-based physical fitness training exercises among psychiatric and mentally ill patient. This study is aimed to determine the following,(1). Acceptance level of Water-based Exercise Program among Physiatrist, Psychiatrist and Physical Therapist,(2). Determine the significant effect of pretest and post test on land based exercise as control group among psychiatric patient,(3). Determine the effectiveness on pretest and post test on Water Based exercise program as experimental

group,among psychiatric patient (4) Identify the significant difference on the effectiveness of experimental and control group. With this, study aimed aimed introduce Aqua-Aero Fit: a water based exercise program for cardiorespiratory endurance for psychiatric patients which is the weaknesses to be found in the study.

METHOD

The study uses quasi-experimental design which identify the significant effect of a proposed Water based Exercise program to the control group, which is Land based exercise program.60 participants were purposively non randomly select which include the 30 participants from experimental group and 30 participants from the for the control group. Research was conducted on Psychiatric Rehabilitation Center Mabini, Batangas. Participants were initially screened using inclusion criteria and exclusion criteria set by the researcher. Participants included in the program with, (1).psychiatric patients enrolled in the Rehabilitation center, (2) male and female, (3) treated and admitted with clearance provided by the resident Physician of Pangalunggan Half way Rehabilitation center (4) ages between 18 and 65 (5) able to follow commands (6) can comply to the schedule (7) scored in mini mental state examination (MMSE) at least greater than 24 to 30.The participants were excluded on the program are with, with (1) pulmonary disorder (2) heart disease and or any cardio pulmonary problem (3) pregnant (4) infectious disease (5) open wound (6) unable to meet the schedule (7) cannot follow commands (8) heavy alcoholic beverages drinker (9) chronic smoker (10) scored in mini mental state examination (MMSE) at lesser than twenty over thirty are excluded from the study. The participants were informed through the distribution of verbal and written consent to participated. It state that the participants are free to withdraw the study any time without penalty. The respondents are divided equally named Water based Exercise Program as Experimental Group and usual Physical Aerobic exercises for psychiatric patient protocol as the Control Group.Tools were used in the study which include the Acceptability level questionnaire on water Based exercise for cardiorespiratory endurance for Physiatrist, psychiatrist and physical therapist.

The validity and reliability of the Acceptability level questionnaire was determined by using Cronbach's Alpha using SPSS 21 version with the score of .837 which resulted had a reliability and good internal consistency. BMI were also use as instrument to measure the total of tissue diameter (muscle, fat, and bone) in an individual, and then categorize that person as underweight, normal weight, overweight, or obese based on that value. The researchers will get all the subjects weight, height and age before the first treatment and after the last treatment of the study to identify if there is any adverse effect. BMI is an instrument to measure the total of tissue diameter (muscle, fat, and bone) in an individual, and then categorize that person as underweight, normal weight, overweight, or obese based on that value. The researchers will get all the subjects weight, height and age before the first treatment and after the last treatment of the study to identify if there is any adverse effect.Mobile application where uese to identify the correlation of hieght in centimeters and weight in pounds for the level of bodymass index. Targer Heart Rate method known as the Karvonen method. In this method the target range is calculated as follows: subtract standing resting HR (HR_{rest}) from HR_{max} to obtain HRR. Calculate 50% and 85% of the HRR.with the sum of each of these values to the HR_{rest} to obtain the target range. The researchers identified the HR_{rest} before eevery treatment and the HR_{max} after every treatment sessions and determined if there will be an increase of heart rate reserve in subject of water based experimental research vs control group. The Borg Rating of Perceived Exertion (RPE) is a way of measuring physical activity intensity level. Perceived exertion is how hard you feel like your body is working. A high correlation exists between a

person's perceived rating and actual heart rate during physical activity. Person's exertion rating may provide a good estimate of the actual heart rate during the activity. The Mini Mental State Examination (MMSE) an intrument that can be used to systematically and thoroughly evaluate mental status. It is an 11-question measure that exam five areas of cognitive function: orientation, registration, attention and calculation, recall, and language. The maximum score is 30. A score of 23 or lower is indicative of cognitive impairment. The MMSE takes only 5-10 minutes to administer and is therefore practical to use repeatedly and routinely. (Meredith Wallace, 1999). VO_2 max is the maximum (max) rate (V) of oxygen (O_2) your body is able to use during exercise. The greater the VO_2 max, the more oxygen your body can use , and the more effectively your body can use that oxygen to generate the maximum amount of ATP energy. VO_2 max identify on a few key factorrs such as age, gender cardiortespitratory fitness level elevation, such as at sea level or in the mountains.

To measure the Vo2amx,chester step test were used The Chester Step Test is an assessment of an oxygen content per activity or also known as VO2max levels by identify the rate of recovery following exercise. Written informed consent form were utilized in every subject that participated in the study with the assurance that their identity and any information that might compromise their right to privacy are not disclosed. Basic needs for the procedure were provided by the researcher for the subjects such as refreshments, lifebuoy, enough recovery time and guarding with assistance to ensure physical and mental well-being during the study. Safety of each respondent assured by carefully implementing safety measures and assessing all the precautions that are needed in both assessment and implementation of the procedure to avoid possible harm that might happen to the subjects. The nature of the study and all the needed details were fully discussed to the respondents before their consent were acquired to assure transparency in the purpose of enabling them to have an informed decision. safety were on exercise procedures constant vital signs checking were done in every pre and post treatment each set.

All the results of this study was the only be accessible to the researcher. There is no situation that a respondent decided that he or she not to participate in the study, the researcher assured they are free and the researcher not be an authority to hold them in any obligation.Pilot testing were done to identify the inclusion and exclusion criteria to the participants. Inform consent forms were given to three respondents selected under blinded sampling, the respondents didn't know the type of treatment they are receiving to avoid bias during the entire study, since all the respondents came from one place. Eventually, if the data supports the researcher's belief in the effectiveness of Water based Exercise Protocol for the physical fitness of the psychiatric patients Respondents in the inclusion criteria will be divided into 2 groups, 30 participants for the Experimental and 30 participants for the Control Groups. A letter of request asking permission to conduct a study in the Rehabilitation Center was given to the owner 2 weeks prior to implementation was personally sent by the researchers. Another consent letter is given to the participants to participate in the study.Precautionary measures like monitoring vital signs before and after the exercise program,signed consent to the participants and presence of PT assistants and Lifebouy and Lifeguard for the experimental and control group. The subjects were instructed to not practice physical exercises during the intervention period, so as not to influence the results. BMI level,Borg percieved rating scale,chester step test to identify the initial VO2 level and Minimental status examination were initiated to the participants.the experimental group participate in jogging exercise for 10 minutes , Zumba in water in water for 15 minutes, resistive exercise for 5 minutes and active swimming endurance exercises for 10 minutes for twice a week fo twelve session while the Control Group continued their Land based Physical activities and Rhythmical body movement, calisthenics and zumba which

exercise schedule every Monday and Tuesday, twice a week for twenty minutes.Warm up exercsies were implemented on the experimental and control group which includes, (1)General body stretching – large group of muscles,(2).Walking 3 meters for 2 sets,(3) Deep diaphragmatic exercises – 3 repetition for 3 sets. Cool down exercise were also instructed after the exercise program with ,(1) General Body stretching,(2) breathing exerciese, (3).walking 3 minutes . statistical application used in this study where (1). Weighted mean were applied to identify the Acceptability level of Proposed Water Based Exercise Program for Psychiatric patient from Physiatrist, Psychiatrist and Physical Therapist working in Fitness centers,(2). Weighted Mean were apply to identify the level of cardiorespiratory endurance among the control and experimental group during pre – test and post test.(3.) T-test will be use to answer the effects in experimental group and the comparative effects of control and experimental group – Water based Exercise protocol to Land based Exercise protocol with p value of (<0.05).

RESULTS

Discussion on the Acceptability level of Aqua-Aero Fit: Water based exercise program for cardiorespiratory endurance among psychiatry patients is presented on succeding table;

Table 1. The Comparative table on the Acceptability Level of Water Based Exercise Program for Cardiorespiratory Endurance among A-Physiatrist,B-Psychiatrist and C-Physical therapy

Indicators	Weighted Mean			Rank			Verbal Interpretation		
	A	B	C	A	B	C	A	B	C
1. The rationale of clinical effect of water based exercise program on cardiorespiratory endurance where clearly understood.	4.00	3.67	3.58	3.5	2	2	Strongly agree	Strongly agree	Strongly agree
2. The goal and rationale of prescribing Aqua-Aero Fit: A proposed water based exercise program on cardiorespiratory endurance were cleared and well knowledgeable	4.00	3.67	3.58	3.5	2	2	Strongly agree	Strongly agree	Strongly agree
3. As clinician, I would suggest Aqua-Aero Fit: A proposed water based exercise program to be included in Physical activities for psychiatric patient and improve cardiorespiratory endurance.	3.50	3.00	3.47	7	6.5	4	Strongly agree	Agree	Agree
4. I fully aware the advantage and disadvantage of Aqua-Aero Fit: A proposed Water Based Exercise program among psychiatric patients for Cardiorespiratory endurance	3.00	3.67	3.58	8	2	2	Agree	Strongly agree	Strongly agree
5. I would recommend the use of Aqua-Aero Fit: A proposed water-based exercise program for endurance exercises for psychiatric patient	4.00	3.00	3.37	3.5	6.5	5.5	Strongly agree	Agree	Agree
6. I would consider that using Aqua-Aero Fit: A proposed water-based exercise program were highly be interesting and enjoyable in treatment program for psychiatric patient on cardiorespiratory endurance	4.00	3.00	3.16	3.5	6.5	8	Strongly agree	Agree	Agree
7. I know Aqua-Aero Fit: A proposed Water based exercise program have contributed to me to my acquisition of my relevant skills in psychiatry rehabilitation	4.00	3.33	3.26	3.5	4	7	Strongly agree	Agree	Agree
8. I would recommend the use of Aqua-Aero Fit: A proposed water based exercise program to my colleague for improving cardiorespiratory endurance among psychiatric patient	4.00	3.00	3.37	3.5	6.5	5.5	Strongly agree	Agree	Agree
Total	3.81	3.29	3.42				Strongly Agree	Agree	Agree

Table 1. shows the comparative results of weighted mean with verbal interpretation of Acceptability level among A- Psychiatrist,B- Psychiatrist and C-Physical Therapist on Aqua Fit, A Water Based Exercise program for cardiorespiratory endurance on psychiatric patient. It showed the weighted mean of the Acceptability level of Physiatrist, Psychiatrtist and Physical Therapy n on Aqua Aero Fit, A Water Based Exercise program for cardiorespiratory Endurance . Furthermore, it also shows the verbal interpretations of these means as follows. Physiatrist have got the highest weighted mean of 3.81 on acceptability level followed by

Physical Therapy with score of 3.42 and has a least score on acceptability level of 3.29. furthermore, the table also shows that Acceptability level by the Physiatrist on waterbased exercise program got the highest score on the item of its verbal interpretaion of "strongly agree'', Followed by Physical therapy and Psychiatrist with got a verbal interpretation of acceptability level of "Agree" on waterbased exercise program respectively. This related on the study of (Becker BE, 2018), clinical progress as the basis of physiatrist evaluation and management for co morbid status for depression and anxiety may decrease due to water based exercise regimen and aquatic exercises. The researcher also identifies that the other means of therapeutic exercise may be prescribe especially for mental health in terms of disease prevention and health promotion using aquatic and water based exercise program in psychiatry. On the other hand, The of Rehabilitation Medicine identifies that water based exercise program which identified in aquatic calisthenics exercise may improve muscle strength, stability and coordination, mobility, aerobic functiopnal endurance , functional reach, joint position sense, and quality of life (Saquetto M. S., 2019), which should practice in the Philippines especially in Rehabilitation medicine to enhance the quality of life among psychiatry rehabilitation for Physical fitness and improve cardiorespiratory function.

The evidence of Saquetto M. S., 2019, supports that in Physical Therapy practice identifies Water-based exercise may be a tool that may develop muscle strength, stability, mobility, aerobic functional capacity , functional reach, joint position sense, and quality of life could be considered for additional regimen in rehabilitation programs as the researcher identified the role of physical therapy for mental health which improves functional capacity and decrease complications for those patient with mental problems. On the other hand, the researcher proved that Physical Therapist handling patient with mental disorder should include water based exercise program in mental rehabilitation because the study of (Silva, 2019) emphasized that Physical therapy include aquatic exercise program which decreases depression and anxiety, increases functional and physiologic capacity and decreases oxidative stress in depressed elderly participants.

The results of table regarding the role of Psychiatrist, as member of multi-disciplinary team on Physical medicine and Rehabilitation in Psychiatry Medicine believes and agreed that an Aqua Aero Fit – a water Based exercise program for cardiorespiratory endurance exercise among psychiatry patient especially for wellness and disease prevention program. furthermore, study of (Berger BG, 2019) support the result presented above which shows that water based exercise program improves mental health, decrease anxiety and improve mood which can improve mood to improve quality of life. The researcher also agreed the comparative study study of (Ayan, 2019) which the Psychiatry Rehabilitation promotes water based exercise training modality capable of enhancing cognitive function and quality of life through improvements in mental health which the researcher believed that Psychiatrist need to develop in treatment program for the rehabilitation of patient with mental problem to increase cognitive and cardiorespiratory endurance that will enable to increase quality of life.

Table 2. The Level of Cardiorespiratory Endurance Among the Control and Experimental Group during Pretest

Level of Cardiorespiratory Endurance	Control Group		Experimental Group	
	Frequency	Percentage	Frequency	Percentage
Excellent	0	0.00	0	0.00
Good	0	0.00	0	0.00
Above average	0	0.00	0	0.00
Average	4	13.30	2	6.70
Below average	11	36.70	16	53.30
Poor	15	50.00	12	40.00
Very poor	0	0.00	0	0.00
Total	N: 30	100	N: 30	100

Table 2. shows the frequency and percentage of cardiorespiratory endurance among the control and experimental group on pre test. As shown in Table 2 the comparative difference based on the level of cardiorespiratory endurance using VO2 Max between the Control group and Experimental group. In the Control group, 50% of the participants from the control group had poor level of Cardiorespiratory endurance, 36 % of the participants had Below Average of level of cardiorespiratory endurance, 13.30% of the participants had an average level of cardiorespiratory endurance.

Table 2. also shown the percentage of level of cardiorespiratory endurance measured by VO2 max on experimental group which 53% of the participants had a below average level of cardiorespiratory endurance, 40 % of the participants had poor level of cardiorespiratory endurance, 6.70% participants with average level of cardiorespiratory endurance . cardiorespiratory fitness was linked to greater incidence of depression compared with high fitness. Studies also showed that results from three out of four studies that included anxiety as an outcome measure indicated that cardiorespiratory fitness was tied to a lower risk for anxiety. furthermore (Kandola, 2019) highly suggested that decreased levels of cardiopulmonary fitness are related with a greater risk of common mental health disorders. Therefore the researcher identified that there studies associated that muscular strength has inversely related to cardiorespiratory endurance and mental health. (Avistland, 2020) proved that results suggest that muscular strength is not associated with psychological difficulties when controlling for cardiorespiratory fitness.

Table3. The Level of Cardiorespiratory Endurance Among the Control and Experimental Group during Posttest

Level of Cardiorespiratory Endurance	Control Group		Experimental Group	
	Frequency	Percentage	Frequency	Percentage
Excellent	0	0.00	0	0.00
Good	0	0.00	1	3.30
Above average	0	0.00	13	43.30
Average	1	3.30	15	50.00
Below average	21	70.0	1	3.30
Poor	8	26.70	1	3.30
Very poor	0	0.00	0	0
Total	N:30	100	N: 30	100

Table 3. shows the frequency and percentage of cardiorespiratory endurance among the control and experimental group on Post test. As shown in Table 3. Shown the comparative difference

based on the level of cardiorespiratory endurance between the Control group and Experimental group on Post test. The level cardiorespiratory endurance measured by VO2 max. In the Control group, 70 % on the participants had below average level of cardiorespiratory endurance, 26.7% of the participants had Poor level of cardiorespiratory endurance and 3.30% had average level of cardiorespiratory endurance.

Table 3.. also showed the experimental group which 50% of the participants had showed an average level of cardiorespiratory endurance, 43.3% had got above average level of cardiorespiratory endurance, 3.30% had good level of cardiorespiratory endurance, 3.3% of got below average level of cardiorespiratory endurance and 3.3% participants with poor level of cardiorespiratory endurance. The results of the data showed confirmatively that the study of (Silva, 2019) suggest The aquatic exercise program decreases depression and anxiety, incresaes functional capacity and decreases oxidative stress in depressed elderly popuilation. These also supports the study of (Vijayara, 2019) also stated that aqua aerobic exercises conduce to a identified improvement in decreased weight and cardiovascular endurance including mental health. These data suggested that Water Based exercises specifically the proposed Aqua Fit for cardiorespiratory endurance may improve quality of life, improved mood and decrease cardiorespiratory endurance. Through these, the study of (Tamin, 2018), water based exercise study found that patients enhanced general health and energy. After that, exercise could be continued in land-based settings to improve cardiorespiratory endurance and quality of life.

Table 4. Difference in the Pretest and Posttest Level of Cardiorespiratory Endurance Among the Experimental Group

	Mean	t-test	p-value	Interpretation
Pretest	32.333	12.571	0.000	Significant
Posttest	39.000			
Significance level @ 0.05				

Table 4. Shows the significant Difference in the Pretest and Posttest Level of Cardiorespiratory Endurance Among the Experimental Group.

As shown in the table , the difference in the pretest and posttest results of cardiorespiratory endurance level to the experimental group. The probability value of 0.000 was less than the 0.05 significance level. This means that the water-based exercise program for cardiorespiratory endurance was effective.

Table 4. showed the difference of Pretest and Post test level of cardiorespiratory endurance among experimental group. Pretest had a mean value of 32.33, Post test had 39.00 with t test value of 12.57 with p-value of 0.00. These shows the difference of the effect between the control and Aqua Aero Fit water based exercise program for cardiorespiratory endurance for Psychiatric patient which supports the study (Vijayara, 2019) that aqua aerobic exercises conduce to a pronounced results in weight loss and cardiorespiratory and physical fitness including mental health.

Table 5. Difference in the Pretest and Posttest Level of Cardiorespiratory Endurance Among the Control Group

	Mean	t-test	p-value	Interpretation
Pretest	32.033	0	-	Not Significant
Posttest	32.033			
Significance level @ 0.05				

Table 5. shows the Difference in the Pretest and Posttest Level of the Cardiorespiratory Endurance Among the Control Group.

As shown on the table 5.,since the computed t-value of 0 is lower than the T-critical value of 1,699 at 0.05 level of significance with 29 degree of freedom, the null hypothesis confirmed.This means that there is no significant difference between the effect of pre test and post test. This means that the intervention on the control group was no effective for cardiorespiratory endurance. These also proves that studies of (Neiva, The effect of 12 weeks of water-aerobics on health status and physical fitness: An ecological approach, 2018) that water aerobics performed twice a week in a real-life context seem to benefit the explosive strength, body composition, and blood pressure of adults and older adults.

Table 6. Difference in the Posttest Level of Cardiorespiratory Endurance Among the Control and Experimental Group

Posttest	Mean	t-test	p-value	Interpretation
Control group	32.033	-8.273	0.000	Significant
Experimental group	39.000			
Significance level @ 0.05				

Table 6. Difference in the Posttest Level of Cardiorespiratory Endurance Among the Control and Experimental Group.

As shown, there was significant difference in the post test on the control group with mean value (32.033) and Experimental group which had a mean value of (39.00) on cardiorespiratory endurance level among the Experimental group of a significant t-test level of -8.273. The probability value of 0.000 was less than the 0.05 significance level which also proved that Aqua Aero Fit, Water Based exercise program is effective that Conventional land base Aerobic Exercise Program.

The results of the data showed confirmatively that the study of (Silva, 2019) suggest The aquatic exercise program decreases depression and anxiety, improves. These data suggested that Water Based exercises specifically the proposed Aqua Fit for cardiorespiratory endurance may improve quality of life, improved mood and decrease cardiorespiratory endurance. Through these, the study of (Tamin, 2018), water based exercise study found that patients enhanced general health and energy. After that, exercise could be continued in land-based settings to improve cardiorespiratory endurance and quality of life.

DISCUSSION

Acceptability level on Aqua-AeroFit: a Water based Exercise program for cardiorespiratory endurance among the Following stakeholders shows that the Acceptability level among had the total weighted mean scores of 3.81 with a summative verbal interpretation of "strongly agree while The Acceptability level among Psychiatrist on Aqua-Aero Fit: had the total weighted mean scores of 3.29 with a summative verbal interpretation of " agree" .The Acceptability level among Physical Therapist on the other hand had a the total weighted mean scores of 3.29 with a summative verbal interpretation of "agree".

Therefore,the study showed an increase of acceptability level among Physiatrist or the Rehabilitation Medicine using the proposed Aqua-Aero Fit: A Water based Exercise program on Cardiorespiratory Endurance among psychiatric patients. This related on the study of (Becker BE, 2018), clinical progress as the basis of evaluation of the physiatrist as head of Physical Medicine and Rehabilitation which specific management for co morbid status for depression and anxiety may decrease due to water based exercise regimen and aquatic exercises were identified using specific regimen.

The study also showed that the level of cardiorespiratory endurance of the participants among experimental and control group on pretest were below average and poor respectively.this is relate to the The study of (Kandola, 2019) which resulted shown about the relationship of mental health status in cardiorespiratory endurance which influence of low cardiorespiratory fitness on mental health is well-established due to anxiet and depression. The level of cardiorespiratory endurance of the participants on Posttest among the experimental group resulted in average level while control group showed below average. These shows the difference of the effect between the control and Aqua Aero Fit water based exercise program for cardiorespiratory endurance for Psychiatric patient which supports the study (Vijayara, 2019) that aqua aerobic exercises conduce to a pronounced results in weight loss and cardiorespiratory and physical fitness including mental health.

The study also identified that there is a significant effect on Aqua-Aero Fit ,A Water Based exercise program compare to land Base aerobic exercise program on cardiorespiratory endurance among psychiatric patients.the study also suggested that Water Based exercises specifically the proposed Aqua Fit for cardiorespiratory endurance may improve quality of life, improved mood and decrease cardiorespiratory endurance which is suitable for psychiatric patient enrolled in rehabilitation centers which also supported the study of (Vijayara, 2019) also stated that aqua aerobic exercises conduce to a significant improvement in weight loss and cardiorespiratory fitness including mental health. These suggest that the overall findings that Aqua-AeroFit: a proposed water based exercise program on improving cardiovascular endurance for psychiatric patient is more effective conpare to conventional landbased exercise program.

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