

Effect of Physical Exercise in Improving Mental Health and Social Behaviorism among Transgender Women for their Quality of Life

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Abstract

Background: Transgender people are more susceptible to psychological problems including social anxiety and environmental pressures like prejudice. Because of societal discrimination, both Binary Trans genders have high levels of mental health concerns. Male to female transgenders' can be found in our neighborhood. As a result, we are more likely to pick Trans women. Because of their gender transition, transgender women are more likely to have mental health issues like sadness, anxiety, and self-harm. Mood distress and suicidal attempts are more common in transgender women than in the general population, which can lead to hospitalization. We are emphasizing the relevance of attention in mental health and social behaviorism for their quality of life in this study with the help of physical exercise.

Method: The basics of inclusion and exclusion criteria were taught to a total of twenty transgender women. A convenient sampling method was used to collect subjects. For ten weeks, the patients were treated with physical exercises, such as aerobic and breathing exercises.

Result: The mean values are 76, 70, 19.65 on the Beck anxiety inventory scale, Hamilton depression rating scale, and Leibowitz social anxiety scale, respectively, with standard deviation values of 1.48, 0.945, 13.10, and paired values of 11.43, 16.54, and 6.70.

Conclusion: The study's findings suggest that Physical exercise has improved in transgender women can enhance their mental health and social behavior to improve their quality of life.

Keywords: transgender women; mental health; aerobic exercise; breathing exercise; beck anxiety inventory scale; hamilton depression rating scale; leibowitz social anxiety scale

Introduction

Transgender is a phrase used to refer to a multitude of identities. They can be found all over the world and engage in a variety of social activities. They are migrating mentally and physically to the next level. It refers to those who, in the wider definition, do not adhere to conventional gender definitions [1]. Transsexual men and women who have had their genitals altered to match the gender they want to express, as well as transgender men and women who have a gender identity other than the one assigned at birth but have not had genital alteration surgery, are appealed to by this phrase [2]. Transgender people have a biological gender or expression that differs from their biological sex. According to peer reviewed papers, transgender people have a higher risk of self-harm, hypervigilance, and manic-depressive disorder

than the general population [3,4]. Transgender women teenagers are more likely to experience psychological distress, particularly social anxiety [5]. Transgender women may endure environmental density, such as discrimination, interpersonal stress, or anticipating discrimination and personal constraints. Density may be connected to mental health difficulties, according to one study.

Gender services-using transgender women reported much greater rates of mental health issues such depression, anxiety, and self-harm than other gender groupings [6]. Transgender people experience discrimination and dehumanization, which leads to stress, despair, and other negative mental health implications in our society. It causes depression, anxiety, and suicide attempts [7,8]. Gender congruence is a condition that affects transgender people. Six times more likely than the general

population to have a mood or anxiety disorder. Antidepressant and anti-anxiety meds are recommended three times more frequently. Suicide attempts are more than six times as likely to result in hospitalization [9]. Transgender persons face a lot of intolerance in today's environment. This could explain why they have a disproportionately greater risk of poor health. The broadest census of genderqueer women adults worldwide is the national transgender discrimination survey. We seek for persons who have attempted suicide, misused drugs or alcohol, or smoked cigarettes [10].

Transgender people have significantly greater incidence of depression than the general population. In transgender women, the lifetime prevalence of depression has been estimated to be at 62 percent [11]. While 16.6% of the US population endures from depression at some point in their lives [12]. The high percentage of melancholy is predictable given the harassment transgender persons face. Transgender people are particularly sensitive to mental health concerns and psychological pain, according to Nutt Brock, Rosenblum, and Blumenstein (2002) [13]. Transgender women had higher levels of anxiety and despair than the normal population, according to study. Depression affects 16.6% of the population, while anxiety disorders in general affect 28.8% of the population (Kessler, Berglund, Delmer, Jinn, & Walters, 2005). [14].

In the research, depression rates among transgender people range from 48 percent to 62 percent [15]. Anxiety and overall distress are prevalent among transsexual women, with percentages ranging from 26% to 38%. (Muntnansky, Garofalo, and Emerson, 2010; Hepp, Kraemer, Schnyder, Miller, and Delsignore, 2005). Despite the fact that transgender people experience higher rates of depression, anxiety, and general unhappiness than the general population, just a few studies have looked into probable causes. Gender-related abuse and depression among transgender women show a significant positive connection, according to Nutt Brock et al. (2010) [16]. Anxiety disorder and symptoms are more common in those whose gender identification does not match their given gender at birth. The specific type of anxiety disorder that transgender women suffer from in order to provide more effective, tailored treatment. Social Anxiety Disorder (disproportionate fear or anxiety when performing in front of others for at least 6 months) and Generalized Anxiety Disorder (severe anxiety and worry over a wide range of topics,

events, or activities) are two separate disorders that should not be confused. Depending on the nature of the individual's concerns, the therapy method will differ [17].

They discovered that elevated concentrations of psychotic symptoms are linked to worse levels of self-esteem and interpersonal functioning, highlighting the necessity of therapeutic therapies aimed at self-esteem and interpersonal issues, as well as easy access to transgender health care. Transgender and identity non-heterosexual adolescents have a higher rate of transgender suicide than the overall population. Suicide is linked to discrimination, familial rejection, internalized transphobia, and being denied proper toilet or housing access. Assessing the risk of suicide among transgender and gender nonconforming patients, as well as discussing earlier experiences of prejudice or abuse, is crucial to minimize further victimization [18]. Supporting Trans persons cope with harassment and rejection, particularly through social support, may enhance their mental health, lowering their risk of suicide. According to the survey, whether a person helps a transgender woman who has been harassed or denied, marginalization is a strong predictor of mental health symptoms and suicidal ideation, with depression predicting suicidal ideation, particularly in trans women [19].

Social support refers to the number of people in one's life who provide emotional and mental resources for coping. This is typically broken down into categories. For example, family and peer (or friend) support. Social support from family is often limited for transgender women) since families react to the shift and may reject the transitioning family member [20,21]. Although a woman's pretransition peer group may reject her, transitioning often leads in affirmation by other trans women, particularly in urban areas [22]. Social support tends to reduce the probability of depression in transgender women. Several studies have revealed a direct correlation between improved mental health and family and peer support [23]. The presence of social support in the previous month (from family and both transgender and non-transgender friends) is protective against depression, according to NE Moto et al. [24], but it is the contentment with that support that is protective. Although it is unclear, peer support may not be as important as family support in predicting depression. In a prior study, social support was identified as being particularly important for psychological pain, and it was suggested that social support could help to

alleviate this link. The purpose of this research was to see if there were any patterns of linkages between marginalization, emotional health, and depressed mood in Tran's people, and if social support could assist to attenuate these associations [25].

Appropriate support was examined using items about perceived supportiveness of mom and dad, brother and sister, companions, and kids, whereas care and support was measured using measures of time spent with other transgender persons and reported feelings of loneliness in being transgender. The inequity of these measurements when compared is a source of concern. Some other study found that the impact of welfare protection, at least on the surface, on whether transgender women who embrace or reject their gender identity take drugs is linked to depression varies depending on their life stage. Interpretation by parents and siblings is significant until mid-life, when evaluation by a prospective relationship becomes significant beginning in young adulthood) [26]. Because of a lack of societal supports, transgender people are suffering from sadness, discrimination, anxiety, and suicide, according to the report. It demonstrates that transgender people are naturally anxious and suffer from social behaviorism to a great extent. During this process, Physical activity can have physiological consequences including changing endorphin and monoamine levels or lowering cortisol, the stress hormone, which can enhance a patient's mood [27].

A large increase in the amount of psychological discomfort among the general population has been documented in studies. These feelings of sadness revealed biochemical as well as psychological despair. Travel limitations have added to the hardship and social separation as disrupted people's social and economic lives. This hurts people's mental health [28]. Physical activity and exercise have a wide range of health advantages for both the body and the mind. We present an overview of the effects of exercise on the body "out from chest down" that may be advantageous to persons suffering from depression, given that this is an artefact and archaic norm [29]. Physical exercise has been shown to be an effective treatment for significant depression in adults in many randomized controlled trials comparing it to a variety of different treatments, including usual care and psychiatric interventions. The optimum quantity of cardiovascular activity, with intensities ranging from high to moderate or mild to mild, to get the best dose-response. Exercise may be beneficial as an addition to

antidepressant therapy for anxiety disorders, but it is not as effective as antidepressant medication. Both aerobic and non-aerobic exercise appear to help with anxiety symptoms. Despite this, due to methodological difficulties, there is a lot of uncertainty concerning the effectiveness of exercise in treating depression [30]. Transgender women are disproportionately affected by sadness, anxiety, and discrimination, according to the findings of a general survey study. It is vital to engage in social support and physical activity to avoid this. Individual transgender people should exercise on a daily basis. Physical activity enhances social behavior and lowers depression, anxiety, and overall mental health [31].

Methods

Participation

This study included a total of 20 participants, all of whom were between the ages of 25 and 35. The following were the criteria for inclusion: Subjects who are transsexual women and have adequate hearing, vision, and stamina. Mental health and social behaviors are lacking in the subjects. They are from a middle-class family.

Study design

This study was designed with ordinary transgender women in mind. The participant's procedure was overseen by a single physiotherapist. The physiotherapist assessed the subject at the baseline and followed the typical inclusion and exclusion criteria for implementing the exercise program.

Outcome Measures

Beck Anxiety Inventory Scale

The BAI is a four-point scale with 21 items that is used to measure the severity of cognitive and behavioral anxiety symptoms in the past week. Minimal anxiety (0-7), mild anxiety (8-15), moderate anxiety (16-25), and severe anxiety (26-63) all have scores ranging from 0 to 63.

Hamilton depression rating scale

The HDRS is a commonly utilized depression assessment tool used by doctors. The original version has 17 items (HDRS17) that are related to depressed symptoms that occurred in the preceding week. In the latter 21-item version, a total score of 57 of 0-7 is generally considered to be within the normal range, whereas a score of 20 or higher (indicating at least moderate severity) is normally required for participation in a clinical trial (HDRS17).

Leibowitz social anxiety scale

The LSA scale is a 24-item self-rated scale that is used to assess how social behavior affects every life situation mentioned in the scale. Participants must read the situation carefully and answer two questions about it. The first question inquired about your level of anxiety or worry in the situation. The second question inquires about how frequently you avoid the scenario. 0-4 with a total possible score ranging from 0 to 68. 21-30 (mild) (social anxiety), 31-40 (moderate), 41-50 (severe), and over 50 (extremely severe).

Intervention

Each subject participated in a seven-month exercise enhancement program. Physical training (aerobic activities) and breathing exercises (Tai chi technique) were performed for a total of 60 minutes per day and five times per week for a total of 10 weeks, including a warm-up and cool-down, according to the principles of Subjects received to progress in their goods.

Training program

The subjects were chosen using a practical sampling strategy. A suitable sampling procedure was used to pick 20 people who fit the inclusion and exclusion criteria. Both 20 subjects were placed in the same group and were given a thorough explanation of the study, as well as signed informed consent from those who met the criteria. They were instructed on how to use the scale and how to administer it. The subjects were given clear instructions, including the purpose, safety precautions, comfort, and psychological support. Subjects' vitals were assessed before the pre-test assessment. Warm-up and cool-down exercises were performed before and after physical exercise, including both aerobic and breathing exercises. The program consisted of five sessions per week, each lasting 30 minutes with a warm-up, 20 minutes with exercise run, and 10 minutes of hold down, for a total duration of 60 minutes until sunset.

Exercise protocol

Aerobic Exercise

Aerobic exercises such as lunges, high knees, mountain climbers, plank, jumping jacks, squats, and V shape crunch position are followed by a moderate intensity routine based on FITT principles. Duration: 60 minutes per day for 10 weeks, 5 days per week. Each exercise was performed for 5 minutes with a 1-

minute relaxation period in between. The results showed a significant improvement in mental health.

Taichi Breathing Technique

The activity, which is based on Taichi Technique, involves soaring like a wild goose and scooping from clouds. The session will begin with a 5-minute warm-up, followed by 30 minutes of Taichi practice and a 5-minute cool-down. Each workout lasts 5 minutes, with a one-minute rest period in between. Stress and anxiety are lessened, blood pressure is regulated, and mental health is improved.

Data analysis

The data were evaluated by using paired t-test. The paired - t-test was used to find out the statistical analysis between the pre- and post-values of Beck anxiety inventory, Hamilton depression rating scale, Leibowitz social anxiety scale.

Result

A total of 20 people were included in the study. The age range is 25 to 35 years old. The Beck anxiety inventory, Hamilton depression rating scale, and Leibowitz Social Anxiety Scale were all administered before and after therapy for a median of 10 weeks. The Beck anxiety inventory has a mean difference of 76, the Hamilton depression rating scale has a mean difference of 70, and the Leibowitz Social Anxiety Scale has a mean difference of 19.65. The Beck anxiety inventory has a standard deviation of -1.48, whereas the Hamilton depression assessment scale has a standard deviation of 0.945. The Leibowitz social anxiety measure has a standard deviation of -13.10. Beck anxiety inventory paired - t-test value: -11.43, Hamilton depression rating scale paired value: 16.54, Leibowitz social anxiety scale paired value: 6.70. For a 5% level of significance, the paired -t-test value is greater than 2.08. Physical exercise is more effective for mental health and social behaviorism, as well as improving quality of life among transgender women, according to the paired- t-test values. A total of 20 people were included in the study. The age range is 30 to 40 years old. The Beck anxiety inventory, Hamilton depression rating scale, and Quality of life scale were used before and after therapy for a median of 10 weeks.

Table 1: Mean Difference, Standard Deviation & Paired T-Test of Beck Anxiety Inventory, Hamilton Depression Rating Scale, Leibowitz Social Anxiety Scale.

Scale	Mean difference	Standard deviation	Paired t-value
BAI	3.8 ± 18	1.48	11.43
HDS	3.5 ± 18	6.94	16.54
LAS	19.65 ± 18	13.10	6.70

BAI: Beck Anxiety Inventory, HDS: Hamilton Depression Rating Scale, LAS: Liebowitz Social Anxiety Scale.



Figure 1: V-Crunch position.



Figure 2: Mountain climbers.



Figure 3: Group Exercise (scooping from clouds).



Figure 4: wild goose.

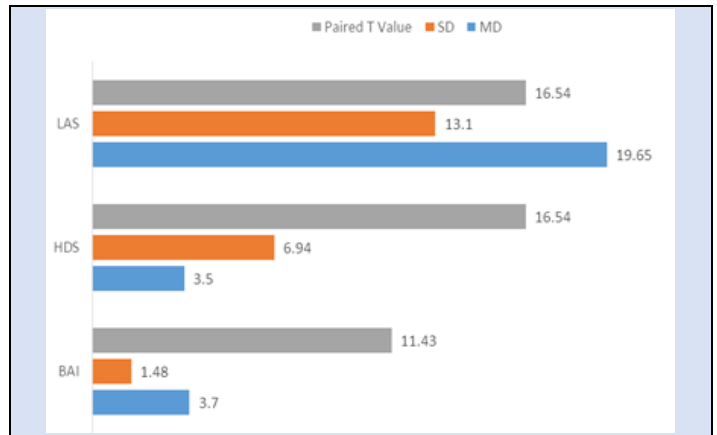


Figure 5: Statistical data presentation Mean difference, Standard deviation & paired- t-test of Beck anxiety inventory, Hamilton depression rating scale, Leibowitz social anxiety scale.

SD: Standard Deviation, MD: Mean Difference, BAI: Beck Anxiety Inventory, HDS: Hamilton Depression Rating Scale, LAS: Liebowitz Social Anxiety Scale.

Discussion

All the transgender societies have the problem of social discrimination which leads to anxiety and depression higher than the cisgender people. So, in this thesis, we give a detailed explanation of the impact of physical exercise on transgender. The reason for selecting transgender women is that there are rare transgender men while transgender women are more common in our surroundings and they accepted the practicing of physical exercise for the research purpose. While taking into account the benefits of physical activity in enhancing mental health and social behavior in transgender women. I discovered a significant and positive improvement in transgender women. According to Lopez-Forrestal et al., therapeutic physical exercise has an undeniable health benefit in a variety of mental health conditions such as depression and anxiety disorders and has a higher value and socioeconomic significance. This had a significant impact on transgender people's quality of life. Chrane Lawlor et al. investigated the effect of exercise on depressed subjects for several years before concluding that exercise is useful for the therapy of mental health and social difficulties. Watanabe et al., Regular physical exercise, and cognitive behavioral therapy exercise reduce depression and anxiety in patients and improve general mental health. Dominic. Gipson, Results showed that socially transitioned transgender youth have higher levels of anxiety, sadness, and a variety of health problems than normative people and peer

groups. The social transition builds robust mental health, but the social support factor is low, which leads to depression and suicide ideation. As a result, physical activity boosts self-esteem and reduces depression. DE moor and his colleagues in comparison to persons who do not engage in frequent physical activity, people who engage in the more physical activity report having fewer mental health problems (e.g., depression, anxiety). The research findings show that exercise can increase QOL by providing opportunities for social connection and goal-directed activity. It can also help people who suffer from anxiety and depression feel more empowered and have more self-confidence. Physical and mental health have both been demonstrated to benefit from regular exercise. While there have been several studies on the impact of exercise on physical health, there have been far fewer on the effects of exercise on mental health. The hippocampus has been studied for its anti-stress benefits, with plausible mediators such as exercise-induced neurogenesis and growth factor expression being proposed. Two other proposed causes include exercise-induced alterations in the hypothalamic-pituitary-adrenal axis, which mediates the stress response, and activity changes in serotonergic neurons inside the dorsal raphe nucleus, which play the same key role in acquired helplessness behaviors.

Exercise improves synaptic plasticity through altering synapse shape and potentiating synaptic strength, as well as enhancing the underlying systems that under plasticity's city, such as neurogenesis, metabolism, and vascular function. Exercise-induced structural and functional alterations have been observed in a variety of brain regions, but the hippocampus is the best-studied. Exercise increased peripheral norepinephrine levels, decreased mediator levels such as TNF (Tumor Necrosing Factor), IL1 (Inter Liukin 1), and IL6 (Interleukin 6), decreased ACTH (Adreno Cortical Tropic Hormone) levels in the central nervous system, and elevated endocannabinoids, endorphins, and dopamine levels.

Bdnf, Felipebschuch et al. Exercise has been shown to be an effective treatment for depression. This conclusion is especially relevant because depression and anxiety are a substantial social burden, resulting in higher healthcare costs, a higher risk of morbidity, mortality, intellectual and occupational impairment, and an increased chance of mortality.

Physical activity has the greatest influence on the reduction of anxiety and depressed symptoms. To explain the psychological origins of exercise-induced benefits, several ideas have been offered. Exercise has been found to aid in the reduction of anxiety and stress, as well as the improvement of body image, self-concept, personality, subconscious, and self-confidence, as well as the prevention of negative thinking. As a result, exercise is essential for promoting well-being, increasing life happiness, improving cognitive abilities, and general health. Murilokheda When the effect of exercise is compared to the usage of antidepressants in terms of symptomology and cognitive performance in depression, Lamegoetal et al. conclude that the optimal dose-response is from high to moderate or moderate to mild.

Peter. Carek, Depression and anxiety are the most common mental illnesses seen in general care, affecting millions of people in the United States. Sadness and anxiety treatments come in many different forms, each with varied degrees of success. Physical activity has been related to a decrease in sadness and anxiety symptoms. Exercise's efficacy as a depression treatment has been proven in studies. Exercise surpasses antidepressant medicines as a first-line treatment for depression. Punnet Narong, MD, and colleagues revealed three ways to reduce depression symptoms in the TGNC community: greater parental relationships support, increased emotional stability, and baby activities that boost self-esteem. Emotional stability is protective because it enhances one's ability to resist suicidal thoughts, and lowering child-related worries lowers suicidal behavior. Internalized transphobia, legal documents that represent one's recognized gender, accessibility to sexual preference surgery (if necessary), and social support all lower suicidality. Rachel Butler et al, Individuals who are transgender or gender nonconforming (TGNC) are more likely to experience psychological problems, such as social anxiety (SA). more conformance to normative gender standards, resulting in less discrimination, rejection, victimization, and non-affirmation Self-esteem may be boosted if physical attributes and gender identity are more aligned.

Alexandros Kristyalexandros Kristy, In the general population, physical activity has been found to boost mental health and well-being. The impact of exercise on mental health and quality of life in people suffering from severe and persistent mental

diseases is being investigated. Exercise can help with symptoms like attentiveness, attention, sleep patterns, and psychotic symptoms. Exercise can also improve one's quality of life by promoting social connection and purposeful engagement. Matthew P. Exercise effects among patients with anxiety disorders. There has been less research on the impact of fitness training on people who have been diagnosed with anxiety disorders. Exercise training may be a useful adjuvant or adjunct therapy for clinically significant anxiety, according to the minimal evidence available. The effects of exercise on each anxiety disorder are organized into groups based on their prevalence. According to the final stage of my thesis research, Aerobic and breathing exercise improved general mental health and social behaviorism. The study has proved that Physical activity has been shown to improve the mental health and social behaviorism of transgender women, resulting in a higher quality of life.

Conclusion

The study concludes that there is a considerable improvement in the physical activities based on the findings. The significance of the Beck anxiety inventory scale, Hamilton depression rating scale, and Leiwbotz social anxiety scale was investigated. Finally, it was concluded that if transgender women improved their mental health and reduced their social anxiety fears by enhancing their social behaviorism they would be happier. Physical activity has a significant impact on mental health and social behavior, as well as improving people's quality of life of transgender women.

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