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# Effect of Simplified Kundalini Yoga with and without SKY Chanting on Anxiety and Depression among Transgender Women

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**Abstract:** Higher prevalence of mental health problems among transgender women than among the general population have a profound impact on their well-being and quality of life. Research on transgender people's emotional health is sparse. The purpose of the research was to compare the efficacy of Simplified Kundalini Yoga with and without SKY chanting in reducing anxiety and depression in transgender women. Simplified Kundalini Yoga and SKY chanting might have a substantial impact on the mental health of transgender women by reducing symptoms of anxiety and sadness. 45 transgender women between the ages of 25 and 35 were recruited from the Pharm Foundation in Semmanjeri, Chennai, India and the Sahodaran in Aminjikarai, Chennai, India and randomly assigned to one of three groups (A, B, or C) of 15 participants each. Before beginning the training process, the selected dependent variables were pre-tested for each of the three groups (A, B, and C). Group A received simplified Kundalini yoga accompanied by SKY chanting, Group B received simplified Kundalini yoga without SKY chanting, and Group C (the control group) received no treatment other than active rest. Experimental groups were given simplified Kundalini Yoga routines three times per week for about 60 min per day for a total of twelve weeks, either with or without SKY chanting. During a twelve-week period of experimentation, all three groups (A, B, and C) were retested using the same favoured dependent variables. Depression and anxiety scores were disclosed. In order to evaluate the significant differences between the experimental groups and the control group, Analysis of Covariance (ANCOVA) was utilized. The level of confidence used in the significance test was 0.05. Compared to the control group, the experimental groups that practiced Simple Kundalini Yoga reported significantly lower levels of anxiety and sadness. Simplified Kundalini Yoga, with or without SKY chanting, was shown to lessen symptoms of anxiety and sadness in transgender women.

**Keywords:** Transgender women, Anxiety, Depression, Simplified Kundalini Yoga, SKY chanting

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## Introduction

Transgender is an umbrella term that describes people whose gender identity may not match with assigned sex (Philip and Raju, 2020). People who identify as transgender are usually people who are born with typical male or female anatomies, but feel as though they have been born into the "wrong body." Transgender women are male to female individuals, who are assigned as male at birth and who identifies themselves as a female (Jamie *et al*., 2011; Lennie 2020). A transgender woman lives as a woman today, but was thought to be male when she was born. Transgender women face several issues because of their uncertainty in gender identity. Compared to general population, transgender population tends to experience higher rates of mental health issues. According to fifth annual employment-unemployment survey report done in 2015-2016, it was estimated that the overall unemployment rate of transgender in India was found to be 2.1% (Philip and Raju, 2020). A study says that unemployment issue is associated with higher levels of depressive symptoms and major depressive disorder in which their mental health gets undermined (Amiri, 2022). Most of the transgender women experience various discrimination in their lifetime including physical abuse 32%, verbal abuse 56% and sexual violence 32% and these abuses are associated with depression (Nuttbrock *et al*., 2014). Due to discrimination seen in systemic, institutional, and interpersonal levels, many of them chose sex work as their undesirable career (Nadal *et al*., 2014). Sex workers experiences stigma surrounding their profession, which shows a significant impact on their mental health (Treloar, 2020). Retrospective studies suggest that transgender women are at higher risk in HIV and cardiovascular risks such as myocardial infarction, venous thromboembolism and cerebrovascular accidents are found among them especially those with HIV infection (Cetlin, 2021).

With regard to mental health, transgender women are more likely to experience depression, suicidal ideation, and prior suicide attempt (Bockting *et al*., 2005; Chen *et al*., 2020). Transgender women reported to have prevalence rate of depression at 63%, which is much higher when compared to the general population prevalence rate at 16.6% (Hoffman, 2014). Factors influencing depression in transgender women are confused state of their gender, social exclusion, HIV risk, violence on them, and sex work. Depression and anxiety (63%), obesity (58%), and hyperlipidemia (54%) were the most common comorbidities associated with cardiovascular risk factors in transgender women (Mahowald *et al*., 2021). Transgender women experience mood and anxiety disorders at higher rates, suicidal thought, and substance use disorders than general population (Schulman, 2017). Transgender individuals are at higher risk in physical and mental health as they buy hormones from local private pharmacies or abroad through friends (Regmi 2019). Transgender women face many challenges in getting hormonal treatment and sex reassignment surgery (Liamputtong, 2020). Due to their poor socio-economic status and low educational status, transgender women face many issues in receiving proper health care services (Lombardi *et al*., 2001).

As transgender women are said to be a vulnerable population, there should be a development of tailored and holistic mental health interventions (Malik *et al*., 2017). Holistic interventions helps to overcome their physical, mental, emotional and social issues, which they are facing in their day to day life. Yoga is considered as a holistic science, which keeps the body healthy, mind calm and leads to peace and harmonious life.

### *Yoga for Anxiety and Depression*:

Even today, many people turn to the ancient art of yoga as a means of healing. The goal of yoga is to achieve and maintain harmony between the body and the mind in all of its components. Many research have shown that yoga is helpful for stress-related problems, suggesting that it may be a useful tool for stress management and

reduction. There was some evidence that yoga might help alleviate symptoms of moderate depression in young people (Woolery, 2004). A research conducted on troubled women in Germany found that after three months of yoga practise, there was a considerable reduction in anxiety and sadness (Michalsen, 2005). Yoga's effectiveness in treating psychologically pathological conditions, cardiovascular disease, respiratory illness, and diabetes has been shown. Twelve of thirteen mental inpatients at the New Hampshire Hospital reported feeling less anxious, depressed, angry, tired, or confused after practicing yoga (Lavey *et al*., 2005). Results from studies on the effects of yoga on psychopathological, cardiovascular, pulmonary, and diabetic conditions were promising. Thirteen mental hospital inpatients at the New Hampshire Health System reported substantial improvements in their heart rate, despair, anger, exhaustion, and bewilderment after practising yoga (Lavey *et al*., 2005).

Yogiraj Shri Vethathiri Maharishi invented Simple Kundalini Yoga (SKY) to preserve equilibrium between human beings and their environment. Simplified physical activities for health, kayakalpa yoga for anti-aging, meditation and mindfulness techniques for inner calm and introspection for joy are all part of the SKY method.

Mantra is a powerful spiritual practise for freeing the mind from the shackles of delusion, illusion, and ignorance. Mantra's potential energy emerges from its causal energy, which in turn bestows amazing benefits. Mantra is chanted again and over again, which trains the mind to pay close attention to the sounds being made. A further therapeutic benefit of mantra chanting is its ability to help one deal with and eventually conquer stress (Lim, 2013). Stress may be managed at little cost with the use of chanting, which also relaxes the mind and has other beneficial benefits on the body and spirit.

The term "Vazhga Valamudan" appears in simplified forms of Kundalini Yoga chanting. Blessings are often expressed using this term. Intentional repetition of these phrases as a kind of blessing for others has the same effect as reciting a mantra (Maharishi, 2018). It is the retroflex approximant of the Tamil letter 'zha,' which is stretched while chanting of this mantra. Lambika Yoga is the rolling-the-tongue-upwards practise recommended by the Yoga Kundalini Upanishad. Khechari mudra is a kind of Lambika Yoga (Ayyangar, 1938). If an aspirant wants to make progress on the road to self-realization, practising this mudra is one of the most crucial and fruitful things they can do (Vandali, 2018). As a result, it has been given the title "king" among mudras.

The objective of the study was to find out if there would be any substantial difference between transgender women on selected psychological variables such as anxiety and depression due to simplified kundalini yoga with and without SKY chanting. It was hypothesized that there would be noteworthy differences on selected psychological variables such as anxiety and depression among transgender women in the experimental group A and experimental group B compared to the control group (group C).

The delimitations of this study are – (i) The research was restricted only to transgender women from Pharm Foundation, Semmanjeri, Chennai and Sahodaran, Aminjikarai, Chennai; (ii) The age of the subjects were ranged from 25 and 35 years old; (iii) The study was confined to simplified kundalini yoga practices with and without SKY chanting as independent variables only; and (iv) The study was confined to anxiety and depression as dependent variables only. The limitations of this study are – (i) Socio-economic factors were not considered; (ii) Climatic conditions were not taken into account; (iii) Transgender women’s lifestyle habits were not considered; (iv) Subject’s day to day activities were not taken into consideration; and (v) Medication, hormonal surgery and diet followed by subjects were not controlled.

## Materials and Methods

45 transgender women were randomly selected using a random sampling procedure from Pharm Foundation, Semmanjeri, Chennai and Sahodaran, Aminjikarai, Chennai between the ages of 25 and 35 years and were separated into three groups A, B and C, each group having 15 subjects. Before the start of the training program, a preliminary evaluation for the three groups (A, B, and C) on the designated reliant on variables was performed. Simplified Kundalini Yoga with SKY chanting were given to Group A, Simplified Kundalini Yoga without SKY chanting were given to Group B and Group C was employed as control group with no preparation. The three groups (A, B and C) were retested on the same preferred dependent variable (Anxiety and Depression) after an experimental period of twelve weeks. Anxiety and Depression were performed and replies were registered. Analysis of Covariance (ANCOVA) was used to assess the relevant distinctions between the two experimental groups and the control group. The significance trial was set at a degree of trust of 0.05.

In terms of anxiety and depression, a score of 70 was found utilising the Hospital Anxiety and Depression Scale (HADS; Zigmond and Snaith, 1983). The Hospital Anxiety and Depression Scale (HADS) is a 14-item self-report screening tool designed to detect the presence of anxiety and depression in medical, non-psychiatric settings. The HADS has a depression scale (HADSD) and an anxiety scale (HADSA). Certain items on the 4-point Likert scale that go from 0 to 4 are reverse-scored, making for a total of seven items per subscale. Each section has a maximum possible score of 21, for a total of 42. Scores between 0 and 7 on both measures indicate a non-clinical range, whereas scores between 8 and 10 reflect the likely existence of a depression or anxiety condition. If you scored 11 or above, you most likely suffer from depression or anxiety. The HADS has been administered to transgender people in the past.

## Results

The adjusted mean value of anxiety for Simplified Kundalini Yoga with SKY chanting was 6.53, for Simplified Kundalini Yoga without SKY chanting it was 7.99, and for the control group it was 10.62 (Table 1). Adjusted mean F-ratio of 82.56 was larger than the 3.23 table value needed for significance at the 0.05 level of confidence. Anxiety levels were found to be significantly different across the study's experimental and control groups. There is a substantial difference between experimental and control group averages on the test both before and after treatment (Table 1). Figure 1 depicts the average anxiety scores of the experimental group, the control group, and the adjusted post-test group.

Adjusted mean values of depression for the Simplified Kundalini Yoga with SKY chanting group (6.92), the Simplified Kundalini Yoga without SKY chanting group (7.69), and the control group (10.31) are shown in Table 2. With 2 and 41 degrees of freedom, respectively, the F-ratio of 72.52 achieved for the adjusted mean which was larger than the table value of 3.23 needed for significance at the 0.05 level of confidence. The research found that there was a statistically significant difference in the levels of depression between the experimental groups and the control group. There is a statistically significant difference between the experimental and control groups in their test mean scores before and after treatment (Table 1). Figure 2 depicts the visual representation of the mean scores on a pre-, post-, and post-adjusted depression test for the experimental and control groups, respectively.

## Discussion

Quigley (2020) assessed the impact of yoga intervention among HIV infected individuals including transgender people. Assessments were used on physical function, cognitive function, quality of life and mental health among yoga groups and controls. Twenty two PLWH aged ≥35 years were recruited. There were no between- or

Table 1: Analysis of co-variance (ANCOVA) of the means of experimental groups and the control group on anxiety-(scores)

| Test | Group A | Group B | Group C | Source of Variation | Degrees of Freedom | Sum of Squares | Mean Sum of Squares | F-Ratio |
|---|---|---|---|---|---|---|---|---|
| **Pre** | 10.00 | 10.40 | 10.13 | Between | 2 | 1.24 | 0.62 | **0.74** |
| | | | | With in | 42 | 35.33 | 0.84 | |
| **Post** | 6.47 | 8.07 | 10.60 | Between | 2 | 130.31 | 65.16 | **75.46*** |
| | | | | With in | 42 | 36.27 | 0.86 | |
| **Adjusted Post** | 6.53 | 7.99 | 10.62 | Between | 2 | 128.53 | 64.26 | **82.56*** |
| | | | | With in | 41 | 31.91 | 0.78 | |

* Significant at 0.05 level of confidence.Table F ratio at 0.05 level of confidence for df 2 and 42 = 3.22 and 2, 41 = 3.23.

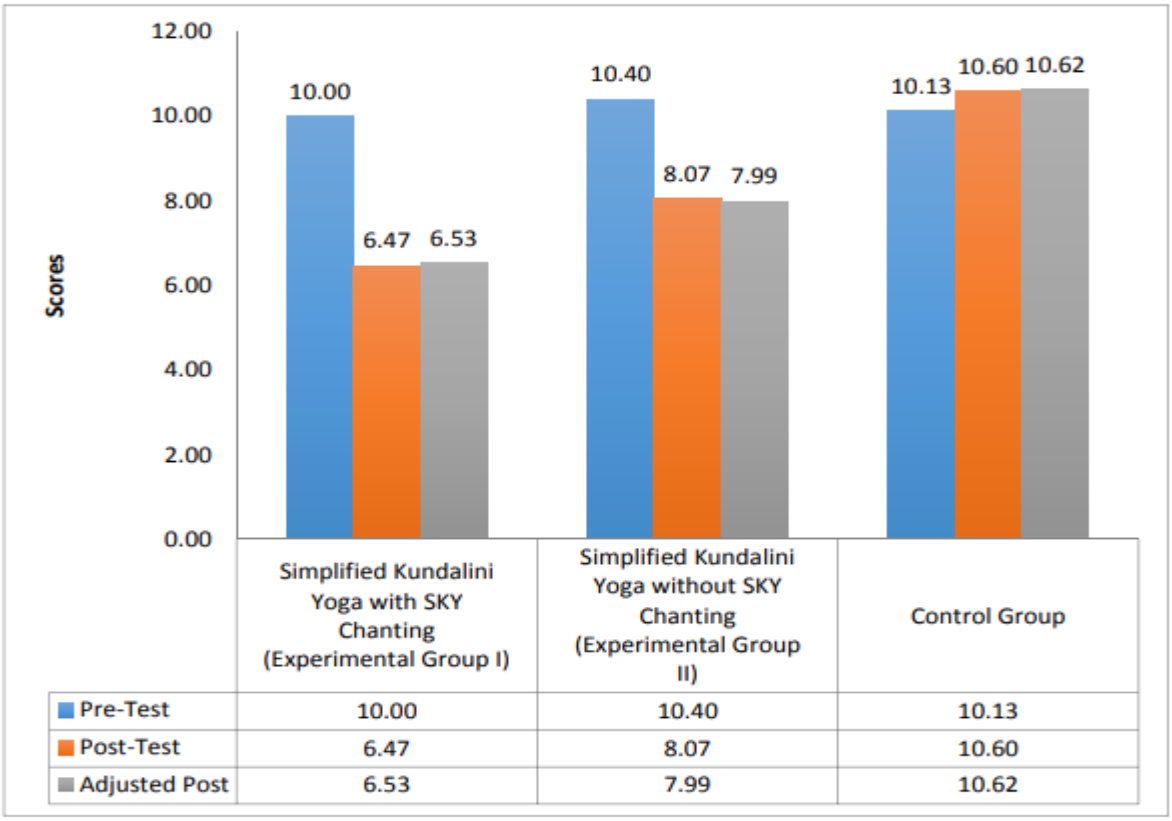


Fig. 1: Adjusted mean post test of the experimental groups & control group for anxiety (scores).

Table 2: Analysis of co-variance (ANCOVA) of the means of experimental groups and the control group on depression (scores)

| Test | Group A | Group B | Group C | Source of Variation | Degrees of Freedom | Sum of Squares | Mean Sum of Squares | F-Ratio |
|---|---|---|---|---|---|---|---|---|
| **Pre** | 9.80 | 10.00 | 9.40 | Between | 2 | 2.80 | 1.40 | **1.18** |
| | | | | With in | 42 | 50.00 | 1.19 | |
| **Post** | 6.93 | 7.73 | 10.27 | Between | 2 | 90.81 | 45.42 | **71.18*** |
| | | | | With in | 42 | 26.80 | 0.64 | |
| **Adjusted Post** | 6.92 | 7.69 | 10.31 | Between | 2 | 91.14 | 45.57 | **72.52*** |
| | | | | With in | 41 | 25.76 | 0.63 | |

* Significant at 0.05 level of confidence. Table F ratio at 0.05 level of confidence for df 2 and 42 = 3.22 and 2, 41 = 3.23.

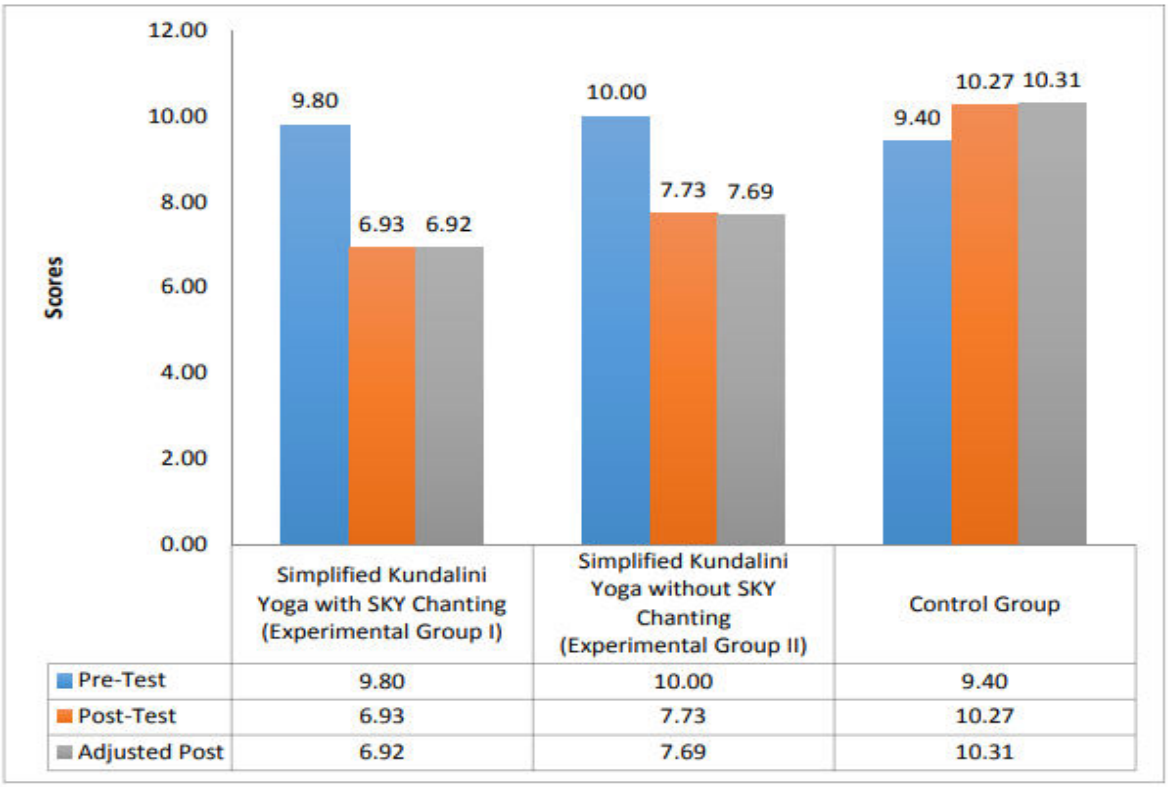


Fig. 2: Adjusted mean post test of the experimental groups and control group for depression (Scores).

within-group differences on physical function and cognitive function. Yoga group showed improvement in cognition, health related quality of life, depression and health transition. This pilot study proved that yoga would be beneficial for people living with HIV.

Nemoto *et al*. (2005) described a community tailored intervention program among transgender women for the promotion of health in San Francisco. The program includes transgender-sensitive education particularly focusing on HIV risk reduction, drug use prevention, improving coping skills, general health promotion, relaxation and meditation. Many workshops, treatment programs and other services have been conducted by transgender health educators in the community. The findings indicate that community-tailored intervention may be used as an effective way in transgender women in reducing depression, substance abuse and sexual risk behaviours.

It was hypothesized that effect of Simplified Kundalini Yoga with and without SKY chanting considerably make significant differences on anxiety and depression among transgender women. The results presented in Tables 1 and 2 are proved that Simplified Kundalini Yoga with and without SKY chanting decreased anxiety and depression among transgender women. Thus, the hypothesis was accepted at 0.05 level of confidence. The results substantiated that there was significant difference among the adjusted means due to twelve weeks of Simplified Kundalini Yoga with and without SKY chanting on anxiety and depression.

## Conclusion

It was concluded that anxiety and depression were significantly decreased due to the influence of Simplified Kundalini Yoga with and without SKY chanting among transgender women and thus it can be used an holistic health intervention in reducing anxiety and depression among transgender women.


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