



# CURING AND ELIMINATING DEPRESSION WITH BOLLYBHANGRA BEATS: A PROSPECTIVE, RANDOMIZED, PRE-POST SINGLE GROUP DESIGN

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## Abstract

### Background

Conventional medical therapies and psychotherapies for major depression are associated with limited adherence to care and relatively low remission rates. Dance fitness may offer an alternative treatment option, but research studies are limited in this regard. This randomized pre-post dependent trial examined a 10-week Bollybhangra dance fitness program as a mono-therapy for No to minimal symptoms of depression.

### Methods

Investigators selected 23 female adults in Kolkata, who were leading a sedentary lifestyle and were engaged in less or no physical activity and also complained of suffering from some or the other mental complications in their day to day lives. These subjects were put into a dance fitness program namely Bollybhangra since most females who are living in Kolkata are mostly lovers of Bollywood dance forms. Beck Depression Inventory (BDI) was implemented on the subjects. Participants were middle aged females, with mean age 33.5 years, and mean BDI score pre treatment was 9.6 (SD = 6.52). Twenty three participants were randomized to 45-minute Bollybhangra groups thrice weekly for 10 weeks. Licensed dance fitness instructors delivered the interventions at a Fitness Studio.

## Results

In dependant 't' test pre-post design analysis, Bollybhangra participants exhibited significantly greater 10-week decline in BDI scores than what it was in the initial pre treatment measurement (BDI score 9.60). In sub-analyses of participants completing final 10-week measures, the participants were more likely to achieve remission, defined per final BDI score  $\leq 6.04$  ( $p < 0.05$ ). Intervention groups differed significantly in 10-week change scores for Depression, the calculated t at degree of freedom 22 was 6.017 which is greater than the tabulated value of t 1.717 at 95% of confidence.

## Conclusion

In adult females with no to mild depression, a 10-week Bollybhangra intervention resulted in statistically significant reductions in depression measures.

## Introduction

Depression is a grave state of mind effecting our perceptions and feelings. The effect of depression appears in the way of slowing down in movements due to energy decline. Day to day works are either neglected or spent more effort and time on. The person wants to be alone and avoid social relations. A decrease is seen in sexual desire and interest. Depression is determined by a lot of symptoms that contain sadness, feelings of worthless, irritability, changes in sleep and desire to eat, not to enjoy from fun activities, and psychomotor retardation<sup>1</sup>. Depression is twice more prevalent in females than males and the risk of a recurrence can be as high as 60–89%. Failure at the school or work, loss of a loved person, loneliness and illness are among the factors that cause depression most. Hopelessness and grief are two basic characteristics of depression. The person is lost in thoughts of useless and incompetence, has crying fits and thinks of suicide. The depression symptoms for the young may be usually seen as stubbornness, pessimism, uneasiness, inadaptability, behavior-attitude, alienation from society, failure in career success, alienation from family, carelessness in clothing, sensitivity to being rejected, inclining to narcotic drugs or smoking. Maag and Forness\* report that the basic problem areas related to depression are the lack of social compatibility and self-control, cognition loss or absence, and learned helplessness. Stark\* has pointed that the death of one of the parents and their divorcing are among the basic life events related to depression and domestic abuse and conflict are the most common factors related to development of depression. Dance fitness movements have been used to help people develop confidence, overcome sadness and different emotions for centuries. Dance movement therapy has been used as a form of art rehabilitation in the Western world since the early 1950s and is also quiet popular in India and neighboring countries.

Annually, nearly 7% of adults in the United States suffer from an episode of major depression. The World Health Organization identifies major depression as the second most disabling medical condition in the United States, accounting for more years lived with disability than heart disease, stroke, or diabetes. Major depression contributes not only to disability, but also to mortality. There are more than 49,000 deaths by suicide annually in the United States, and it is estimated that major depression accounts for 20–35% of these deaths. Major depression also increases the risk of death from other medical conditions such as coronary artery disease and diabetes mellitus.

## Materials and Methods

### Experimental Design was adopted

Dance and fitness therapy subjectively and objectively help the people to overcome mental afflictions which support the medical aims and make the joy and pleasure come into their lives which increase the social bonding and communication providing an escape way for physical tension, anxiety, anger, depression also strengthening and reconstituting the body shape. Bolly Bhangra Dance and fitness therapy are consisted of music, Choreography Bhangra dance, easy exercises and sensorial stimulus and provide drugless treatment for the depression on low rates. Therefore, this study involved pre post research design to evaluate the effect of Bollybhangra training over the depression. A total of 23 sedentary females were randomly selected to participate in this study. Beck Depression Inventory, which was developed by Beck and et al.\* was used for subjects. The female subjects age ranged from 30 to 40 ( $\pm 2$  years) participate in this study after having explained all risks to them before the investigation. They were termed as training group (N=23) pre test post test was applied and the results differed significantly ( $p > 0.05$ ) in the dependent variable. All subjects participated in the Bollybhangra session. Specifically, each session lasted from from 50 mins to 1 hour. A dance training program was applied to the subjects three days a week (Tuesday, Thursday, and Saturday) during 10 weeks. Prior to data collection, all participants signed NOC's consent form. After receiving a detailed explanation of the study's benefits and risks, all subjects signed an informed consent document that was approved by the local ethics committee. None of the subjects reported any medical or orthopedic problems that would compromise his/her participation and performance in the study.

### Procedures

In order to evaluate the effect of Bollybhangra dance training over the depression, the researchers applied a depression scale developed by Beck et al. All of the subjects were informed about the depression scale prior to data collection. Testing was conducted before and after 10 weeks of Bollybhangra dance training. Subjects abstained from physical activity not related to the study during the testing period. Furthermore, during the testing periods and throughout the 10 weeks of dance training subjects were instructed to maintain normal dietary habits. The correlation coefficient of the validity and reliability of the Beck Depression Scale was found by Hisli consecutively 0.73 and 0.81. Also, it was compatible Turkish version and English version of the Beck Depression Scale. In Beck depression scale, it is accepted that the subjects taking score between 0–9 have normal to mild depression, the ones taking score between 10–15 have low to moderate

**Table 4-Training schedule**  
**Bollybhangra dance and fitness training chart**

<b>Days of training</b>	<b>1-3 week</b>	<b>4-6 weeks</b>	<b>7-10weeks</b>
<b>Tuesday</b>	<b>15 mins Warm up Core steps 15 mins Choreography 15mins Practice 10 mins Cool down 5 mins</b>	<b>15 mins warm up Core Bhangra steps 15mins Choreo and practice 20mins 10 mins cool down</b>	<b>15 mins warm up Core Bhangra steps 15mins Choreo and practice 20mins 10 mins cool down</b>
<b>Thursday</b>	<b>10 mins warm up Core Bhangra steps 15mins Choreography 15 mins and practice 10mins 10 mins cool down</b>	<b>15 mins warm up Core Bhangra steps 15mins Choreo and practice 20mins 10 mins cool down</b>	<b>15 mins warm up Core Bhangra steps 15mins Choreo and practice 20mins 10 mins cool down</b>
<b>Saturday</b>	<b>15 mins Warm up Core steps 15 mins Choreography 15mins Practice 10 mins Cool down 5 mins</b>	<b>15 mins warm up Core Bhangra steps 15mins Choreo and practice 20mins 10 mins cool down</b>	<b>15 mins warm up Core Bhangra steps 15mins Choreo and practice 20mins 10 mins cool down</b>

## Results

In dependant 't' test pre-post design analysis, Bollybhangra participants exhibited significantly greater 10-week decline in BDI scores than what it was in the initial pre treatment measurement (BDI score 9.60). In sub-analyses of participants completing final 10-week measures, the participants were more likely to achieve remission, defined per final BDI score  $\leq 6.04$  ( $p < 0.05$ ) which is shown in table 3. Intervention groups differed significantly in 10-week change scores for Depression, the calculated t at degree of freedom 22 was 6.017 which is greater than the tabulated value of t 1.717 at 95% of confidence.



**Paired samples t-test– a statistical test of the difference between a set of paired samples, such as pre-and post-test scores. This is sometimes called the dependent samples t-test.**

**TABLE 1****Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre zumba	9.6087	23	6.52087	1.35970
	Post zumba	6.0435	23	4.33252	.90339

**TABLE 2****Paired Samples Correlations**

		N	Correlation	Sig.
Pair 1	pre zumba & post zumba	23	.942	.000

**TABLE 3****Paired Samples Test**

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pre (DEPRESSION)- Post (DEPRESSION)	3.56522	2.84167	.59253	2.33639	4.79405	6.017	22	.000

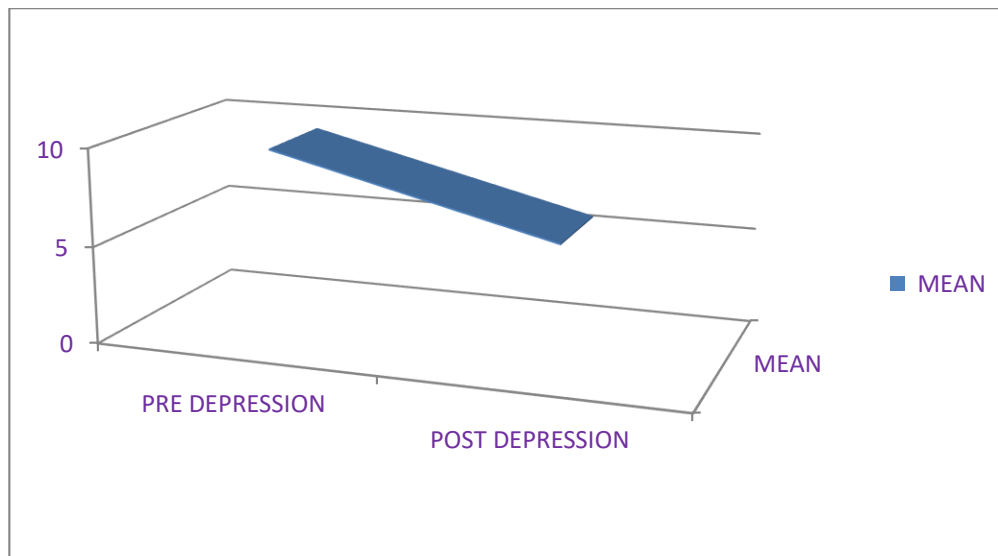


FIG 1

### GRAPHICAL PRESENTATION OF MEAN DEPRESSION PRE AND POST BOLLYBHANGRA SESSION

## DISCUSSION

In this study it was aimed in examining the effect of Bollybhangra dance training over the depression, dance has been found to have positive effects over the depression levels at the end of 10 weeks of Bollybhangra dance training of the subjects participated in the research as the training group ( $p < 0.05$ ) (Table 3). In a research, the adults suffering depression at a low degree were given Bollybhangra dance and movement therapy during 10 weeks and the effect over these people's psychological health and relaxation was examined. In the end, Dance based therapy has been found to have positive effect over the psychological development of the middle aged female suffering depression at a low degree\*. The researches carried out in recent years have shown that Bollybhangra dance therapy help the treatment of physical trauma, cancer, nervous breakdowns, chronic pain, heart disease and post-surgical pain\*. It has been proved that people doing exercises regularly have much better ideational skills and are faced with less depression and anxiety. Leste and Rust\* examined that the effects of dance on anxiety in 114 college students. Subjects participated in modern dance classes during three months and anxiety levels significantly lowered of subjects. Besides the participants in the control groups (a physical education group, a music group, and a neutral mathematics group) did not show similar decreases in anxiety as measured by the Spielberg State-Trait Anxiety Inventory. It has been observed that studies support this study. In many of research it has been reported that dance and fitness have been shown to have positive effects on self-concept, psychological well-being, lower levels of anxiety and internal locus of control\*. Moreover, Benzer et al. recommend that moderate levels of activity and movement are indeed positively as regards with higher levels of perceived wellness. In this study, 10 weeks of dance training has been found to be effective over the depression levels of female subjects ( $p < 0.05$ ). In a study carried out by Kosti et al, with the aim of determining the success of efforts and skills in showing dance figures, they have pointed out that effort skill in showing dance figures and folk dances are effective on success and this prevents anxiety and depression. West et al., in research investigated effects of hatha yoga and African dance on perceived stress, affect. Their studies were participated sixty-nine healthy college. African dance group ( $n=21$ ), Hatha yoga group ( $n=18$ ) and a biology lecture as a control group ( $n=30$ ). Before and after each condition participants completed the Perceived Stres Scale (PSS), the Positive and Negative Affect Schedule, and obtained a saliva sample for cortisol. They found that Both African dance and Hatha yoga reduced perceived stress and negative effect. Cortisol increased in African dance and decreased in Hatha yoga. As a result; these interventions produce similar positive psychological effects, the effects may be very different on physiological stress processes.

Consequently, it has been seen that dance affects the depression levels of middle aged females positively and decreases their depression levels.

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