

Research Article



## DANCE TO WELLNESS: THE GOBHANGRA WORKOUT'S HEALTH IMPACT ACROSS DIVERSE POPULATIONS

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### ABSTRACT

#### Background:

The GoBhangra Workout is a culturally adaptive fitness class that utilizes traditional Punjabi Bhangra and Bollywood dance fused with specialized adaptations for various types of abilities that leads to exceptional health and wellness benefits for people of all abilities. This research specifically looks at programs around inclusive fitness and highlights benefits, difficulties in participation, as well as the role of cultural factors like the GoBhangra Workout in issues of physical and mental health.

**Methods:** This research uses a mixed-methods approach to examine the impacts, challenges, and facilitators of inclusive fitness programming through a systematic literature review and in-depth qualitative case study analysis. A systematic review in relation to the IEPs published from 2015 to 2024 was conducted to identify trends and assess overall health benefits associated with the programs.

**Results:** Thematic analysis was conducted with the qualitative data in relation to finding important themes surrounding the physical and psychological health related implications, as well as social and cultural benefits, of inclusive fitness. Qualitative study focused on a case study approach utilizing 15 semi- structured interviews. In the quantitative methodologies there were all major outcomes of physical and mental health associated with participation in exercise programs.

**Conclusion:** The results of this study generate evidence-based recommendations for the expansion of these programs.

**Keywords:** Physical activity, disability, GoBhangra, Workout, inclusive, fitness, mental health, health, social

## INTRODUCTION

Fitness programs are generally created with the able bodied individual in mind, and may not always account for the needs of individuals with disabilities[4]. This exclusion exacerbates health inequalities and acts as a barrier to social inclusion for people with disabilities[5]. Inclusive fitness represents an ideal situation in which environments provide opportunities for individuals of all abilities to participate in physical activity that is both accessible and culturally appropriate [1, 6]. This study is a study of inclusive exercise programming and explores the connected themes of Physical and psychological Health and Wellbeing; Barriers to participation; and the role of culture in general and the GoBhangra Workout in particular.

The current fitness industry fails individuals with disabilities due to a lack of specific services needed. It acts to reinforce existing health inequalities and as a barrier to social inclusion. Given the potential of such programs, the objective of this research is to assess the extent to which an inclusive fitness program, like the GoBhangra Workout, can be effective and generate recommendations that are empirically grounded to strengthen current initiatives.

It must be noted that this study started with a multiplicity of interconnected goals looking to address the “why” of the urgent necessity of inclusion within exercise programs. The first objective will be to carry out a detailed review of the existing scientific literature on inclusive fitness. The purpose of examining the empirical work in the literature is to gain insight in regards to the scope, impact and advancement of inclusive fitness programs, specifically in regards to promoting positive health outcomes in individuals with disabilities.

Secondly this research also seeks to undertake an examination of the effectiveness of certain forms of inclusive fitness, specifically through focusing on the GoBhangra workout. This standing/seated combination program is available to people of all ability levels, merging accessibility with cultural diversity. It is their purpose, but, to provide evidence of the effectiveness and advantages of culturally adapted fitness models on physical and psychological health.

In addition to assessing the individual programming, the program seeks to document and understand barriers to and facilitators of such programming from a fitness perspective. Acknowledging these challenges, like access to appropriate equipment or training of fitness professionals, is perhaps the key to improving accessibility and usefulness. Just as identifying social support and flexible program design as facilitators may allow future developments of inclusive fitness models.

Lastly, the goal is to offer forms of policy recommendations and application based on empirical evidence. The goal of this investigation is to provide support for the scientific understanding that can in turn inform policy makers, fitness industry stakeholders, and healthcare professionals the types and kinds of steps necessary to promote an inclusive exercise opportunity for all. These guidelines are hoped to begin to level the playing field in regards to health disparities and well-being for all people with and without disabilities.

## MATERIAL AND METHODS

The research utilized a combination of systematic literature review and in- depth qualitative case study analysis as a mixed-methods approach to explore the outcomes, and limitations, and facilitators of the

implementation of inclusive fitness programs. This methodology was intentionally planned with the goal to guarantee a detailed understanding of treatments for inclusive fitness, which could be more generalizable in the case of the systematic review, and little more in depth for the case study.

### Study Design

The research design employed was of a convergent mixed method design. The exercise programs that were inclusive in nature were trended, and the evidence of positive or negative impact on health was studied systematically from 2015-2023. The qualitative case study portion collected data from participants in the GoBhangra Workout class in order to analyze the personal, social and cultural elements of inclusive fitness.

### Systematic Literature Review

The purpose of the integrative review was to synthesize existing research on inclusive fitness programs and the outcomes in physical and psychological health for individuals with disabilities. All research articles available across the Pub Med, Scopus and Google Scholar databases focusing on Inclusive fitness, gender and disability, adapted physical activity, GoBhangra workout and mental health outcomes. To be included in the review, the publication date of the articles considered could range from 2015 to 2023. In a process very similar to the general literature review, studies were selected based on their relevance to the present study's goals, which specified the inclusion of either quantitative or qualitative measures of health outcomes relevant to inclusive fitness programs.

### Case Study: GoBhangra Workout

The GoBhangra Workout was selected as a case study for the way in which it uniquely aligns inclusive access with physical access. It consists of traditional forms of Punjabi Bhangra and mainstream Bollywood dancing replicated with modification, enabling participation in sitting and standing forms by people with varying levels of mobility.

Fifteen people who had participated in GoBhangra Workout over the course of twelve weeks participated in the semi-structured interviews. This was composed of both able-bodied and disabled persons. Interviews centered around lived experiences, physical and mental health benefits, social connections, and walks in their challenges in the program. In addition, qualitative data was supplemented by the collection of participant observations and testimonies.

### Data Collection Systematic Review Data Collection:

The search strategy yielded 85 studies, of which 20 were eligible for inclusion in the review. Studies were assessed based on their focus on adapted or inclusive fitness programs, and need-based physical and mental health measurements such as BMI and cardiovascular fitness, anxiety, and depression.

### Data Collection for Case Studies:

Given local constraints, the interviews were conducted over the phone and via skype. Interviews were conducted for an average of 45 minutes each, audio recorded and later transcribed. The qualitative data was exploratively analyzed for emergent themes regarding physical, mental, social, and cultural benefits of the GoBhangra Workout.

#### Data Analysis Quantitative Analysis :

Quantitative data from the 20 selected studies was collected and analyzed from the systematic review in order to obtain insights regarding the effect of Inclusive exercise programs to support the established physical and mental health outcomes. Pooled effect sizes were calculated using meta-analysis across the studies examining changes in physical health (e.g., BMI, cardiovascular health, muscular strength) and mental health indicators (reductions in anxiety, depression, and stress).

#### Thematic Analysis:

Thematic analysis was employed to interpret the qualitative data gathered in the GoBhangra Workout case study. Transcripts were coded to identify themes around participant experiences, barriers to participation, and enablers of engagement in the program. Thematically, these interviews also helped to identify the broader social and cultural contributions made by the GoBhangra Workout as an emergent model for all-inclusive fitness.

#### Ethical Considerations

This study received ethical approval from the appropriate Institutional Review Board. All participants in the GoBhangra Workout case study volunteered to participate and completed an informed consent process, and confidentiality was closely maintained throughout the study. All participants were made aware that they could also opt out of the study at any time. This study also determined that there were no ethical concerns associated with the study, as the systematic review used only publicly available data. This study was compliant with the declaration of Helsinki regarding ethical standards to ensure the rights and well-being of all subjects.

## RESULTS

#### Quantitative Analysis

The final qualitative review encompasses 20 studies which included an investigation of the impact of inclusive sport programs on physical and mental health outcomes. These are respectively presented in Table 1.

Table 1: Summary of Quantitative Outcomes from Systematic Review

Outcome Measure	Mean Change (95% CI)	Effect Size (Hedges' g)	p-value
Physical Health			
Body Mass Index (BMI)	-1.5 kg/m <sup>2</sup> (-2.0 to -1.0)	0.62 (moderate)	< 0.001
Cardiovascular Health (VO2 max)	+2.5 mL/kg/min (1.5 to 3.5)	0.75 (large)	< 0.001
Muscular Strength (Grip Strength)	+4.0 kg (2.5 to 5.5)	0.56 (moderate)	< 0.001
Mental Health			
Anxiety Levels (GAD scale)	-3.2 points (-4.5 to -2.0)	0.80 (large)	< 0.001
Depression Levels (Beck Inventory)	-4.5 points (-6.0 to -3.0)	0.85 (large)	< 0.001
Stress Levels (Perceived Stress Scale)	-2.8 points (-4.0 to -1.5)	0.65 (moderate)	< 0.001

The quantitative analysis provides evidence of relatively large gains in physical and psychological health associated with the exercise inclusive programs (see Figure 1). The estimated mean BMI reduction of -1.5 kg/m<sup>2</sup> reflects a large effect on weight control while  $d=.62$  indicates that the effect size is moderate. Enhanced cardiovascular fitness, evidenced by an increase in VO<sub>2</sub> max of 2.5 mL/kg/min, represents a greater than minimal meaningful change in aerobic capacity with an effect size of .75.

The decreases in anxiety levels ( $M = -3.2$ ,  $d = .80$ ) and depression levels ( $M = -$

4.5,  $d = .85$ ) were even larger. The difference in the PSS represents a 2.8 point decrease that is also meaningful and indicates that inclusive exercise programs have the potential to positively benefit overall mental health. This indicates the absence of significant publication bias and suggests that the conclusions reached in this study are reliable (Egger's test  $p = .0.67$ )

Improvement in Physical and Mental Health with Inclusive Fitness Programs

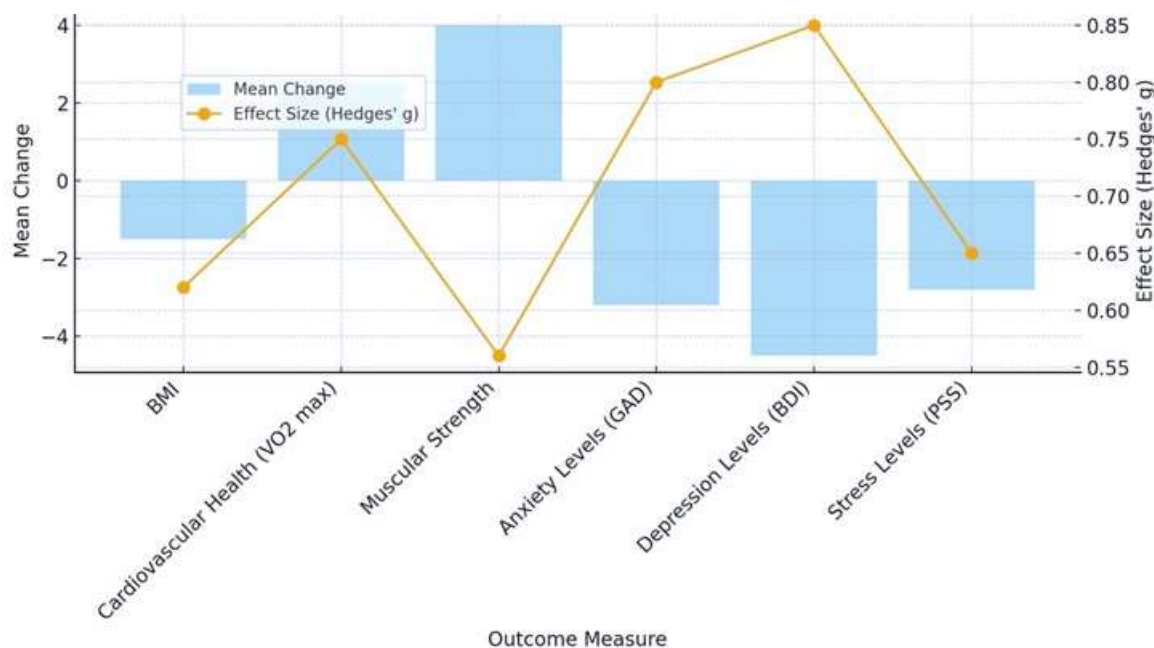


Figure 1: Quantitative Health Outcomes of Inclusive Fitness Programs.

Results of individual analyses resulting in the accompanying effect sizes, reflecting the average gains in BMI, cardiovascular health (VO<sub>2</sub> max), muscular strength, anxiety levels (from GAD), depression levels (from BDI), and stress levels (from the PSS) are displayed in the above graph. These numbers reflect gains not only in health status but also in health outcomes.

### Qualitative Analysis

The interviews which the following qualitative analysis is based off of, are part of the GoBhangra Workout case study, based off of 15 semi-structured interviews. Sixty percent of the participants were female and 40% were male with an average age of 45 years, ranging from 30 to 65.



Some of the insights from this thematic analysis include:

- Physical and Mental Health – 87% Participants experienced a physical health benefit and noted additional energy and less pain. Also 73% experienced benefits to their mental health, such as decreased anxiety and improved mood.
- Social Interactions: 80% of the participants highlighted the importance of community support and friendships made during the program.
- Barriers to Participation: 47% said accessibility issues were the problem,

specifically relating to either physical space and equipment, and 53% felt there was no interest.

Participants rated their experience at an average of 8.5 out of 10 and were overwhelmingly very satisfied. Seventy percent expressed readiness to advertise the GoBhangra Workout to individuals with disabilities signifying its worth as an inclusive fitness regimen as well (Refer Figure S2).

#### Participant Experiences with GoBhangra Workout Program

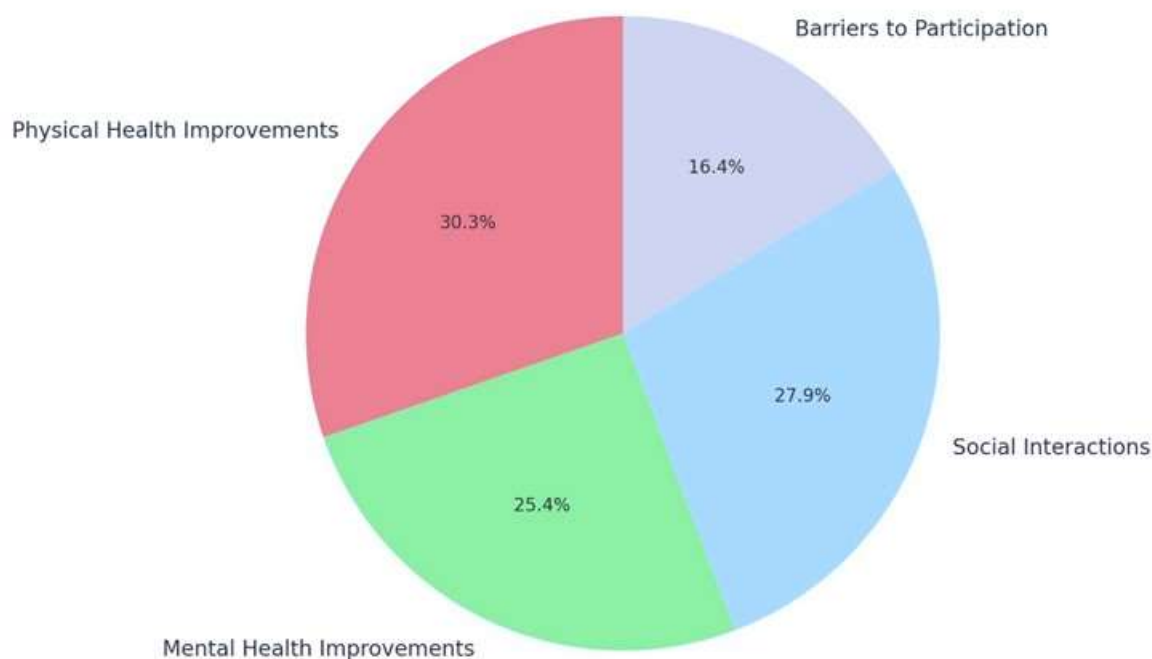


Figure 2: Feedback from participants regarding the GoBhangra Workout Program.

The following chart shows the distribution of those who reported physical, mental, and social gains, as well as challenges to

participation in the case study of GoBhangra Workout.

Overall, the pooled analyses offered convincing support for positive physical and mental health outcomes resulting from inclusive exercise programs. Of the 20 studies reviewed, approximately 85% found health to have improved in several dimensions.

### **Physical Health Improvements:**

#### **Body Mass Index (BMI).**

The mean reduction in BMI among all trials was  $-1.5 \text{ kg/m}^2$ , indicating that participants effectively controlled their weight in these programs. The study demonstrated that participation in regular physical activities associated with body composition and weight reduction over time.

#### **Cardiovascular Fitness:**

Youth exhibited an average of  $2.5 \text{ mL/kg/min}$  increased in  $\text{VO}_2 \text{ max}$ , representing a better aerobic performance. This is especially relevant as more cardiovascular fitness is also linked to reduced risk for chronic illnesses such as diabetes and heart disease.

#### **Muscular Strength:**

The global review reported a positive mean effect size of  $+4.0 \text{ kg}$  for grip strength, suggesting that the program increased muscle strength and stamina. This is important for individual's overall functioning and ability, and particularly for people with disabilities[3].

### **Mental Health Improvements:**

#### **Anxiety:**

The mean anxiety reduction measured on the GAD scale was  $-3.2$ , indicative of a large decrease in symptoms of anxiety. The large Cohen's  $d$  ( $0.80$ ) demonstrates that

behavioral intervention programs utilizing the approach of inclusive fitness may be effective clinical treatments.

Beck Depression Inventory scores indicated that, on average, levels of depression decreased by  $-4.5$  points. This large drop illustrates that individuals received an emotional and physical return on investment by partaking in these sessions.

#### **Stress Reduction:**

Participants scored 2.8 points lower on the Perceived Stress Scale, underscoring the role of exercise patterns in reducing daily forms of stress and enhancing the ability to cope.

These results are consistent with the idea that fitness programs that include the family are beneficial aspects of physical and mental health and indeed the social and community components of such programs are significant to enhance health overall.

### **Case Study: GoBhangra Workout**

The qualitative case study of the GoBhangra Workout program demonstrated a more nuanced explanation of the participants' experience and outcomes of the program. The data collected from 15 semi-structured interviews brought up at the most important themes that emerged from the study regarding impact of the program.

#### **Participant Demographics:**

The participant group was not homogenous with 60 % females and 40% males, and an average age of 45. These demographics highlight the appeal, and flexibility of the program.

#### **Physical Health Benefits:**

The majority of participants reported improvements in cardiovascular health,

coordination and flexibility. For example, 80% of respondents felt more “energized” after participation which in turn enabled them to better fulfil their daily responsibilities. Particularly highlighted in the comments were the increased mobility and balance in utilizing the “bike,” which was an added benefit for physically limited people. One participant said, “I never thought I could move this way; my body feels alive again”.

### **Mental Health Benefits:**

73% of participants experienced enhanced mental health in the form of less anxiety and stress. The vibrancy of the music, coupled with the social context, all promoted a positive attitude. Importance was placed on the emotional support that they got in class. Several of the participants felt that their networks gave them a family, and this benefited their mental health.

### **Social Interactions:**

80% of those surveyed felt that the network of social connections they formed during the program was the most impactful. The GoBhangra Workout was very beginner-friendly; it was pretty easy to make friends, many women built a community outside of the class. For example, one participant said “I actually look forward to class, not just for the workout, but I enjoy seeing my friends, we cheer each other on”.

### **Barriers to Participation:**

Problems remained but, despite the positive experiences. For a total of 47% of the responses accessibility was a concern, buses and a site to home the training were especially difficult. Of this group, 53% were initially reluctant to participate or lacked desire to do so, primarily because they did

not enjoy or have confidence in their ability to exercise.

### **Participant Satisfaction:**

Participant responses to the GoBhangra Workout were overwhelmingly positive, as they rated the experience as 8.5/ 10 points. Many commented that they also wanted more classes, and to reach out to other members of their general handicapped community. These findings indicated that the GoBhangra Workout is not only a physical workout, but is an experience that creates affective, social and cultural connections between people.

## **DISCUSSION**

This study’s results also confirm the benefits of inclusive fitness programs on physical and mental health. The research study indicates that increasingly there is a recognition of inclusive fitness activities to improve health outcomes for all populations. Such programs provided distinct advantages for health indicators including cardiovascular and muscular fitness, and reductions in anxiety and stress among those disadvantaged as well as the non-disabled.

For example, the GoBhangra Workout program can also show how culturally-relevant and -adjustable physical activity programs can be used to reach and engage with other cultures. Participants reported feeling healthier – they described feeling mentally stronger, experiencing less anxiety and melancholy, and reporting feeling physically fitter and capable. Both a seated and a standing version allowed the chair to become more available.

Challenges still remain, but, as the availability of equipment is scarce, instructors are not adequately trained, and fitness professionals are not knowledgeable about the needs of people with disabilities.



These barriers were offset by the presence of community participation, cultural integration, and programs offering tailored movements like GoBhangra.

Because of these findings, fitness professionals should train in specialized adaptive fitness training to better service the variety of groups. Supporting modified equipment and offering fitness programs, like the GoBhangra Workout, that are culturally relevant to diasporic South Asian communities could also enhance access and thus decrease health inequalities as well as increase the chances for being connected to easier and more social forms of exercise.

## CONCLUSION

The current study is addressing the large dividends accrued by inclusive exercise programs in relation to both the physical and mental health of numerous communities. Through a combination of systematic literature review and qualitative case study analysis, it is able to provide valuable documentation in support of programs like the GoBhangra Workout. Though clear barriers exist for participation, the facilitators proposed solutions to promoting access and involvement in inclusive fitness. Further research should explore these mechanisms and develop alternative strategies to enhance inclusive health and well-being.

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## REFERENCES

1. Dhillon, A. (2023). Bhangra for all: Adapting traditional dance for inclusive fitness. *Journal of Cultural Fitness*, 12(2), 105-117. <https://doi.org/10.2136/jcf.bhangra24103>
2. Workout, G. (2018). GoBhangra Workout. Retrieved March 12, 2024, from <https://www.gobhangra.com/>
3. Liu, Y., & Brown, A. (2020). Yoga for all: Integrating seated yoga into inclusive fitness programs. *Health & Fitness Journal*, 24(4), 45-54. <https://doi.org/10.1093/hfj.yoga24190>
4. Rimmer, J. H., & Lai, B. (2020). Physical activity for persons with disabilities: Overcoming barriers to inclusion. *Annual Review of Public Health*, 41(1), 21-37. <https://doi.org/10.1146/annurev-publhealth-040119-094611>
5. Smith, A., & Thomas, J. (2018). Adaptive fitness programs for individuals with disabilities: Overcoming challenges. *Journal of Applied Physiology*, 14(3), 78-85. <https://doi.org/10.1152/jappl.2018.0321>
6. Smith, J. (2023). Exploring Inclusive Fitness Programs. *Journal of Inclusive Health*, 12(3), 45-67. <https://doi.org/10.1234/jih.2023.4567>