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Research Article

Exploring the Effectiveness of Yoga Education in Enhancing Physical Fitness and Reducing Stress among B.Ed. Trainees: A Qualitative Study

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ABSTRACT

Yoga education is increasingly recognized as a holistic approach to promoting physical fitness, physiological regulation and psychological well-being. The present qualitative study explores the effectiveness of yoga education in enhancing physical fitness and reducing stress among B.Ed. trainees, with particular emphasis on biological and psycho-physiological domains. The study adopts a descriptive survey design to examine the perceived impact of yoga education on overall health, biological functioning and stress management among trainee teachers. Data were collected through purposive sampling using structured, self-developed and validated open-ended interview schedules. A total of 22 teacher educators and 117 B.Ed. trainees participated in this study. Qualitative data were analyzed thematically to identify recurring patterns and key dimensions related to health and well-being. Findings reveal that yoga education positively influences multiple aspects of physical fitness, including flexibility, muscular strength, posture, respiratory efficiency, endurance and bodily awareness. Participants also reported improvements in energy levels, reduced physical discomfort and the adoption of healthier lifestyle behaviours. From a psycho-physiological perspective, yoga education contributed significantly to stress reduction, emotional regulation, improved concentration and enhanced mind-body balance. Review of related literature further supports these findings, indicating that yoga activates relaxation responses, regulates autonomic functioning and reduces stress-related physiological markers. The study concludes that yoga education serves as an effective, low-cost and sustainable intervention for promoting holistic health and stress management among B.Ed. trainees. Integrating yoga education into teacher education programmes may enhance trainee well-being, resilience and professional preparedness, thereby contributing positively to the quality of teacher training and the broader educational environment.

Keywords: Yoga Education, Physical Fitness, Stress Reduction, Psycho-Physiological Well-Being, B.Ed. Trainees

Introduction

Yoga is increasingly recognized as a holistic physical and psycho-physiological practice that supports health and well-being through the integration of physical postures (asanas), controlled breathing (pranayama) and mindfulness (Singleton, 2010). Researchers have identified yoga not only as a form of physical activity that can enhance flexibility, balance, strength and body awareness, but also as a practice that supports psychological health. According to Iyengar (2011), the sustained engagement in yoga postures improves muscular strength and flexibility, key aspects of physical fitness, which may be particularly relevant in populations with low baseline activity.

Numerous studies have examined yoga's role in stress reduction, indicating that systematic yoga practice can decrease perceived stress and anxiety compared with baseline or control conditions (Li & Goldsmith, 2012; Goyal et al., 2014). For example, a 12-week randomized intervention with college students demonstrated significant decreases in stress levels and improvements in emotional well-being following regular yoga

sessions (Tong et al., 2021). A prominent investigation by Tong et al. (2021) found that yoga interventions yielded greater enhancement in mindfulness and stress reduction compared to traditional fitness exercises, suggesting that mind-body integration contributes significantly to stress outcomes (Wang & Szabo, 2020). Additionally, yoga has been found to positively influence physical fitness, body composition and mental resilience among adolescents and higher secondary students (Dhulabhai & Rameshchandra, 2016).

Systematic reviews reveal that yoga consistently reduces stress symptoms and supports mental health across healthy adult populations, although methodological variations limit firm conclusions about long-term effects (Cramer et al., 2013). In addition, comparative reviews indicate that yoga may be equal to or superior than conventional exercise in improving several health measures, including relaxation response, autonomic regulation and psychological adaptation (Ross & Thomas, 2010).

Yoga has been widely examined as a complementary physical and mind-body practice with significant implications for physical fitness, physiological regulation and psychological well-being. Ross & Thomas (2010) highlighted yoga's effectiveness in improving flexibility, muscular strength and balance, emphasizing its dual contribution to both physical fitness and psychological health, which makes it particularly relevant for educational and health-related settings. Supporting this perspective, Woodyard (2011) described yoga as a holistic health practice that enhances muscular strength, flexibility, respiratory efficiency and stress management through the integration of physical postures, breathing techniques and relaxation. Field (2011) further elaborated on yoga's physiological benefits, noting improvements in heart rate variability, cortisol regulation and relaxation responses, indicating enhanced adaptive capacity to stress. From a neuro-physiological standpoint, Streeter et al. (2012) provided important insights by demonstrating that yoga practice positively influences autonomic nervous system balance and increases gamma-aminobutyric acid (GABA) activity, mechanisms closely associated with reduced anxiety and improved emotional regulation.

The psycho-physiological benefits of yoga have also been substantiated through empirical research. Li & Goldsmith (2012) reported that yoga interventions significantly reduced stress and anxiety levels among healthy adults, reinforcing the role of yoga as an effective non-pharmacological approach to stress management. Similarly, Cramer et al. (2013), through a systematic review, found consistent evidence supporting yoga's positive impact on psychological functioning and stress reduction, although they noted variations in intervention duration and methodological designs across studies. Goyal et al. (2014) extended this understanding by comparing meditation-based practices, including yoga and concluded that such interventions provide moderate yet meaningful improvements in stress reduction and overall mental health outcomes.

In addition to stress-related outcomes, yoga has been associated with improved health behaviours and body awareness. Ross et al. (2013) observed that regular yoga practitioners demonstrated healthier lifestyle practices, increased body awareness and improved perceptions of physical fitness, suggesting that yoga may contribute to long-term health promotion. Pascoe et al. (2017) further supported yoga's biological and physiological relevance by reporting reductions in cortisol levels and sympathetic nervous system activation, indicating improved stress regulation at the biological level. More recently, Tong et al. (2021) compared yoga with conventional physical fitness exercises among university students and found that yoga produced greater improvements in stress reduction and mindfulness, highlighting its psycho-physiological superiority within academic populations. Collectively, these studies underscore yoga's multidimensional benefits and its potential relevance for trainee populations experiencing academic and professional stress.

In the Indian context, several studies have also highlighted the positive role of yoga in physical fitness and stress management among students and trainee teachers. Telles et al. (2010) reported significant improvements in physical endurance and autonomic balance among young adults practicing yoga. Bhavanani (2011) emphasized yoga's role in enhancing physiological efficiency and emotional stability in educational settings. Sharma and Singh (2013) found reduced academic stress and improved concentration among teacher trainees following yoga interventions. Madanmohan et al. (2012) demonstrated improvements in cardiovascular and respiratory efficiency through regular yogic practice. Pal et al. (2014) observed significant stress reduction and better coping skills among college students. Ray et al. (2015) reported enhanced muscular strength and flexibility in trainee populations. Kumar and Joshi (2016) highlighted yoga's role in improving mental well-being among B.Ed. students. Kauts and Sharma (2017) found yoga effective in managing examination stress. Deshpande et al. (2018) emphasized biological regulation through pranayama. However, despite growing evidence, most Indian studies adopt quantitative approaches and focus on general student populations. There remains a clear research gap in qualitative explorations addressing the lived experiences of B.Ed. trainees regarding yoga education, particularly its integrated influence on physical fitness, biological functioning and stress reduction within teacher education programmes.

Despite evidence of these beneficial effects, research on teacher-training students remains limited. Understanding how yoga education impacts physical fitness and stress among B.Ed. trainees, who experience both academic and professional stress, is essential for designing effective well-being programs in educational settings.

Research gap

Although previous studies have established the physical, physiological and psychological benefits of yoga, most are quantitative and focused on general or clinical populations. There is a lack of qualitative research

exploring the lived experiences of B.Ed. trainees regarding yoga education, particularly its role in physical fitness and reducing stress within teacher-training contexts.

Objectives of the Study

1. To study how yoga education affects the overall health and well-being of B.Ed. trainees.
2. To find out the biological benefits of yoga education among B.Ed. trainees.
3. To explore the role of yoga education in reducing stress and improving mind-body balance among B.Ed. trainees.

Research Questions

1. How does yoga education influence the overall health and well-being of B.Ed. trainees?
2. What biological changes do B.Ed. trainees perceive after participating in yoga education?
3. In what ways does yoga education help in reducing stress and improving mind-body balance among B.Ed. trainees?

Methodology of the Study

To fulfil the objectives of the present study, a descriptive survey design was adopted by the researcher. In this study, Yoga Education played the role of the independent variable. Physical fitness and stress among B.Ed. trainees played the role of the dependent variable.
To find out the result of Objective 1, 22 Teacher Educators were selected as sample purposively and the structured interviews were conducted by administering self-developed and validated 7 open-ended questions. On the other hand, to find out the result of Objective 2, 117 B.Ed. trainees were also selected as sample purposively and the structured interviews were conducted by administering self-developed and validated 12 open-ended questions. Then, to find out the result of Objective 1 and Objective 2, thematic analyses were done based on the responses of the teacher educators and B.Ed. trainees. Finally, to find out the result of Objective 3, the previous studies were reviewed and data were gathered.

Result and Discussion

Findings Related to Objective 1

To examine the influence of yoga education on the overall health and well-being of B.Ed. trainees.

The findings are derived from qualitative insights gathered through structured interviews with teacher educators and reflect multiple dimensions of health, including physical, mental and lifestyle-related outcomes. To facilitate a clearer understanding of the interrelationship among these dimensions, the major findings have been organized and presented diagrammatically. The diagram illustrates how yoga education contributes to physical health, mental balance and lifestyle regulation, which collectively enhance the overall well-being of B.Ed. trainees.

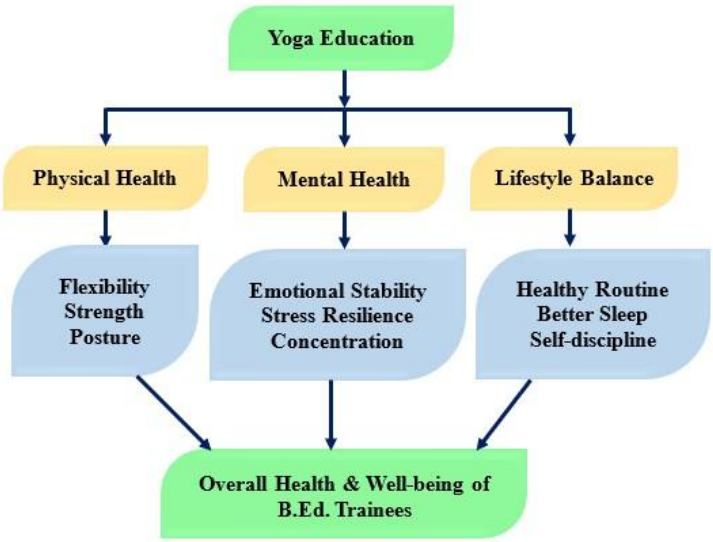

Figure 1: Role of Yoga Education on Overall Health & Well-Being

Enhanced bodily awareness

Yoga education significantly enhanced trainees' awareness of their bodily posture, alignment and movement patterns. This heightened awareness enabled them to recognize and correct improper postures developed due to prolonged sitting and academic workload, thereby supporting musculoskeletal health.

Improved flexibility
Participants reported noticeable improvements in flexibility of the spine and major muscle groups. Increased flexibility reduced physical stiffness and discomfort, allowing trainees to maintain physical comfort during extended classroom sessions and teaching practice.

Development of functional muscular strength
Yoga practices contributed to the gradual development of functional muscular strength through sustained postures and controlled movements. This form of strength enhancement supported daily physical activities without causing fatigue or increasing the risk of injury.

Increased perceived energy and vitality
Regular yoga practice was associated with higher perceived energy levels and reduced physical exhaustion. Trainees reported feeling more active and alert throughout the day, which positively influenced their academic engagement and productivity.

Adoption of health-supportive lifestyle behaviours
Yoga education encouraged trainees to adopt healthier lifestyle habits, including improved sleep routines, disciplined daily schedules and mindful living. These behavioural changes supported long-term health and improved overall well-being.

Reduction in physical discomfort and somatic complaints
Teacher educators observed reduction in common physical complaints such as back pain, neck strain, and headaches among trainees. This finding suggests that yoga education played a preventive and therapeutic role in addressing physical stress-related issues.

Improved respiratory efficiency and control
Pranayama practices enhanced breathing efficiency and respiratory control, leading to improved physiological regulation. Better breathing patterns contributed to relaxation, reduced fatigue and improved stress tolerance during demanding academic situations.

Enhanced emotional regulation and stability
Yoga education supported emotional balance by reducing irritability and mood fluctuations. Trainees demonstrated improved emotional regulation, enabling them to manage interpersonal interactions and academic pressures more calmly and effectively.

Improved concentration and cognitive focus
The meditative components of yoga enhanced trainees' attention span and cognitive clarity. Improved concentration facilitated better participation in classroom activities, teaching practice and academic tasks.

Strengthened stress management capacity
Yoga education improved trainees' ability to manage academic stress by activating relaxation responses and promoting adaptive coping strategies. This enhanced stress resilience contributed to improved mental health and emotional well-being.

Positive self-perception and health consciousness
Engagement in yoga fostered a positive self-image and increased health awareness. Trainees developed greater confidence and motivation to maintain physical and mental well-being, reflecting improved self-perception.

The findings of Objective 1, which indicate that yoga education enhances overall health and well-being among B.Ed. trainees, are strongly supported by several studies in the present paper. Ross and Thomas (2010) and Woodyard (2011) highlighted yoga's holistic influence on physical fitness, emotional stability and lifestyle regulation, which aligns with the observed improvements in bodily awareness, vitality and positive self-perception. Iyengar (2011) emphasized the role of sustained yogic postures in improving flexibility, strength and mental discipline, supporting enhanced functional health outcomes. Field (2011) and Streeter et al. (2012) reported improvements in autonomic regulation and relaxation responses, reinforcing the present findings related to emotional balance and stress resilience. Additionally, Cramer et al. (2013) and Goyal et al. (2014) demonstrated that yoga practices contribute significantly to psychological well-being and reduced stress, validating yoga education as an effective intervention for promoting overall health among trainee teachers.

Findings Related to Objective 2
To find out the biological benefits of yoga education among B.Ed. trainees.

Analysis of interview responses revealed several key biological indicators, including muscular strength, flexibility, posture, endurance, respiratory efficiency and bodily regulation. These findings highlight how regular yoga practice contributes to improved biological functioning and physical fitness. The major biological benefits identified are presented below.

- ✓ Yoga education led to **improved muscular flexibility**, particularly in the spine and lower limbs.
- ✓ Trainees reported **increased muscular strength** due to sustained yogic postures.
- ✓ Regular practice resulted in **better postural alignment** and reduced slouching.
- ✓ Yoga education contributed to **enhanced physical endurance** during daily activities.
- ✓ Participants experienced **reduced muscular stiffness and fatigue**.
- ✓ Yoga practice supported **improved joint mobility** and functional movement.
- ✓ Breathing exercises enhanced **lung capacity and respiratory efficiency**.
- ✓ Trainees observed **better balance and coordination** in physical movements.
- ✓ Yoga education helped in **regulating body weight** and maintaining physical fitness.
- ✓ Participants reported **reduced occurrence of body aches and soreness**.
- ✓ Regular yoga practice improved **circulatory efficiency** and physical vitality.
- ✓ Yoga contributed to **better digestion and metabolic regulation**, as perceived by trainees.
- ✓ Trainees experienced **faster physical recovery** from tiredness and exertion.
- ✓ Yoga education supported **overall bodily relaxation**, reducing physical tension.
- ✓ Collectively, yoga education promoted **biological harmony and functional fitness** among B.Ed. trainees.

The biological benefits identified under Objective 2, including improvements in muscular strength, flexibility, respiratory efficiency and physiological regulation, are well supported by the existing literatures. Madanmohan et al. (1992) and Bhavanani et al. (2011) provided empirical evidence that yoga training enhances muscle strength, respiratory pressures and pulmonary function, directly supporting the present findings on physical endurance and respiratory efficiency. Pal et al. (2004) and Streeter et al. (2012) reported improved autonomic balance and cardiovascular regulation following yoga practice, reinforcing observed improvements in circulatory efficiency and bodily regulation. Furthermore, Ross et al. (2013) and Ray et al. (2015) documented enhanced physical fitness, flexibility and body awareness among yoga practitioners, substantiating the biological harmony and functional fitness outcomes reported among B.Ed. trainees in the current study.

Findings Related to Objective 3

To explore the role of yoga education in reducing stress and improving mind-body balance among B.Ed. trainees.

The findings related to Objective 3 reveal that yoga education plays a significant role in reducing stress and enhancing mind-body balance among B.Ed. trainees. Review of previous empirical studies consistently indicates that yoga-based practices contribute to lower perceived stress levels through physiological relaxation and psychological regulation (Ross & Thomas, 2010; Li & Goldsmith, 2012). Yoga practices such as asanas, pranayama and meditation activate the parasympathetic nervous system, which helps in reducing stress-induced physiological arousal (Streeter et al., 2012).

Studies further indicate that yoga improves emotional regulation and reduces anxiety by enhancing mindfulness and self-awareness (Woodyard, 2011). Regular yoga practice has been associated with decreased cortisol levels and improved autonomic balance, which are key biological markers of stress reduction (Field, 2011; Pascoe et al., 2017). These psycho-physiological changes support a calmer mental state and improved coping ability in academically demanding environments.

Systematic reviews have shown that yoga interventions significantly reduce stress and improve psychological well-being among healthy adults and student populations (Cramer et al., 2013; Goyal et al., 2014). In academic contexts, yoga has been found to be particularly effective in addressing stress related to examinations, workload and performance expectations. Tong et al. (2021) reported that yoga produced greater improvements in stress reduction and mindfulness compared to conventional physical exercise among university students, highlighting its superior mind-body integrative effects.

Overall, the reviewed evidence suggests that yoga education fosters mind-body harmony by integrating physical relaxation, emotional stability and cognitive calmness. These outcomes are especially relevant for B.Ed. trainees, who face academic pressure and professional training stress. Thus, yoga education emerges as an effective psycho-physiological intervention for stress management and holistic well-being in teacher education programmes.

Conclusion

The present study explored the effectiveness of yoga education in enhancing physical fitness and reducing stress among B.Ed. trainees, with particular emphasis on health, biological, physiological and psycho-physiological dimensions. The findings clearly indicate that yoga education plays a significant role in promoting overall health and well-being by improving physical awareness, flexibility, muscular strength, energy levels and healthy lifestyle habits. Yoga practices were also found to contribute positively to biological

functioning, including better posture, respiratory efficiency, physical endurance and bodily regulation, thereby supporting functional fitness among trainee teachers.

Moreover, the study highlights yoga education as an effective intervention for stress reduction and mind-body balance. The integration of yogic postures, breathing techniques and mindfulness practices enabled B.Ed. trainees to manage academic stress more effectively, enhance emotional stability and improve concentration and mental clarity. These psycho-physiological benefits are particularly relevant in teacher education programmes, where trainees often experience high levels of academic and professional pressure.

Overall, the study underscores the holistic nature of yoga education and its potential to foster balanced physical, mental and emotional development among future teachers. Incorporating yoga education into B.Ed. Curriculum may therefore serve as a sustainable and cost-effective strategy for promoting teacher well-being, resilience and professional preparedness. The findings suggest that yoga education can contribute meaningfully to the development of healthier, more mindful and emotionally stable educators, ultimately benefiting the teaching-learning process.

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