The Effects of a 4-week Yoga Program on Perceived Level of Stress and Functional Movement

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Abstract

Purpose: Yoga is a holistic approach to complementary medicine that involves areas such as emotional, spiritual, and physical aspects of wellness through a mind-body exercise. Research has shown that yoga improves muscular mobility and strength, pain relief, and reduces stress. Reducing stress can decrease inflammatory cytokines leading to higher success rates in cancer therapy (Archer et al., 2012). However, it is disputed whether yoga improves breathing, weight management, circulation, cardiovascular conditioning, and spirituality. The purpose of this study is to examine the physical and psychological effects of a 4-week hatha yoga program on active young adults. The measured psychological aspects included stress levels, and the physical aspects included functional movement incorporating stability and mobility.
Methods: 16 active young adults with limited yoga experience, 1 male and 15 females (age=19.68±1.01), participated in the study. All subjects signed an informed consent prior to testing. Participants completed pre/post assessments of a functional movement screening and Smith Relaxation States Inventory 3 (SRSI3). Participants then completed 4 weeks of the Hatha & Flow Yoga for Beginner DVD (Anchor Entertainment Inc.) for three, 30 minute sessions a week.
Results: A paired sample t-test found significance for improvement in the overall functional movement screening scores (p=0.001). In addition, significance was found for a decrease in overall stress levels (p=0.001).
Conclusion: Results demonstrate that yoga would be a beneficial addition to exercise programs. Practicing yoga for 4 weeks allows for improvement in mobility and stability, thus quality of life. Participants also displayed increased levels of relaxation and decreased levels of stress after completion of this program. Therefore, yoga is an effective form of complementary medicine due to its ability to be implemented into therapies, such as chronic pain, cancer, and musculoskeletal therapies.

Introduction

Yoga as exercise has been around for thousands of years because of its ability to promote health, increase mobility and strength, provide pain relief, and reduce stress. It is a multidimensional approach to complementary medicine that involves the physical, emotional, and spiritual dimension of wellness. Research has shown yoga to be beneficial as a therapy modality specifically in cancer patients, as it has the ability to reduce stress and decrease inflammatory cytokines[1]. In addition, this practice has been beneficial in helping control pain, improve functional disabilities, and improve flexibility in patients with chronic back pain[5]. Research has found that yoga programs have the ability to influence both psychological and physical health, supporting the mind-body connection of exercise[3]. As an implemented exercise program it has been shown to decrease perceived stress, influencing chronic stress-related illnesses[3]. Many tools are available to measure stress and relaxation, and the Smith Relaxation States Inventory 3 (SRSI3) is among the self-report questionnaires, which addresses 15 relaxation state (R-S) categories, allowing for access to the wide variety of relaxation and stress states[2].

Methods

Data was collected from 16 active young adults from Bethel University who had limited yoga experience (Male=1, Female=15) ages=19.68±1.01. Inclusion criteria required subjects to have no yoga practice within the last 6 months or any yoga participation on a long-term basis. Subjects were recruited via flyers, emails, and word of mouth. All participants signed an informed consent prior to testing. The study was completed over a 6-week duration. Week one consisted of pre-testing of a functional movement screening and the Smith Relaxation States Inventory 3 (SRSI3). All tests were conducted by the same researcher to ensure internal validity. The Functional Movement Screening (Functional Movement Systems Inc.) consists of 10 movements: Deep Squat, Hurdle Step, Inline-Lunge, Shoulder Mobility, Shoulder Impingement, Active Straight Leg Raise, Trunk Stability Push-Up, Spinal Extension Impingement, Rotary Stability, and Spinal Flexion Impingement[4] . The SRSI3 addresses 15 relaxation state (R-S) categories and asks "how one feels right now" using a 6-point Likert scale (1 = not at all, 6 = very much). The relaxation states are divided into four categories: Basic Relaxation, Core Mindfulness, Mindful Doing, and Deep Mindfulness[2]. Subjects completed 4 weeks of the Hatha & Flow Yoga for Beginner DVD (Anchor Entertainment Inc.). Each week consisted of three, 30 minute yoga sessions, for a total of 12 sessions over the course of the research. Weeks 2 and 4 included Hatha Yoga exercises, while alternatively, weeks 3 and 5 included Flow Yoga exercises. All yoga sessions were held in classrooms at Bethel University, in dim lighting, with mats and towels provided. During week 6, subjects were reassessed using the same functional movement screening and SRSI3.

Figure 1: Comparison of Pre and Post Functional Movement Screening Scores

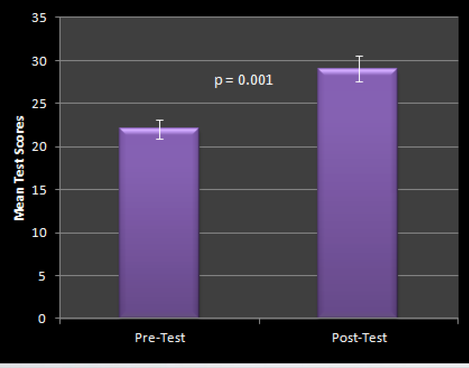
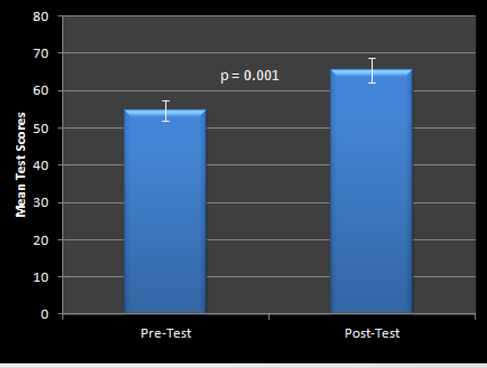


Figure 2: Comparison of Pre and Post Smith Relaxation Stress Inventory 3 Scores



Results

A paired sample t-test found significance for improvement in the overall functional movement screening scores (p=0.001) (Figure 1). In addition, significance was found for a decrease in overall stress levels (p=0.001) (Figure 2). Statistical analysis was performed using the IBM SPSS software.

Conclusion

Significant results ($p < 0.05$) of the current study demonstrate that yoga would be a beneficial addition to exercise programs. Practicing yoga for 4 weeks allows for improvement in mobility and stability (Figure 1), thus increasing overall quality of life for both healthy and non-healthy individuals. As a result of completing this yoga research program, participants displayed significant increases in levels of relaxation and decreases in levels of stress (Figure 2). Decreasing perceived levels of stress could reduce an individual's chance of developing a chronic disease. Therefore, yoga is an effective form of complementary medicine due to its ability to be implemented into therapies, such as chronic pain, cancer, and musculoskeletal therapies. Further research should be conducted to examine the effect yoga has on blood pressure as another way to measure stress responses. In addition, longer program duration should be used to measure longitudinal data.

References

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