ABSTRACT

TITLE: EFFECTS OF YOGASANAS ON THE KNEE COMPLEX

Introduction: Yogasanas or yoga postures have been practiced as a form of exercises since ancient times. Its benefits for health and fitness are well documented but effects on musculoskeletal system in general and specifically on knee joints was lacking. The need to understand the effects of yogasanas is acutely felt today because of the increased morbidity of degenerative and stress related diseases, impact of modern life-style and increased life span may be with evolution and advent of modern medicine. Aims: To study short-term and long-term effects of yogasanas on the knee complex. Study was divided in six groups and five case studies. Study Design: Retrospective and prospective in various groups. Within subject repeated measures design was used for prospective groups. Methodology: Group A- One time assessment for participants practicing yogasanas from 2 to 5 years, >5 to 10 years, >10 years, 35 in each subgroup. Group B- Initial and follow-up for 25 asymptomatic participants was made for effects of long-term practice of yogasanas. BMI, Hip flexors, hamstrings tightness and global spinal flexion range and Baddha-konasan pose was assessed. Self reported effects of yoga and attainment of squatting posture was analyzed for group A, B & E. Group C-To study effects of yogasanas on 50 participants with knee Osteoarthritis (OA). Group D Knee club holistic approach including modified yogasanas on 50 members with knee OA. Outcome measures for six months follow-up for OA were: Knee Osteoarthritis outcome score (KOOS) and American knee society knee score (KSKS) objective component, and measures of group A & B. Group E: Evaluation of 20 participants from UK according to group B with 3 months follow-up. Group F- 5 case studies with three months yogasanas practice. In all 270 participants were assessed for yogasan practice three times/ week. Yogasans advised (with gradual progression & modifications made as needed): Tadasan, Trikonasan, Virbhadrasan, Paschimottanasan, Ardhamatsendrasan, Vajrasan, Baddha-konasan, Dhanurasan cycle, Pavan-muktasan & Shavasan. Results: BMI- all groups was maintained between normal to overweight category. Statistically significant improvement noted in hip flexors, hamstrings, spine flexion flexibility and hip and knee ranges on baddha-konasan by paired t-Test. KOOS pain, symptoms and Quality of life markedly improved OA yogasanas group: KOOS Pain improved by 5.2, Symptoms 5.5, QOL 7.8 points and KSKS 3.9 points. Knee club: KOOS pain 6.2 points, symptoms 6.9, and QOL 8.9 & KSKS 4.7 points. Statistical significance observed on Wilcoxon sign ranked test p 0.000 for all subscales. On all five cases gradual improvement on pain and function noted but supplementation by physiotherapy sessions was needed at some points for OA cases. Use of medications remained unaltered. No adverse effects due to yogasanas practice reported. Conclusion: QOL can change significantly in patients with OA. Yogasanas can be effective in maintaining/improving function and flexibility of knee complex & lower limb, can maintain weight & can be safely used in therapy along with medications and physiotherapy treatment.