1: INTRODUCTION

Yogasanas or yoga postures are practiced as a form of exercise since ancient times. It is not mere therapy but philosophy of life (Iyengar 2001). The need to understand the effects of yogasanas is acutely felt today because of the increased morbidity of degenerative & stress related diseases and impact of modern lifestyle. Literature on yoga does not mention effects on various disease processes mentioned by orthopaedic or modern medicine and physiotherapy. Yoga is included in physiotherapy curriculum in India. Effects of Yogasanas on musculoskeletal system in general are widely known (Coulter 2002, Patel 2008) yet documentation of evidence based results involving particular joints could not be traced till the start of this study in March 2003.

This observational study explored the effects of Yogasanas or yoga postures on the knee complex. Since the evolution of humans from quadruped animals, stresses have increased on the knee complex. The tibio-femoral component of the knee is the largest joint of the body. Knee joint supports body weight and same time provides mobility. Though hip and ankle joints similarly support body weight, the knee is more complex structure (Nordin &Frankel 2002). Knee joint is formed by two of longest levers and is located in a more exposed position than either hip or ankle. Knee joint is most affected in degenerative conditions, injuries in sports, developmental problems and more. Osteoarthritis (OA) of knee is most common arthritis in Indian population (Vasudevan et al 1997). Medical professionals are looking beyond present therapy measures.

Researcher is physiotherapist and has learnt Yogasanas from her father who is a qualified yoga practitioner from Kaivalya yoga institute Lonavala. Padmabhushan Dr K.H.Sancheti who is designer of Indian knee joint
prosthesis 'Indus' was the inspiration for this research. Dr Sancheti has also initiated a holistic preventive and conservative management programme known as Knee club at Sancheti Institute. Increasing number of physiotherapist are already including Yogasans as a part of preventive and restorative treatment programme.

PHYSIOTHERAPY’ also called as Physical therapy is the modern scientific system of medicine using physical means. Physiotherapy includes: Examination, treatment, advice and instruction to any person with movement dysfunction, bodily malfunction, physical disorder/disability, healing and pain from injury, diseases, physical and mental conditions. Use of physical agents, activities and devices including exercises, mobilization manipulation and electrotherapy is made. Physiotherapy is an essential part of preventive and restorative health services delivery systems.

The World Confederation for Physical Therapy (WCPT), which was founded in 1951 to represent physical therapists internationally, champions the principle that every individual is entitled to the highest possible standard of culturally-appropriate health care provided in an atmosphere of trust and respect for human dignity and underpinned by sound clinical reasoning and scientific evidence. Modern Physiotherapy has its origin from various areas and there are no doubts that flexibility and core strengthening and proprioceptive neuromuscular facilitation methods have been derived from yogasanas. Due acknowledgement is not made in the literature. Also only a few systematic studies on effects of yogasans on musculoskeletal conditions are found though it is widely known and accepted fact that yogasans have a clear impact on the muscles, soft tissues and skeletal system. WCPT also encourages
development and research into traditional means keeping in view the
different cultures and geographical areas.

As physiotherapist know about the indications, contraindications to various
musculoskeletal problems, treated conservatively and surgically. They can
suggest yogasans as a part of therapy than exclusive yoga teachers; as
they may not be aware about the specific movements to be avoided for
example, pathological conditions such as spondylolistheses, cervical rib,
prolapsed intervertebral discs, internal derangement of knee. As
traditionally yogasanas were taught and practiced to maintain or improve
musculoskeletal system in asymptomatic individuals.

Knee joint problems are most common musculoskeletal involvements.
Indian culture and traditions involve this joint under various stresses and
extreme positions. Squatting and cross-legged sitting are the main posture
requirements. Hence knee joint problems cause great morbidity and loss
of function. Osteoarthritis of knee is a major problem amongst other
conditions so this was studied in great details and large number of
participants having osteoarthritis of knees interested in trying yogasanas
or joining knee club (holistic programme) were included. Presently
available measures are not providing conclusive results hence demands
for holistic approach are increasing all over the world. In this study
evaluation of effects of yogasanas and the knee club holistic management
for osteoarthritis of knee was done.

Yogasanas are practiced for years by some members of our society.
Evaluation was made for checking effects of long-term yogasanas practice
by retrospective method. Evaluation was made in three groups: practice
of more than 2 years, five years, 10 years and a small group for more
than 25 years. Effects of long-term practice were assessed for a period of
two years, pre and post analysis on twenty-five participants. In the western countries the seating and life-style does not utilize full range of the lower limbs in functional way in day to day life. Yogasanas practice has become increasingly popular world wide. Researcher got opportunity to visit and work in England hence it was possible to study a small group of this part of the world population.

Case studies done reveal effects of yogasanas on variety of problems or conditions affecting knee joints. Two Rheumatoid arthritis cases were studied (one attended follow-up). Internal derangements of knees are caused due to trauma and sport injuries. Fractures around and involving knee joint managed conservatively or operatively need immobilization and non-weight bearing period. Effects of yogasanas are studied in two cases of each.

Evaluation of short term and long term practice of yogasanas on knee complex was done prospectively and retrospectively from physiotherapy perspective. Dimension of yogasanas was added by evaluation of complex poses which do not fall under routine physiotherapy evaluation: Baddha konasan and Utkatasan Through pre pilot study yoga postures involving knee joint were explored. Muscle work and effects of each posture were analyzed. Appropriate method to teach each asana was practiced by the researcher on few subjects who were novice in yogasans.

To study the spiritual or mental effects of yogasanas were not within the scope of the study.