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Research Article

EFFICACY OF INTEGRATED APPROACH OF YOGA THERAPY (IAYT) ON OLD DESTITUTE WOMEN

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ABSTRACT

The geriatric population is highly prone to decreased quality of life, stress along with various other issues. There is a greater risk involved when it comes to both communicable and non-communicable diseases. With rapid urbanisation the elderly face age related psychological and physiological issues. The aim of the present study is to evaluate the change in Quality Of Life (QOL) and Perceived Stress (PS) when the old destitute women were subjected to practice of Integrated Approach of Yoga Therapy. A pre-post study was conducted. The Yoga module included loosening exercises, breathing practises, *Asanas, Pranayama,* MSRT Meditation, *Bhajans.* The data collected was assessed after 2 months of Yoga intervention. The questionnaire used were WHO QOL-BREF and PSS. The Yoga group reported reduction in Perceived Stress Scale score and increase in score in 3 domains of Quality Of Life Questionnaire namely Physical parameter, Psychological parameter and Environment parameter. There was a marginal decrease in the score of social relationship domain of Quality Of Life Questionnaire. Hence destitute women showed marginal improvement in QOL and PSS. However, additional research and long term yoga intervention is needed to further evaluate the efficacy of yoga to improvise the QOL and stress levels.

INTRODUCTION

The world has seen an improvement in all aspects of life quality since the age of modernization. It has led to better healthcare and in turn an unprecedented increase in the average lifespan of humans. The world's older population, thus, continues to grow at a high rate. India is in a phase of demographic transition. The demographic transition is attributed to the decreasing fertility and mortality rates due to the availability of better health care services. As per the 1991 census, the population of the elderly in India was 57 million as compared with 20 million in 1951.[1] There has been a sharp increase in the number of elderly persons between 1991 and 2001 and it has been projected that by the year 2050, the number of elderly people would rise to about 324 million.[2] According to the recent statistics related to elderly people in India, about 48.2% of elderly persons were women, out of whom 55% were widows. One-third were reported to be living below the poverty line, i.e., 66% of older persons were in a vulnerable situation without adequate food, clothing, or shelter. [3]

Elderly people suffer from dual medical problems, i.e., both communicable as well as non–communicable diseases. This is further compounded by impairment of sensory functions like vision and hearing. A decline in immunity and other age-related physiological changes leads to an increased burden of communicable diseases in the elderly. The prevalence of chronic illnesses usually include hypertension, coronary heart disease, and cancer[4]. The rapid urbanization and societal modernization has brought in its wake a breakdown in family values and the framework of family support, economic insecurity, social

isolation, and elderly abuse leading to a host of psychological illnesses. In addition, widows are prone to face social stigma and ostracism. The socio-economic problems of the elderly are aggravated by factors such as the lack of social security and inadequate facilities for health care, rehabilitation, and recreation. There have been several studies conducted where Yoga therapy was used to improve the various factors of life quality deterioration for the elderly[5]. A study conducted in Nagpur displayed the potent nature of these interventions in achieving the aims of rehabilitation and improvement in health care for the elderly population.[6]

The UN has not adopted a standard criterion, but generally uses 50+ years to refer to the older population [personal correspondence, 2001). Some physical markers of oldage are brittle bones marked by thinning and shrinkage and also bone and joint diseases such as osteoarthritis and osteoporosis. Most of the time, old age is marked by digestive disorders such as difficulty in swallowing, inability to eat enough and to absorb nutrition, constipation and bleeding. Presbyopia can occur by the age of fifty and it hinders reading especially of small print in low lighting.[7] Old age spells risk for injury from falls that might not cause injury to a younger person. Every year, about one-third of those sixty-five years old and over half of those 80 years old fall. Falls are the leading cause of injury and death for old people. Some aspects of gait normally change with old age. Gait velocity slows after age seventy. Double stance time (i.e., time with both feet on the ground) also increases with age. By age seventy-five and older, forty-eight percent of men and thirty-seven percent of women encounter impairments in hearing. Of all the people over age fifty with a hearing impairment, only one in seven uses a hearing aid. Sleep trouble holds a chronic prevalence of over fifty percent in old age and results in daytime sleepiness. Urinary incontinence is often found in old age.[8]

According to Cox, Abramson, Devine, and Hollon (2012, old age is a risk factor for depression caused by prejudice [i.e., "deprejudice"). When people are prejudiced against the elderly and then become old themselves, their anti-elderly prejudice turns inward, causing depression Old age depression results in the over-sixty-five population having the highest suicide rate**.** Memory loss is common in old age due to the decrease in speed of information being encoded, stored, and retrieved. It takes more time to learn new information. Dementia is a general term for memory loss and other intellectual abilities serious enough to interfere with daily life. Its prevalence increases in old age from about ten percent at age sixty-five to about fifty percent over age eighty-five. Alzheimer's disease accounts for fifty to eighty percent of dementia cases.[9]

At present, most of the geriatric out-patient department (OPD) services are available at tertiary care hospitals. Also, most of the government facilities such as day care centers, old age residential homes, and counseling and recreational facilities are urban based. In difficult to access areas, screening camps for non-communicable diseases and mobile clinics could play a significant role in reaching out to the elderly population. Advocacy with non-governmental organizations (NGOs), charitable organizations, and faith-based organizations could play an important role in this aspect. Rehabilitation comprises of provisions for counseling services wherein older persons can benefit from psychological assistance in the face of stressful life events, interpersonal conflicts and changes imposed by ageing. Under rehabilitation, health care facilities should aim for holistic development by organizing training workshops in accordance with the skills of the elderly. [10]

MATERIALS AND METHODS

Participants

Forty eligible participants were selected and they were administered the Yoga intervention for a two month duration. Eligibility was determined as women within the age range of forty-five to ninety years old, a willingness to participate, literacy and destitute state of living. The only elimination criteria was that no participant should have undergone a major abdominal surgery in the past six months. The participants were divided into two even-numbered groups: the 'Yoga group' and the 'control group'. The groups consisted of twenty participants each. A pre-study and post-study was undertaken and the results were evaluated.

Ethical clearance

The study was approved by the Institutional Ethics Committee of S-VYASA (Swami Vivekananda Yoga Anusandhana Samsthana) University. Both signed informed consent from the institution head and signed informed assent from all participants were obtained upon explaining the study details.

Design

The participants were divided into the 'Yoga group' and the 'Control group'. The Yoga group underwent the Yoga program for two months whereas the Control group underwent their regular routine activities without any Yogic intervention (refer Fig. 1).

Yoga intervention

A two month Yoga module, of one hour per day, was designed for destitute women. The module consisted of voluntary regulated breathing (*Pranayama*), loosening exercises, simple physical postures (*Asanas*), relaxation techniques like Mind Sound Resonance Technique (MSRT) and *'Bhajans'*. The participants were evaluated for mental health and well-being by being surveyed and asked a series of questions following the World Health Organisation – Quality Of Life (WHO-QOL BREF) questionnaire. This data was later evaluated.

Table 1: Yoga module designed for the study

Practice		**Time (minutes)**
Opening prayer		1
Breathing practice	Hand stretch breathing	2
	Hands in and out breathing	2
Loosening practice	Passive rotation of toes	1
	Toe rotation	1
	Ankle rotation	1
	Knee bending	1
	Wrist rotation	1
	Shoulder rotation	1
	Neck rotation	1
	Neck bending	1
	Chair *Suryanamaskara*	8
Asanas	*Ardhakatichakrasana*	1
Pranayama	Sectional breathing	5
	Bhramari	3
	Nadishuddhi pranayama	5
Meditation	MSRT [Mind sound resonance technique]	20
Bhakti yoga	*Bhajans*	15
Closing prayer		1
Total		**56 minutes**

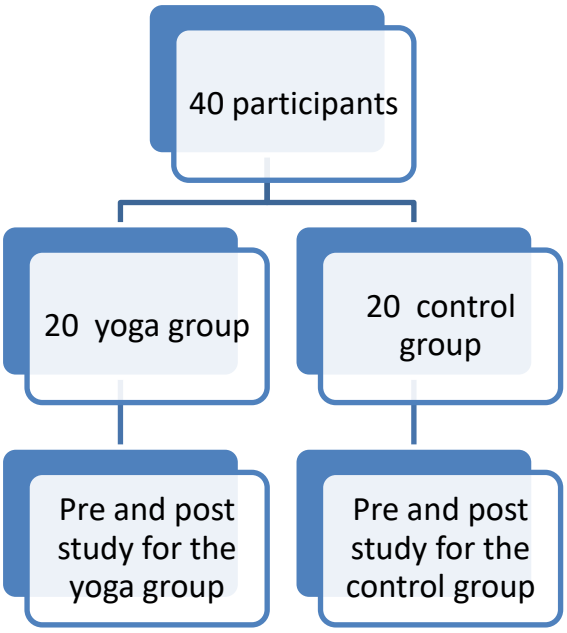

Fig. 1. Representation of the study design

MSRT and Bhajans were not performed on the same day. MSRT is given on alternate days.

RESULTS AND DISCUSSION

Paired Sample T-Test for Yoga and Control Group

Table 2: WHO QOL BREF – Physical parameter

	Mean	Standard deviation	T Value	P value
Yoga group pre- physical	10.85	1.81	-1.072	0.297
Yoga group post-physical	11.30	2.577	-1.072	0.154
Control group pre- physical	8.90	1.774	-2.131	0.046
Control group post- physical	9.01	2.084	-2.131	0.046

- Since the data is normally distributed paired sample t test was run for yoga group and control group for physical parameter.
- Before intervention for the yoga group the mean was 10.85, standard deviation was 1.81, t value was 0.685 and p value was 0.001. After intervention for the yoga group the mean was 11.30, standard deviation was 2.577, t value was -1.072 and p value was 0.297.
- Before intervention for the control group the mean was 8.90, standard deviation was 1.774, t value was -2.131 and p value was 0.046. After intervention for the control group the mean was 9.01, standard deviation was 2.084, t value was -2.131 and p value was 0.046.

Table 3: WHO QOL BREF – Psychological parameter

	Mean	Standard deviation	T Value	P value
Yoga group pre- psychological	10.15	2.54	-1.486	0.297
Yoga group post-psychological	10.65	2.852	-1.486	0.297
Control group pre- psychological	8.55	1.669	0.698	0.494
Control group post-psychological	8.45	1.791	0.698	0.494

- Since the data is normally distributed paired sample t test was run for yoga group and control group for psychological parameter.
- Before intervention for the yoga group the mean was 10.15, standard deviation was 2.54, t value was -1.486 and p value was 0.297. After intervention for the yoga group the mean was 10.65, standard deviation was 2.852, t value was -1.486 and p value was 0.297.
- Before intervention for the control group the mean was 8.55, standard deviation was 1.791, t value was 0.698 and p value was 0.494. After intervention for the control group the mean was 8.45, standard deviation was 1.791, t value was 0.698 and p value was 0.494.

Table 4: WHO QOL BREF – social relationship parameter

	Mean	Standard deviation	T Value	P value
Yoga group pre- social relationship	7.85	1.785	0.900	0.379
Yoga group post- social relationship	7.70	1.75	0.900	0.379
Control group pre- social relationship	6.65	1.424	0.224	0.825
Control group post- social relationship	6.60	1.392	0.224	0.825

- Since the data is normally distributed paired sample t test was run for yoga group and control group for physical parameter.
- Before intervention for the yoga group the mean was 7.85, standard deviation was1.785, t value was 0.900 and p value was 0.379. After intervention for the yoga group the mean was 7.70, standard deviation was 1.75, t value was 7.85 and p value was 0.900.
- Before intervention for the control group the mean was 6.65, standard deviation 1.424was, t value was 0.224 and p value was 0.825. After intervention for the control group the mean was 6.60, standard deviation was 1.392, t value was 0.224 and p value was 0.825.

Table 5: WHO QOL BREF – Environment parameter

	Mean	Standard deviation	T Value	P value
Yoga group pre- Environment domain	11.15	3.441	-1.697	0.106
Yoga group post- Environment domain	20.20	3.88	-1.697	0.106
Control group pre- Environment domain	8.65	1.182	0.513	0.614
Control group post- Environment domain	8.50	1.638	0.513	0.614

- Since the data is normally distributed paired sample t test was run for yoga group and control group for physical parameter.
- Before intervention for the yoga group the mean was 11.15, standard deviation was 3.441, t value was -1.697 and p value was 0.106. After intervention for the yoga group the mean was 20.20, standard deviation was 3.88, t value was -1.697and p value was 0.106.
- Before intervention for the control group the mean was 8.65, standard deviation was1.182, t value was 0.513 and p value was 0.614. After intervention for the control group the mean was 8.50, standard deviation was1.638, t value was 0.513 -and p value was 0.614.

Table 6: Perceived Stress Scale(PSS)

	Mean	Standard deviation	T Value	P value
Yoga group pre data	20.55	3.441	0.717	0.482
Yoga group post data	20.20	2.088	0.717	0.482
Control group pre data	23.00	6.25	-0.538	0.597
Control group post data	23.35	5.029	-0.538	0.597

- Since the data is normally distributed paired sample t test was run for yoga group and control group for physical parameter.
- Before intervention for the yoga group the mean was 20.55, standard deviation was 3.441, t value 0.717 was and p value was 0.482. After intervention for the yoga group the mean was 20.20 standard deviation was 3.088, t value was 0.717 and p value was 0.482.
- Before intervention for the control group the mean was 23, standard deviation was 6.258, t value was 0.513 and p value was 0.614. After intervention for the control group the mean was 23.35, standard deviation was 5.02, t value was 0.513 and p value was 0.614.

DISCUSSION

A study conducted in Bangalore where elderly above the age of 60 were selected. The yoga group was given an intervention of 1 month weekly until 3rd month and follow up was done till 6 months. Yoga group showed significant improvement in immediate and delayed recall of verbal (RAVLT) and visual memory (CFT), attention and working memory (WMS-spatial span), verbal fluency (COWA), executive function (Stroop interference) and processing speed (Trail Making Test-A) than waitlist group at the end of 6 months after correcting for corresponding baseline score and education.[11]

A study conducted in Nagpur, a cross sectional questionnaire based survey was used. This was a cross-sectional study in which data were collected from elderly people aged 60 years or more living in Nagpur city. Two types of survey questionnaires: Pittsburgh sleep quality index (PSQI) and QOL Leiden-Padua (LEIPAD) Questionnaire. A total of 65 elderly men and women who signed an informed consent and completed questionnaires were included in the study. Sleep quality score PSQI and QOL (LEIPAD Questionnaire) score of the study group were evaluated and compared with the control group using Mann-Whitney U test. Total PSQI score in Yoga group was lower than that of the control group. Also various QOL scores of the Yoga groups were higher than the control group. Addition of regular Yoga exercises in the daily routine of elderly people can help to achieve good sleep quality as well as improve the QOL. [12]

Rehabilitation comprises of provisions for counseling services wherein older persons can benefit from psychological assistance in the face of stressful life events, interpersonal conflicts, and changes imposed by ageing. Under rehabilitation, health care facilities should aim for holistic

development by organizing training workshops in accordance with the skills of the elderly. [13]

Another study was conducted on patients with Chronic Neck Pain (CNP). Add-on yoga relaxation for the study group was used after the physiotherapy. It was found the Yoga relaxation through MSRT adds significant complimentary benefits to conventional physiotherapy for CNP by reducing pain, tenderness, disability and state anxiety and providing improved flexibility. [14]

Yoga has been found to be an effective tool in reducing stress levels in elder (Michaels et al., 1976). Benefits of yoga include improved quality of life and mood, which are important factors in maintenance of lifestyle behavior change. [15]

The aim was to study if yoga helped improvement of old destitute women. The study showed marginal improvement in the scores of physical, psychological, social relationships, environment and perceived stress as compared to control group. The Yoga group participants reported higher reduction in Perceived stress and higher increase in Quality Of Life.

The overall Quality of Life score increased marginally and the perceived stress decreased. The findings of this study are in support of earlier studies indicating positive effect of yoga in reducing stress related symptoms. Improvement observed in control group may be due to uncontrolled physical activities in the environment is which the destitute women are living in.

CONCLUSION

An ideal preventive health care package for the elderly should include various components such as knowledge above the disease, awareness about disease conditions, steps for their prevention, management, good nutrition, balanced diet and physical exercise. For the promotion of a positive mind-set and to create a feeling of well-being, meditation, prayer, and strategies for motivation should also be included. Strengthening the elderly in the process of self-help can be done by means of physical, psychosocial, and vocational rehabilitation.

Destitute women showed marginal improvement in the Quality of Life and Perceived stress after participation in a 2 month yoga program. Yoga has proven to be marginally beneficial for the physical and mental health of the old destitute women. The chanting of *AUM kara* has proven to be beneficial. But for significant results to be obtained, additional research and long term yoga intervention is needed to further evaluate the efficacy of yoga to improvise the QOL and stress levels. The findings of this study extended previous research on their research on quality of life and perceived stress.

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