



NIMHANS Integrated Centre for Yoga

National Institute for Mental Health & Neurosciences, Bengaluru-29

SAMATVAMI

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Yoga in elderly for healthy brain ageing

The population of elderly persons across the globe is increasing rapidly due to longer life expectancy. Living older contributes to an increase in the prevalence of health problems like cognitive impairment and Alzheimer's dementia. Elderly also have high risk for other chronic non communicable medical problems like diabetes, hypertension, osteoarthritis, heart and lung diseases and cancer. Even though age is one of the important risk factors for many of the medical illnesses that are common in elderly, it is definitely not inevitable that elderly have to develop these medical illnesses. Many of the elderly

continue to have an active and healthy life without significant limitations due to medical illnesses. Healthy life style with appropriate diet, regular physical activity, early identification and regular treatment of medical illnesses can contribute to increase in healthy life expectancy of elderly. This would also improve their quality of life

Among the major health issues facing elderly, dementia and Alzheimer's disease are some of the most important health problems that are emerging as a public health issue. The increase in the older old group (above 80 years of age) has contributed to significant increase in prevalence of dementia. The lack of any effective curative treatment available for dementia and the significant burden and economic cost related to dementia care is recognized as a major health challenge for many of the developing countries.

The focus has shifted to early identification and prevention as the chance of effective treatments after the onset of dementia is less likely.

Physical activity, diet and the control of diabetes, hypertension and dyslipidemia has contributed to improve the outcome of cardiovascular diseases globally. The possibility of preventing cognitive decline and dementia by life style modification such as increase in aerobic physical activity, control of diabetes, hypertension and other vascular risk factors, dietary modifications and intake of certain foods



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which have antioxidant properties has been considered as feasible based on recent studies. The adage of "what is good for the heart is also good for the brain" is possibly true from prevention studies that are now emerging. Yoga is a traditional intervention believed to have positive effects in promoting healthy ageing. Yoga is also considered to have beneficial effects on improving diabetes, hypertension and cognitive function. Yoga has been proven to have positive benefits in mental health problems like depression, anxiety and insomnia. Yoga can have positive impact on both physical and mental health. Yoga has been shown to have biological changes like reduction in cellular ageing measured by leucocyte telomere length and increased antioxidant status, increase in brain hippocampal volume.

Being a traditional intervention that is culturally acceptable to Indian elderly, yoga based interventions have the potential to be used actively in promoting healthy ageing. Recent research from our Yoga Centre at National Institute of Mental Health and Neurosciences has validated the Yoga module specifically for elderly. This module has been evaluated in elderly for improving cognitive functions and sleep. The beneficial effects of this Yoga module have been noted in both 3 months and 6 months after Yoga intervention when compared to a waitlist control group. This has to be studied further as the effect of steady continuous practice of these exercises has not been researched.

There is a great need for more awareness especially among elderly about the beneficial effects of Yoga to promote healthy ageing. More research needs to be done to determine the positive long term benefits of these practices.

Team at the NIMHANS Integrated Centre for Yoga



Sitting from left to right: Dr. Sneha J. Karmani (Senior Resident), Dr. Muralidharan Kesavan (Additional Professor) Dr. Shivarama Varambally (Additional Professor), Dr. B. N. Gangadhar (Professor of Psychiatry), Dr. Venkatasubramanian Ganesan (Additional Professor), Dr. Naren P. Rao (Associate Professor), Dr. Ramajayam G. (Research Officer)
Standing from left to right: Miss. Aditi Devi (ICMR-Junior Research fellow), Dr. Pooja More (Junior Scientific Officer), Miss. Gowthami C. (Yoga Therapist), Mrs. Shubha Bhat (Yoga Therapist), Mrs. Kavitha (LDC), Dr. Vinod Kumar (Junior Scientific Officer)

Aging and Wisdom



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The world is aging rapidly. There will soon be more people over age 65 years than children under age 5 – something that has never happened in the history of the world. Usually people think of aging as a bad thing, to be prevented and cured, if at all possible. They equate older age with disease, disability, degeneration, depression, dementia, and finally, death. In reality, research during the recent years shows that these notions about aging are simplistic and sometimes, plain wrong. Of course, not all older adults are the same, so the points made below would not apply to every senior citizen of the world. Nonetheless, in general, psychological well-being and happiness increase after middle age even as physical, cognitive, and fertility functions decline. Perfect physical health is neither necessary nor sufficient to feel happy as we grow older. There is a “paradox of aging”: physical health and some aspects of cognitive function (e.g., memory for names and faces) decline with age, while happiness, mental health, and management of interpersonal relationships improve.

How can we explain this counter-intuitive finding? The reasons include changes in attitudes with aging, such as greater acceptance of physical limitations, contentedness with past accomplishments in life, less preoccupation with peer pressure (- what others think about us), and a more realistic understanding of our own strengths and limitations. But that is not all.

Importantly, some cognitive and emotional abilities can actually improve with aging. Studies show that, compared to younger people, older adults make better decisions that require experience, they are emotionally more stable, and

become less impulsive or risk takers. The decades of experience that an older person has, help produce greater emotional control, rational decision making, and mature creativity. Older employees tend to be hard working, conscientious, reliable, and collegial, and take fewer sick days off than those who are many years younger.

Neuroplasticity of Aging

How can some aspects of brain and mental function get better in older age? Research shows that new learning is possible in later life, and older adults continue to show new forms of capacity to adapt to changing environment, and grow from stressful events. That is why we see Post-Traumatic Growth in some people instead of Post-Traumatic Stress Disorder (PTSD). Older people make greater use of sophisticated ways of thinking – e.g., considering several different perspectives on any issue, showing willingness to compromise and recognizing limits of their knowledge. Older adults are better decision makers than younger adults for decisions that require experience and ability to use that experience properly. How would this be possible if aging were only associated with degeneration of the brain? One of the most revolutionary findings in neuroscience research during the past 20 years has been that of the “neuroplasticity of aging” - the brain continues to be plastic (mouldable) in the Uttar Rang. New synapses (connections between neurons or brain cells), and in some areas, even new neurons can form in older brains - if there is sufficient physical, cognitive, and social activity in a supporting environment. Neuroplasticity of aging can be further increased through behavioral techniques, such as mind–body medicine (e.g., yoga) or meditation.

Our Attitudes and Behaviors Impact Aging

Age-related well-being is associated with positive personality traits like resilience, optimism, and social engagement. These traits are partly inherited, but can also be changed through behavior and environment. Numerous studies have shown that optimistic, resilient, and socially engaged people live longer and happier lives, with lower risk of developing heart disease, depression, and dementia, and recover faster from illnesses, compared to people who have lower levels of those traits. Positive traits probably counteract the negative effects of physical diseases and other stresses on successful aging. Aging does not reduce optimism, resilience, or social engagement, and in some case, may even increase those protective traits.

“Importantly, some cognitive and emotional abilities can actually improve with aging. Studies show that, compared to younger people, older adults make better decisions that require experience, they are emotionally more stable, and become less impulsive or risk takers.”

Wisdom of Older Age

In India and in many other eastern cultures, aging is thought to bring in more wisdom. What is wisdom and can it be studied scientifically? Research on wisdom-related behaviors has only recently received attention among neuroscientists and psychiatrists, even though the religious and philosophical concept of wisdom dates back to ancient times. My review of modern western scientific studies of wisdom suggests that it is a complex human trait, which includes several components: (1) general knowledge of life and social decision making, (2) emotional regulation, (3) insight (knowing yourself), (4) contributing to society’s common good (through compassion, empathy and altruism), (5) tolerance of different value systems, (6) decisiveness, (7) spirituality, (8) openness to new experiences, and (9) perhaps, a sense of humor. The relative weight of these different components may vary depending on the context or culture. However, behavior or action is the most important part of wisdom. A wise individual not only thinks wisely, but also acts wisely.

Next, I wanted to find out if today’s western definition of wisdom is markedly different from the ancient ideas about wisdom in eastern cultures

Wisdom in the Bhagavad Gita

The Bhagavad Gita exemplifies the cultural philosophy of traditional India. A colleague of mine and I studied the definition of wisdom in the Gita by using mixed qualitative-quantitative methodology, with the help of an anthropology researcher. We wanted to find out in what context the words wisdom and its opposite (foolishness or folly) were used. For example, a verse saying that “a wise person is decisive” suggested that decisiveness is a component of the definition

of wisdom in the Gita. A comparison of the definition of wisdom in the Gita with the modern scientific literature showed many more similarities than differences. The similarities included rich knowledge about life, emotional regulation, insight (with a focus on humility), contributing to common social good (compassion/sacrifice), decisiveness, and spirituality. The basic goal promoted in the Gita is that of rich knowledge of life in a broad sense (realizing one's personal limits within the context of the large universe) leading to humility, and at the same time, fulfilling obligations toward others through appropriate work that enhances society's well being rather than serving one's own narrow personal interests. This requires regulation of emotions so that rational social judgement supersedes one's selfish needs. Living in the face of uncertainty and understanding real and potential conflicts between personal and social goal is essential; however, such moral or practical dilemmas should lead, not to inaction, but to well chosen and decisive action. It is remarkable that the basic concept of wisdom described thousands of years ago in a far corner of the world resonates so well with modern western definition of wisdom.

At the same time, there are some interesting differences between the ancient Hindu philosophy and modern western view of wisdom. These include an emphasis in the Gita on control over desires and avoidance of material pleasures, along with complete faith in the God. The Gita stresses doing work (or even sacrifice) for the sake of duty rather than for obtaining personal rewards, except that self-contentedness resulting from fulfilment of one's responsibilities is considered appropriate. In contrast, modern western authors place a greater emphasis on personal well-being as an important goal of life.

The Gita points out that there is a range of levels of wisdom from absent (an anti-social person) to the highest level (a yogi with total integration of personality). Importantly, the Gita suggests that at least some elements of wisdom can be taught and learned. The learning of wisdom can facilitate a progression from a lower to a higher level, culminating in achieving the status of a "yogi." The role of experience is highlighted, as experience can help a person progress to a higher level of wisdom.

The relationship of wisdom to old age is not straight forward. While the Gita does not specifically refer to a relationship of wisdom to age, in other Indian literature on philosophy and religion, older people are generally considered wiser than the younger ones. Yet, modern research does not support a direct relationship between aging and wisdom. Indeed, not all older adults are wise and not all younger people are unwise. At the same time, with

increasing experience, there is often greater emotional balance, contentment with life, and a philosophical approach that corresponds to wisdom. Both the Gita and modern western literature stress the importance of experience in the development of wisdom. Possibly, wisdom is not an automatic result of experiences or aging itself, but only those individuals who have used their experiences appropriately, will become wiser with age.

Relevance of the Concepts in the Gita to Mental Health

A number of Indian scholars of the Gita have written extensively on the meaningfulness of the teachings of the Gita for modern lifestyle. Similarly, several western writers on spirituality have commented on the relevance of the Gita for western cultures. In many ways, most teachings of the Gita have a universal applicability. The Gita suggests both personal and holistic approach that could lead to development of psychotherapies for enhancing personal well-being rather than just reducing psychiatric symptoms.

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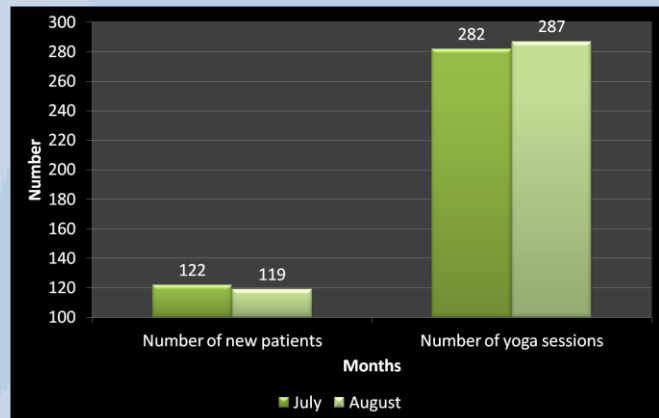
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Ongoing Research Projects at NICY:

- Effectiveness of Brief Out-patient Yoga for Schizophrenia (BOYS)
- Yoga based therapy for OCD
- The effect of yoga on cortical inhibition and mirror neuron activity in healthy individuals: A prospective study using transcranial magnetic stimulation
- Effect of yoga therapy on heart rate variability and self perception of health among inpatients with schizophrenia

Yoga therapy for Psychiatric & Neurological Disorders

NIMHANS Integrated Centre for Yoga offers yoga therapy for inpatient as well as outpatients. In the month of August 2015, yoga services were availed by 175 patients. Of these, 119 were new referrals (77 inpatients). Referrals were from all clinical departments, and these patients had diagnoses like schizophrenia or other psychotic disorders, depression, anxiety disorders, obsessive compulsive disorder, dementia, bipolar disorder, muscular dystrophy, psychogenic motor disorder, seizure disorder, learning disability, adjustment disorders and substance use disorders. A total of 287 sessions were conducted in August, with an average of 12 sessions per day.



	July	August
No of new patients	122	119
No of yoga sessions	282	287

Testimonials & Feedback of Patients

“My ability to walk, to write & to speak has shown some improvement with Yoga and Ayurveda treatments over a period of last 2-3 months.”

Feedback from a patient with Dementia

“Yoga as in your centre, purely restricted to body & mind, made us happy. Today mental diseases are due to both internal & external causes. So, realizing objective reality will cure the disease instead of running behind metapower. We are thankful to all of you as you trained us very well.”

Feedback from a patient with Bipolar disorder



A senior citizen practicing yoga at NIMHANS Integrated Centre for Yoga

First International Day of Yoga

Mass Yoga: On occasion of the first International Day of Yoga, NIMHANS held a mass yoga session for its staff & their families on the 21st of June. The session was conducted by the NIMHANS Integrated Centre for Yoga and was attended by 324 persons.

Several programs were held as part of the celebrations which extended longer than a week from thence.

Exhibition: ‘Yoga Sandesha - An exhibition on yoga, mind and body’, a collaborative event, was held simultaneously at the Visvesvaraya Industrial and Technological Museum and NIMHANS from 22nd to 30th June 2015.

Refresher Yoga course: A 5-day Refresher course in yoga was held from 22nd to 26th June at the Govindaswamy auditorium at NIMHANS. This attracted participation from 48 attendees including staff, students and faculty of NIMHANS.

IEC: e-‘Samatvam’, the official newsletter of NIMHANS Integrated Centre for Yoga (June 2015 edition) was released in collaboration with the White Swan Foundation on the online portal of the latter.

A yoga competition was held for patients and staff of NIMHANS, and prizes were awarded on 29th June.

A documentary ‘History of Yoga’ was screened on 27th June, attended by an audience of 50. It depicted journey of yoga from the ancient time to modern day’s research based understanding of yoga.

Public Function: The International Day of Yoga celebrations culminated on the 29th June, with a public function. Dr. Dilip Jeste, ex-



'Yoga Sandesha' at VITM



'Yoga Sandesha' at NIMHANS



Yoga based ballet performance

President, American Psychiatric Association, was the chief guest.

The culmination was marked by performance of a yoga- based ballet by staff members from various departments of NIMHANS. The winners and participants of the yoga competition were felicitated by the chief guest and the Registrar, NIMHANS.



Dignitaries releasing Samatvam

The program included a talk by Dr. Dilip Jeste highlighting the importance of Yoga in healthy aging and well-being.

Brochures on patient information for yoga and mental health were released at the culmination, along with a print version of the Samatvam.

It concluded with address by the chief guest and the Director, NIMHANS appreciating the overall events and acknowledging the importance of yoga in general as well as in mental well being, and the activities of the NICY in therapeutics, and in research.

Yoga Appreciation Course

The NIMHANS Integrated centre for Yoga conducts Yoga Appreciation Course (YAC) for the staff and students of NIMHANS from various disciplines. This course is conducted in the months of January, April, July and October. Duration of the course is one month. Both theory and practical classes are conducted by junior scientific officers and yoga instructors employed under NIMHANS Integrated Centre for Yoga. In the month of July 2015, the last



Participants of YAC, July 2015

YAC was conducted. It was attended by 46 members. Students who completed the course with adequate attendance were awarded with the participation certificates.

Forthcoming events:

- A monthly Yoga course for the elderly will be started on the occasion of the International Day of Older Persons in October 2015.
- A one day symposium on “Integrating Scientific and Contemplative Approaches to Explore the Mind” – 6th December, 2015.
- Academic faculty presentation by the NICY in December 2015.

Book Post

To

Mr/Mrs/Dr

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(Mental Health & Neurosciences)

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