



The Changing Scenario of Geriatric Orthopedics- Is Wholistic Orthopedics the Answer?

John Ebnezar^{1*}, Yogita Bali², Rakesh John³

¹ Consulting geriatric orthopedic surgeon and Wholistic Orthopedic Expert, Parimala Health Care Services, Bilekahalli, Bannerghatta Road, Bangalore-560076. Karnataka, India.

² Aayush Ayurvedic and Yoga Center, Arakere, BG Road, Bangalore-76

³ Consulting orthopedic surgeon, Parimala Health Care Services, Bilekahalli, Bannerghatta Road, Bangalore-560076 Karnataka, India.

*Corresponding author, Email: johnebnazar@gmail.com

Abstract

Introduction - Geriatric Orthopedic Problems is steadily on the rise globally thanks to the increasing life span and improved health care as a result of which people are living longer. It encompasses a wide spectrum of geriatric orthopedic conditions like osteoarthritis, neck pain, low back pain, frozen shoulder, rheumatic diseases, osteoporosis etc. They not only cause varying degrees of physical pain but causes mental, emotional, social and financial disturbances leading to stress, anxiety and depression. It is usually accompanied by multiple co-morbidities, co-musculoskeletal problems, co-mental and social issues. This could adversely affect the treatment and ultimately affect the quality of life and can be a great source of socio-economic burden to the society. Conventional treatment methods like drugs, physiotherapy and surgery cannot provide an effective answer as it fails to address the associated peculiar challenges of Geriatric orthopedic problems' (GOP's) thus creating an orthopedic health care dilemmas. Yoga, an ancient Indian art, is known for its holistic healing. Methodology- We conducted an RCT on 250 patients with osteoarthritis knees who underwent a 3 week conventional treatment (Control Group) and integrated yoga therapy as an add on (Study Group). Result and discussion-Our study showed that when compared to conventional treatment, yoga group showed better results in pain, movements, walking time, knee disability, stress scores and overall quality of life. Conclusion-When combined with modern medical treatment as an add-on, integrated yoga therapy provides an effective answer to the geriatric orthopedic problems like osteoarthritis of the knees and may help solve the dilemmas of orthopedic health care in the management of complex geriatric orthopedic problems.

Keywords: Geriatric orthopedic problems (GOP), Yoga, Osteoarthritis, Wholistic orthopedics

Introduction

Life is a gift from God and almost everyone wants to live long. Our life span is steadily increasing, from 47 years in 1900 to 72 years in 2000 and >80 years in 2015 (Department of Economic and Social Affairs Population Division, 2017). Aging Population Worldwide, we are living longer now. (Figure 1) Geriatric Orthopedic Problems (GOP) has assumed great significance in the recent times due to the ever increasing geriatric population thanks to the increase in the life expectancy of people across the globe and India. Bulk of orthopedic problems involves this population. The challenge in treating a geriatric patient is different due to the associated multiple co-morbidities, co-musculoskeletal conditions, psychosocial problems (Gabriella et al, 2008). Treating a geriatric patient demands special skills from the orthopedic surgeons.

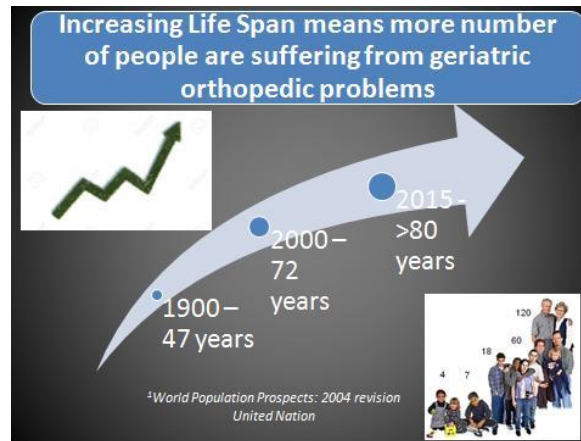


Figure 1 showing the increasing life span of the aging population worldwide

Emergence of geriatric orthopedics

There are two vulnerable groups in our society pediatrics, non productive but are the future and are hence loved, geriatrics is also non productive but have no future as they are considered liabilities by the family, society, government, insurance agencies. Old age homes is the final destination for many aged (Clarfield, 1990). Most countries have rising life expectancy and an ageing population as per the report published by the United Nations Development Programme (September 2005). The aged population is currently at its highest level in human history (McNicoll, 2002). The number of people aged 60 years and over has tripled since 1950, reaching 600 million in 2000 and surpassing 700 million in 2006. It is projected that the combined senior and geriatric population will reach 2.1 billion by 2050 (Chucks, 2010; Alhassan Issahaku, & Neysmith, 2013). According to data from *World Population Prospects: the 2017 Revision*, the number of older persons — those aged 60 years or over — is expected to more than double by 2050 and to more than triple by 2100, rising from 962 million globally in 2017 to 2.1 billion in 2050 and 3.1 billion in 2100. Globally, population aged 60 or over is growing faster than all younger age groups. In 2017, there are an estimated 962 million people aged 60 or over in the world, comprising 13 per cent of the global population. The population aged 60 or above is growing at a rate of about 3 per cent per year. The number of older persons in the world is projected to be 1.4 billion in 2030 and 2.1 billion in 2050, and could rise to 3.1 billion in 2100. (Figure 2). Globally, the number of persons aged 80 or over is projected to triple by 2050, from 137 million in 2017 to 425 million in 2050. By 2100 it is expected to increase to 909 million, nearly seven times its value in 2017.

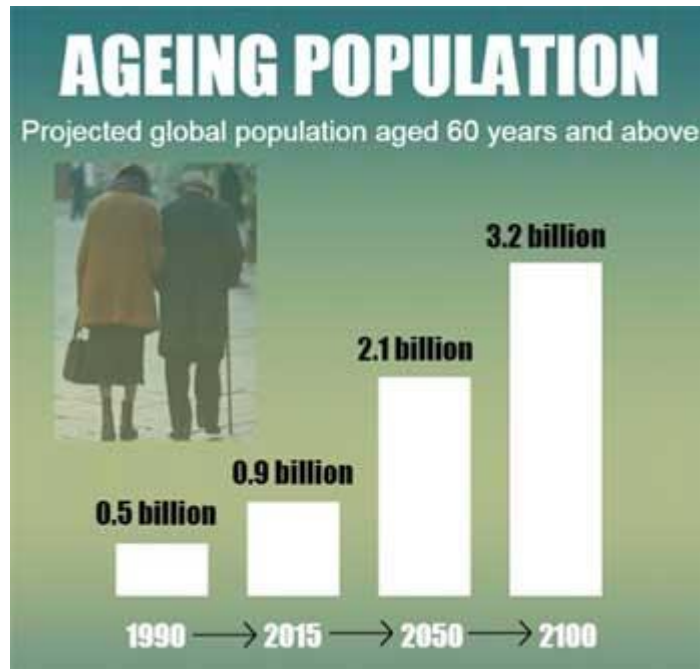


Figure 2 showing the projected global population aged 60 years or above (Source: United Nations, 2017)

Elderly patients are victims of multiple diseases and fragility fractures and geriatric orthopedic problems pose different set of challenges. Consider these cases:

Case Study No 1: 65 Years, female, Tri-Compartmental Severe OA, failed conservative therapy, diabetic, not willing for Surgery? (Figure 3)



Figure 3 Showing clinical deformity and x-rays advanced stages of OA knees

Case Study No 2: Another case of 77 years old, male, tricompartmental OA, failed conservative treatment, neck, and back pain, not willing for surgery. (Figure 4)



Figure 4 Showing advanced OA knees in a 77 year old male patient

Case Study No 3: Two Elderly females (Figure 5), tri-compartmental OA, failed conservative therapy, neck and back pain, diabetic, obesity, hypertension, one cannot afford surgery, and another is not fit for surgery.



Figure 5 showing patients with advanced OA knees with severe functional limitations

Almost all the cases mentioned above requires surgery, but now surgery is not an option due to various reasons. Co-Morbid Conditions, Co-Mental and Emotional problems, Co-Musculoskeletal Problems hunt together in old age. Degeneration is seen in almost every joint! (Figure 6) . What are we going to do in these patients?



Figure 6 showing the generalized affection of Osteoarthritis

And further what are we going to do in geriatric patients, if patient has side effects for drugs, is unwilling for surgery, cannot afford surgery, not fit for surgery? Do we have answers for patients like these? Do you allow them to lead a condemned life? We need to introspect.



My foray into wholistic orthopedics

Case Study No 4: A 77 years old female, bilateral OA Knees, severe, tri-compartmental, Grade 4, conservative therapy done for many years and failed, suggested TKR, she flatly refused reasons being her sister in law had a serious complication after TKR and she did not want to undergo the same ordeal. She came to me for treatment and I was at my wit's end (Figure 7). She emphasized that I do something different for her. Necessity is the mother of invention, I revisited the ACR guidelines, I looked at the top of the pyramid, as bottom was not an option and it became clear to me that the answer was hidden there (Figure 8).



Figure 7 clinical photo and x-rays of a 77 years old patient with advanced OA knees who did not opt for surgery but opted for wholistic treatment

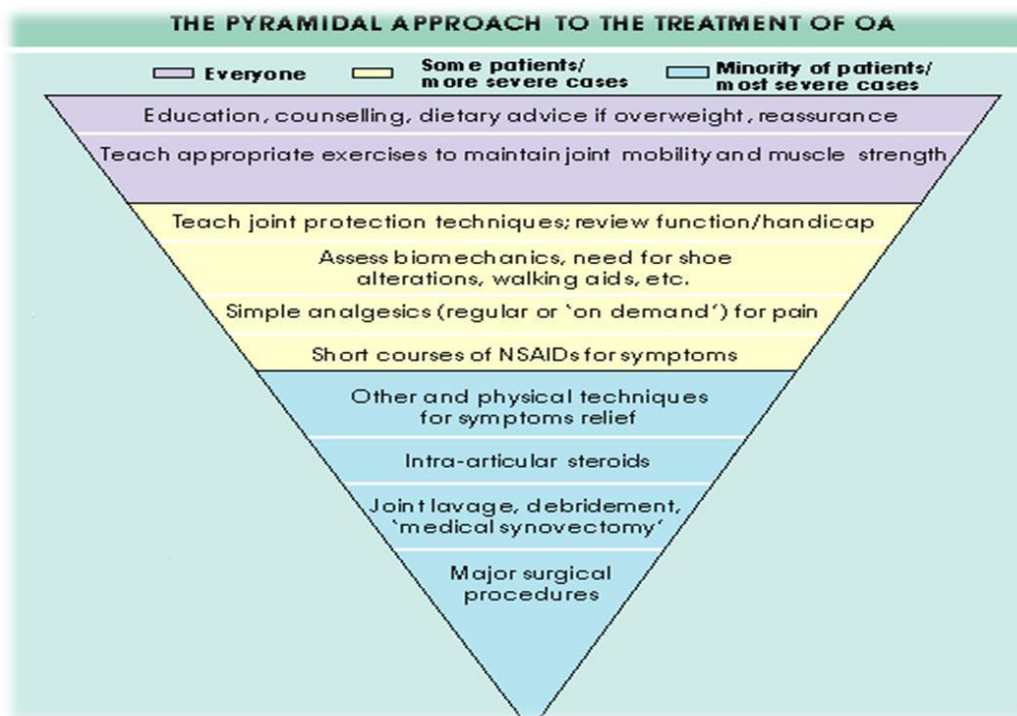


Figure 8 reverse pyramidal depiction of the various forms of treatment of OA knees

I revisited ACR Guidelines - Components of Multimodal OA Treatment (Atman et al., 2000). Then it stuck to me that what I was looking for was a suitable exercise regimen for OA Knees. and it had to be Yoga and Orthopedics. I introduced Yoga therapy to this 77 year old female patient (Figure 7). Results were astounding. It is 15 years now and the patient is doing well even to this date. Thus was born "Holistic Orthopedics"



Yoga and Orthopedics

Then I started introducing yoga to common orthopedic problems and the results were very good. From then on I changed from conservative to holistic treatment. Extensive Research followed I conducted one of the largest Randomized Controlled Trial on over 250 patients of OA Knees, received the best research award in 2012. The research then extended to neck pain, osteoporosis, low backache and even fractures (Ebnezar et al, 2011; 2012; 2012). My research on role of yoga in fracture treatment created a big buzz. That was for the first time yoga was tried for acute fractures, my paper was lapped up by Journal of complementary and Alternative Medicine (Oswal et al, 2011).

From Holistic to Wholistic

During the treatment I found that elderly patient were just not suffering from pain, they were full of fear, anxiety, mental and emotional turmoil, financial crisis. Most of them had co-musculoskeletal conditions, co-morbidities and already were taking many drugs. Most of them were victims of failed treatment. So most of them suffered as a whole, I thought that the first letter of Whole is WHO. And WHO has defined health (Figure 9) as “a state of complete physical, mental, social, and spiritual well being and not just the absence of a disease of infirmity”(WHO, 2006). My concept of treatment was the same, so I changed the name from “holistic” to “Wholistic”



Figure 9 the WHO concept of Health

Health an ancient Indian concept

Then I realized that this body, mind, and spirit concept was described by Indian sages 5000 years back. WHO had repackaged our Ancient Discovery as its own in 1956. Hence definition of health is an Indian Concept and yoga was the missing link.

Primary aim of Orthopedic Treatment in Geriatrics is different

It is return of function. In patients with co-morbidities, return to independent life. This is to maintain the dignity in elderly, as quality is more important than quantity of life. When patients lose independency, they may lose their will to live. Prevention of further deterioration and recurrence is vital. Can these be achieved with the conventional approach? We need a different approach to GOP's - an integrated approach. We need a more broad based approach in GOP a change from unidimensional approach (Adults) to multidimensional approach (Geriatrics). In young, it is most of the times, just Musculoskeletal and in elderly, most of the times it is more than Musculoskeletal!

Approach and management to an ageing person cannot be the same as in adults. The problem is multifactorial in elderly. We need to understand the challenges associated with ageing, we cannot use the same conventional approach. We need to take into account the peculiar challenges associated with ageing patients. We need a paradigm shift from conventional to wholesome, person centric to disease centric, from a solo player to a team player. We need to seek help and liaise with other specialists, we need to stabilize the patient medically, then post-operatively, we need to rehabilitate them faster and mobilize them quickly.



A geriatric orthopedic surgeon cannot manage alone; he has to work with a team of physiotherapists, anesthesiologist, endocrinologists, and geriatricians.

Geriatric orthopedic practice is broad based and both traumatic and non-traumatic conditions needs a different approach, A geriatric Surgeon needs to have a specialized surgical and non-surgical training and skills, he needs to learn patient management than just disease management. He needs to develop human, diagnostic and treatment skills.

Geriatric Patient needs a humane doctor, a doctor who listens, empathizes, shows compassion and kindness and most importantly a doctor who understands their unspoken language I needed to allay their fears and tension, increase compliance, establish a rapport, and reduce stress. I could not find any drugs or surgical techniques to do this. Then I prayed god to give me the answers. Then it struck to me that all that was needed were few basic human skills, I incorporated them into my regular treatment plan, concept changed from disease centric to human centric, and the whole body concept was born.

Now the moot point is Wholistic Orthopedics an ideal way to treat a geriatric orthopedic patient?

As you pass through the 4 phases of life, lots of things change. A GOP usually does not have a single disease, He has a plethora of problems-both Non-Orthopedic and Orthopedic, Co MS Problems, Co-Morbid problems and Co-Mental problems.

There are several limitations of conventional treatment methods in geriatric orthopedics. Why? Any orthopedic problem in an elderly is not merely an orthopedic problem; it is associated with many non-orthopedic problems to varying degrees. Merely trying to fix an ortho-problem with drugs or surgery like in young is an invitation to disaster. If only conventional treatment techniques are applied to geriatric orthopedic problems it will help us *to win the battle but not the war!* The disease may be overcome but the patient may succumb!

9 Peculiar Geriatric Orthopedic Problems that challenges the Conventional Treatment Methods

Problem 1: Co-Morbid Conditions - Associated medical problems like diabetes, hypertension, IHD, obesity, COPD, dementia etc poses a big problem in the management.

Problem 2: Co-Musculoskeletal Problems: Chronic orthopedic problems in elderly hunt together like neck pain, frozen shoulder, low back pain, osteoporosis, osteoarthritis, heel pain and fractures in the elderly (Wrist, Spine, Hip etc)

Problem 3: Co-physical Problems like failing eyesight and vision, hearing, balance, co-ordination etc makes them more prone for falls.

Problem 4: Co-Mental Conditions like depression, dejection, anxiety, sleeplessness, boredom, irritability, loss of memory, fear of death and behavioral changes, can make the best of treatment ineffective.

Problem 5: Co-Social Problems: like retirement blues and many are confined to old age homes.

Problem 6: Co-Family Problems: due to bereavement, loneliness, desertion, separation etc

Problem 7: Co-Financial Problems: Financial life of an elderly citizen is in a mess due to a variety of reasons.

Problem 8: Co-Agency Problems: dumped by government and insurance agencies. All these leads to insecurities and worries which will adversely affect the treatment.

Problem 9: Stress: Every aspect of orthopedic related problems increases the stress in old age. Fractures and diseases increase the already existing stress levels, surgery increases the stress further, diagnosis, treatment, and investigations and cost of the treatment also increases the stress. We are failing to acknowledge that it is stress all the way in old age. Pre-existing stress, newly created stress and cumulative stress plays havoc on the old age patients. Stress will not allow the elderly to regain the normalcy.

All these 9 peculiar geriatric orthopedic problems make old age a curse and the patient suffers as a whole. Is the conventional therapeutic approach of drugs, surgery, and physiotherapy enough in geriatric orthopedic patients? In GOP our approach, both diagnostic and therapeutic, is found wanting. Among the drug based Non-pharmacological, surgery or wholistic approaches which are better? Does the answer lie in going wholistic?



Limitations of treating geriatric patients with mainly drugs?

Drugs–Damages the Stomach and the GI Tract causes ulcers (Griffin, 1988; Gabriel et al, 1991) bleeding, it can damage the kidneys (Garella & Matarese, 1984) and liver too. And moreover a geriatric patient may already be taking too many drugs for ailments like diabetes, hypertension, IHD, obesity, COPD, dementia etc

Surgery–What are the Role, problems and limitations in surgery?

Surgical procedures are very effective in severe cases or when other treatment methods fail. Are we aware, ready and trained to face the peri-operative, post-operative, and pre-operative challenges of geriatric orthopedic surgery?

Is Wholistic Orthopedics relevant to Geriatric Orthopedics and Orthopedic Practice in today’s times?

Look at the toxicity profile in therapeutic OA modalities (Figure 10). It clearly shows that drugs and surgery are high on toxicity, education and exercises are low on toxicity. They are the least harmful treatment options and can be advised to all stages of arthritis in almost everyone.

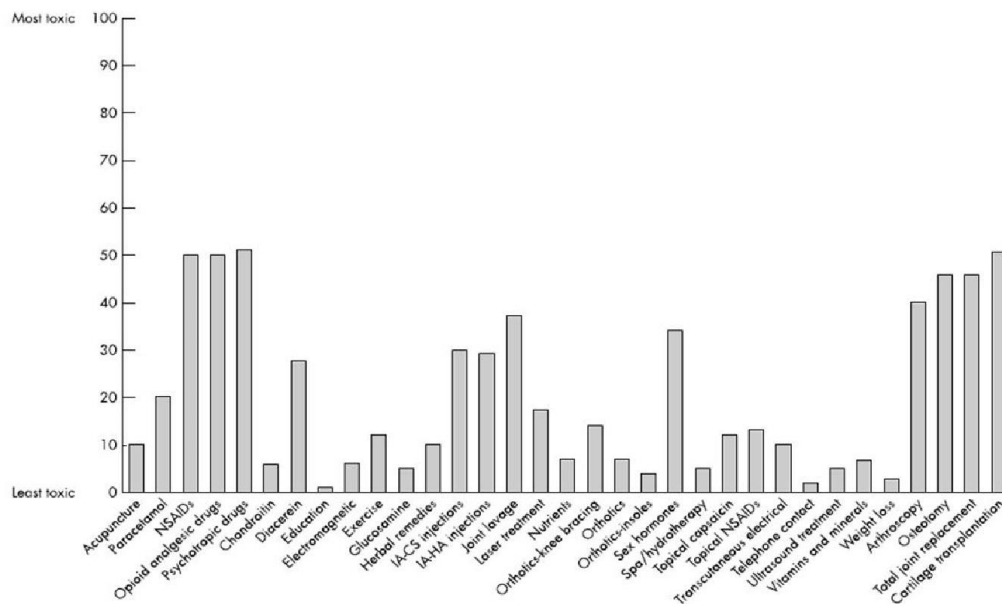


Figure 10 toxicity profile of the treatment modalities based on expert opinion (23 experts)

How to make Conventional Treatment Methods more effective in Geriatric Age Group?

We have understood the concept of WHOLE- about WHolistic orthopedics. Who is a Human Being? Human=Body, Being=Soul (Energy). We are not just skeletons and we have 5 layers of existence (Figure 11).

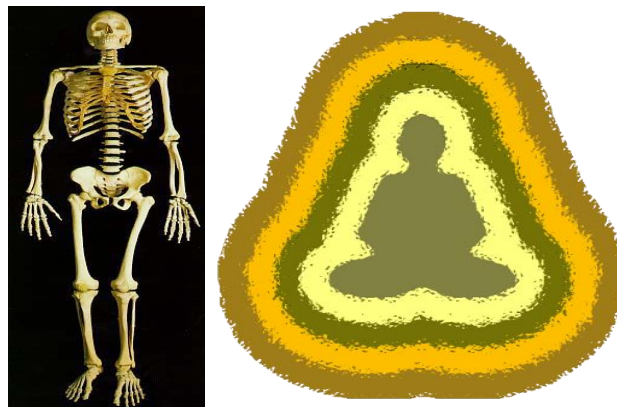


Figure 11 we are not skeletons but are a 5 layered human beings

A geriatric patient suffers as a whole involving physical, mental, social, and emotional. We have very effective conventional treatment methods but not complete, what is the missing link? Drug therapy is not very safe and already they are on many drugs. Surgery is reserved only for a few with definite indications. I realized that all the treatment methods needed to treat are already there. They were either dangerous or becomes ineffective due to the 9 peculiar geriatric problems mentioned previously. So we needed something safe and different.

Is the missing link – The "Human Therapy?"

I desperately looked for answers. It dawned on me that what I was looking for is already there within us. When a senior citizen comes for treatment, we need to do adopt this approach, talk to them with kindness, listen to their problems with empathy, give them a loving touch, hug, and then execute the treatment plans. The treatment will not only become effective, you will have a patient who is ready to die for you, I incorporated all these into my treatment, needless to say I have emerged very successful and it is a win-win situation.

Human Therapy-does adding these enhance the outcome of geriatric treatment methods? Love, kindness, understanding, patience, empathy. I have no better word to describe these, hence coined the term "Human Therapy."

WHOListic Orthopedics is a simple human being and not just skeleton based approach. This begins with the talk and may end up with surgery! It is a 12 modalities approach (Figure 12):

1. Human therapy
2. Proforma approach
3. Judicious drug therapy
4. Integrated physiotherapy
5. Therapeutic Exercises
6. Mind body Exercises
7. Relaxation therapy
8. Education therapy
9. Diet therapy
10. Supportive Therapy
11. Reversal Therapy
12. Surgery



Figure 12 showing the 12 steps wholistic treatment for geriatric orthopedic problems

Now let us analyze each step in greater detail:

Wholistic Therapy Modality 1: Human Therapy

Substituting empathy for sympathy and consists of the following options, talk, listen, touch, hug and music Therapies

Human Therapy 1: Talk Therapy Tongue is mightier than a sword. Everything is in the talk that makes or break. Talk smoothly, caringly, lovingly. Everything is in the talk, patients relate to you better and a sweet talking doctor is more popular

Beck's Talk Cognitive Therapy – is very successful in applications in chronic pain in elderly (Beck et al, 1983). Aim: Is to Identify and change maladaptive thoughts

- **First sessions:** therapist explains negative cognitions contribute to distress
- **Middle Sessions:** identify, evaluate, and replace negative automatic thoughts with more positive cognitions.
- **Final Sessions:** solidify gains, focus on prevention of recurrence.

Human Therapy 2: Listen Therapy is very effective in geriatric orthopedic practice. Why? Most of the patients just want their doctors to listen, there are lots of things going on in their mind, and they want someone especially their doctors to just listen. Once they empty their minds, half of our job is done as they feel relieved Hence we need to develop the art of whole body listening and not just ear listening

Listening is not the same as hearing. Hearing refers to the sounds that you hear, listening requires more than that. It requires focus, paying attention not only to the story but how it is told, the use of language and voice, and how the other person uses his or her body. In other words, it means being aware of both verbal and non-verbal messages. Your ability to listen effectively depends on the degree to which you perceive and understand these messages.



Benefits of Listening

- **Respect:** When you listen with full attention, you are communicating respect and by offering speakers respect, you gain theirs.
- **Airtime:** If you listen first, others are more likely to return favor, because of stress, self-absorption or other reasons, will use another person's ear and not return the favor
- **Information:** Attentive listening helps you learn more about your patient, and knowing more about patient is helpful in treating them.
- **Increased Likability:** People like people who listen. You may also find that as you listen to people more, *you like them* more.
- **Better Relationships:** Listening creates a feeling of goodwill in intimate and professional relationships. The more you listen without judgment, the more freedom speakers have to find their own solutions to problems.
- **Greater Clarity:** Careful listening helps you avoid some of the confusion, misunderstandings, and conflicts that are common in conversations (Steil, & Bommelje, 2004).

Human Therapy 3: Therapeutic Touch - Delores Krieger (1988) developed and standardized the technique in the 1970s. It is a contemporary interpretation of several ancient laying-on-of-hands healing practices. This standardization facilitates research and evaluation of treatment effects.

Therapeutic Touch- Infield Energy Therapy

National Center for Complementary and Alternative Medicine (NCCAM), Categorized it as a bio-field therapies - techniques to affect energy fields that surround and penetrate human body and NCAAM notes that, although scientists are studying these phenomena, the existence of such fields has not yet been definitively proven.

What is Therapeutic Touch?

Therapists place their hands on or near their patient's body with the intention to help or heal, consciously directing, or modulating an individual's energies by interacting with his or her energy field. The focus is on balancing the energies of the total person and stimulating the body's own natural healing ability rather than on the treatment of specific physical diseases.

Therapeutic Touch is based on balancing of the human energy systems. The human being is an open energy system composed of layers of energy, it is in constant interaction with self, others, and environment. Illness is an imbalance in an individual's energy field. Clearing or balancing the energy field promotes health and all humans have natural abilities to heal and enhance the healing in others.

Techniques of Therapeutic Touch:

Center them in the present moment and bring them to calm, quiet state of consciousness. Assess the client's energy field, clear and mobilize the client's energy field, direct energy to achieve wholeness, and balance the field, evaluate, and close the Treatment, ask for feedback and answer client questions.

Therapeutic Touch – Is it a treatment method by itself?

Is not a substitute for medical treatment, it does complement conventional medical care, supports the person's body to be in the best condition to heal. It is beneficial with other therapies - acupressure, massage, imagery, bio-feed back, and psychotherapy. Therapeutic touch does not attempt to cure the disease. It stimulates the body's natural healing process, deep relaxation response, reduction of pain, anxiety and faster wound healing. The goal of therapeutic touch is to assist the recipient in tapping into their own healing process, to restore wholeness and wellbeing at the physical, emotional, mental, and spiritual levels of the person.

It promotes health and wellbeing and eases the dying process. Patients who are undergoing chemotherapy or radiation have found it helpful in reducing side effects of treatment; others have seen reduced feelings of anxiety or grief. It can benefit people of all ages and all states of health or illness, as well as plants and animals. This therapy is generally very safe. But precautions need to be taken with pregnant women (since there is more than one energy field), and people with some forms of mental illness

What does the research show?

Early Therapeutic Touch studies reported by Heidt (1981) showed efficacy in muscle relaxation, stress and anxiety reduction, Later studies identify physiological effects (pulse amplitude, BP, pulse, and temperature), as well as subjective measures, such as stress, time perception and self-assessment of health.



What is the difference between Therapeutic Touch and Healing Touch?

- Therapeutic Touch is a specific energy technique developed by Dolores Krieger.
- Healing Touch is a collection of techniques developed and compiled by Janet Mentgen in the early 1980's.

Human Therapy 4: Hug Therapy

There is a very famous Bollywood movie, Munnabhai MBBS, in which the hero Sanjay Dutt is known for his famous jappi (hugs). Here he who is not a doctor becomes more famous than a doctor by merely hugging all the patients who are admitted into the hospital. Patients feel considerable improvement in their conditions and recover and those who are on the verge of death bed also die peacefully. Research shows proper deep hugs, where the hearts are pressing together, the nurturing touch of a hug builds trust and a sense of safety. This helps with open and honest communication. Hugs can instantly boost oxytocin levels, which heal feelings of loneliness, isolation, and anger holding a hug for an extended time lifts one's serotonin levels, elevating mood and creating happiness

Benefits of Hugging

1 Hugs strengthen the immune system: Gentle pressure on the sternum and emotional well being activates the solar plexus chakra. This stimulates thymus gland which regulates/balances body's production of WBC'S, and that keeps you healthy and disease free.

2 Hugs boosts self-esteem: From the time we are born our family's touch shows us that we are loved and special. The association of self-worth and tactile sensations from our early years are still imbedded in our nervous system as adults. The cuddles we received from our mom and dad while growing up remain imprinted at a cellular level, and hugs remind us at a somatic level of that. Hugs, therefore, connect us to our ability to self love.

3 Effect on musculoskeletal systems: Hugging relaxes the muscles, release tension in the body, it can take away the pain, soothe aches by increasing circulation into the soft tissues.

4 Hugs balance out the nervous system: The galvanic skin response change in skin conductance and balances state in the nervous system - parasympathetic and sympathetic nervous systems.

5 Hug therapy is definitely a powerful way of healing sickness, disease, loneliness, depression, anxiety, and stress

6 Hugs teach us how to give and receive: there is equal value in receiving and being receptive to warmth, as to giving and sharing and it educates us how love flows both ways.

7 Hugs are so much like meditation and laughter: They teach us to let go and be present in the moment. They encourage us to flow with energy of life; it gets you out of your circular thinking patterns and connects you with your heart, feelings, and breath.

There is a saying by Virginia Satir (2001), a respected family therapist: A Formula of 4-8-12: We need 4 hugs a day for survival, 8 hugs a day for maintenance and 12 hugs a day for growth.

Hug Therapy is a Win-Win situation. The energy exchange between the people hugging is an investment in the relationship. It encourages empathy and understanding. It is synergistic, which means the whole is more than the sum of its parts: 1+1=3 or more! This synergy is more likely to result in win-win outcomes.

How does these "Human therapies" improve the efficacy of our Conventional Treatment Methods in geriatric practice?

It helps develop a rapport, soothes the nerves, allays tension and fear, compliance improves, it makes them more receptive, treatment becomes more effective, it helps develop a healthy bond, reduces stress. Litigation rate may also drop considerably.

Wholistic Therapy Modality 2 – For Whole body diagnosis – appropriate proformas are filled up by questioning the patients and their relatives and not just fill up investigations forms like CT scan, MRI etc even without proper examination of a patient. Proformas will help arrive at a proper complete diagnosis and investigations should be ordered only if necessary and that too after a thorough examination of the patient.

Wholistic Therapy Modality 3 - Judicious Drug Therapy: We should avoid giving the drugs like painkillers, muscle relaxants and other drugs indiscriminately keeping in mind that they can cause side



effects and toxicity that can be detrimental to the health of the geriatric patients and practice judicious prescription of appropriate drugs.

Wholistic Therapy Modality 4: Multimodal Integrated Physiotherapy: is a non-invasive treatment modality. It helps in pain relief, release of spasm and improves function.

Wholistic Therapy Modality 5: Therapeutic Exercises: form the mainstay of treatment in most of the musculoskeletal problems in old age. What would be the best choices? Body based exercises or mind body exercises like Yoga? The latter has a distinct advantage in managing these chronic patients. We all know that walking is the best form of exercise in old age. Walk, walk, and walk should be the advice for these patients. No vigorous exercises for them.

Wholistic Therapy Modality 6: Mind body Exercises:

But the moot point is these conventional exercises enough in geriatric orthopedic patients? Let us evaluate. High impact exercises, a big no, and low impact exercises, a big yes.

Case 1: Look at a typical presentation of an OA Knee – usually it is not just knee pains but could be associated with multiple co-morbidities and co-musculoskeletal problems. We just suggest them some knee strengthening and quadriceps strengthening exercises. Is this enough to tackle the entire spectrum of the disease?

Case 2: Look at a typical presentation of a neck pain in geriatrics – it is not just neck pain but could be associated with multiple Co-MS Problems. Is neck strengthening practices enough?

Case 3: Look at a typical presentation of a back pain in geriatrics – it is usually due to degenerative disc disease and degeneration will not just happen in the back but it affects almost all joints in the body including the neck. Is lumbar stretch exercises enough?

What type of exercises is suitable for geriatric patients? Well it should be simple, easy to do, low-impact exercises, indoor, improve the overall Co-Musculoskeletal conditions, improve gait, balance and coordination as they are more prone to falls. It should also help improve the co-morbid conditions and help reduce mental and emotional stress.

So which exercise choices provides all these, body based exercises or mind body based exercises?

If you make a choice of Mind Body Exercises (Luskin et al., 2000), it treats the diseases of the old age and stresses both. There are two options, the Chinese Tai Chi, and our own yoga. Now let us first evaluate the role of Tai-chi (Wang et al., 2008) in treating geriatric orthopedic problems.

Tai Chi Works for seniors

It is a very rich both martial and healing art. It helps to improve the balance, help range of motion and flexibility. As a slow and low impact exercises, these movements will put minimal pressure on the joints and tendons. It helps control pain, getting a better night's sleep, to cope with stress more effectively. Tai chi can also be a social activity and you may be able to form a group that practices together regularly.

Introducing a New 10 Steps Integrated Yoga Practice

Designed and developed by S-Vyasa, Bangalore the Integrated approach of Yoga Therapy (Nagarathna & Nagendra, 2008) called IAYT is an excellent scientific research based combination of tried and tested yoga practices that can be very effective in treating the common geriatric orthopedic problems without the fear of any side effects or complications. Table 1 shows us the different steps of IAYT. What



does Integrated Yoga Therapy do in geriatric orthopedic patients? It helps loosen and strengthen the entire body; asana improves posture, gait, balance, and co-ordination. Overall benefits it improves overall health, helps in mind and emotional relaxation, improves Co-MS Conditions, Co-Morbidities and Co-Mental Conditions.

Wholistic Therapy Modality 7: Relaxation Therapies are very important for mental and emotional well being of geriatric patients. Relaxation can be attained by Drugs like anxiolytics, sedatives, and anti-depressants or by simple non-drug therapies like proper breathing practices and meditation.

Wholistic Therapy Modality 8: Education Therapy: this includes the awareness of proper postural practices, understanding old age and alterations of daily living by lectures and counseling. Awareness has to be created about the disease like OA knees, appropriate adjustments in their life style, about the value of exercises like yoga and the value of healthy living. The advantage of all these would be that effect of the disease is reduced and it has a greater preventive role of further progression of the disease

Wholistic Therapy Modality 9: Diet Therapy: It is very important that patients need to be told about the importance of healthy diet. to avoid junk and oily foods, to take more of vegetables and fruits, to drink plenty of water, to expose themselves to sunshine and take good calcium rich foods etc to develop a healthy mind and body.

Wholistic Therapy Modality 10: Supportive Therapy like proper back belts, collars, knee caps etc. To wear proper footwear's and use walking sticks, walkers etc if situation warrants to reduces the load on the spine and weight bearing joints.

Wholistic Therapy Modality 11: Reversal Therapy Concept: It is very important to educate the patients to reverse all the disease non-modifiable risk factors like sedentary life styles, improper postures, improper dietary habits, lack of exercises, alcohol, smoking, drugs, stress etc which brought or aggravated the disease. Without attempting to undo it, treating like any other conventional problems is a recipe for failure. We need to educate them to stop all these vices and the disease will get that much better and also make the treatment methods employed more effective.

Wholistic Therapy Modality 12: Surgery: If all the approaches fail or if the conditions are severe then an indication for surgery arises and can then work wonders for the patient (Buckwalter & Lohmander, 1994).

Conclusion

Do we understand the baggage of old age? It is not only the musculoskeletal system but the entire body that has aged! Ageing spine and hips both hamper mobility, ageing liver – drug metabolisms altered, ageing kidney – drug excretion altered, aging GIT – GIT toxicity, aging CNS – depression and anxiety, Co-morbid conditions are in plenty and financial, social, and economic problems mar the effectiveness of the treatment. Drugs are no longer a safe option, surgery is a last option, strenuous exercises are ruled out, and managing co-morbidities is a challenge. So managing the geriatric orthopedic problems is difficult with the regular conventional treatment. Wholistic approach is the best way to manage most of these problems. Through various researches we have proved the efficacy of yoga based wholistic treatment methods in geriatric orthopedic problems. We have Level 1 evidence randomized controlled trials for OA knees, Neck pain, back pain, osteoporosis and even for fracture treatment of yoga based wholistic therapies.

A simple practical WHOlistic orthopedic practice from trauma to diseases would consist of:

- Geriatric Fractures and Trauma: Conventional treatment, meditation, relaxation, and breath regulation.
- Emergency Surgeries– Pre and post surgical integrated mind relaxation programs.
- If Surgeries are Elective: Pre-surgical and Post-surgical Rehab Program



- For Geriatric Orthopedic Diseases – Rehab Programs and failure of Rehab Program would warrant surgery.

Who is a good orthopedic surgeon? One who is a surgeon, psychologist, and physician and not just who knows how to operate. We need to change from the restrictive orthopedic approach to a more WHOLISTIC orthopedic approach of healing at the body, mind, and emotional levels. My concept of wholistic therapy involves human therapies, modern medicine and traditional treatment methods, reversal therapy, proforma therapy, to replace conservative treatment with rehab programs and surgery for failed rehab programs. This is an excellent concept in managing most of the geriatric orthopedic problems.

So is WHOLISTIC Orthopedics the right approach? Is it an alien concept or is it need of the hour? It is indeed the right approach and need of the hour! We need to desperately embrace that lost human traits in us and we need to treat our patients as human beings and not as just a MS system. We need to embrace WHOLISTIC orthopedics; this is what the WHO says too. We assume that our role is to fix the fractures, treat the diseases symptomatically, replace the joints, and hope everything falls in place. It is just wishful thinking, nothing happens automatically. We need to work on all the 5 layers of a human being systematically and individualistically. We have not been trained to do so and we need to train and practice WHOLISTIC Orthopedics. American Association of Orthopedic Surgeon's (AAOS) in their recent 2013 guidelines for Non-arthroplasty management of OA Knees (Broad of director: American academy of orthopaedic surgeons, 2013) have incorporated all my 3 studies (Ebnezar et al, 2011; 2012; 2012) on the role of yoga therapy in the treatment of OA Knees and have given a strong recommendation for this form of Wholistic treatment of OA Knees.

Table 1 Steps of IAYT

Steps	
Steps 1	Upper limb loosening practices
Step 2	Neck loosening practices
Step 3	Lower limb loosening practices
Step 3	Instant Relaxation Technique (IRT). Is a practice of relaxation done in 17 steps, from lying down position in Shavasana and tightening and releasing the whole body leading to relaxation?
Step 4	Strengthening exercises – Upper limbs
Step 5	Strengthening exercises – lower limbs
Step 6	Quick Relaxation technique (QRT) Is a guided relaxation technique to be done for 3 minutes in 3 phases of? Feeling of abdominal movements, synchronizing the abdominal movements with deep breathing, Chanting U Kara and Relaxing and energizing the body
Step 7	Asana – Standing, Sitting Asanas, Supine Asana, and Prone Asana.
Step 8	Deep Relaxation Technique. DRT is a guided-relaxation technique Lasts for 7 minutes, done in 3 phases. Relaxation - toes to head mentioning each part of body specifically, letting the body 'collapse' on the ground. Feeling of 'letting go', Chanting OM, Feeling of expansion through visualization of the limitless sky or ocean
Step 10	Pranaayama and Meditation

Physical Practices – Loosens and strengthens all the joints

Loosening exercises

Strengthening exercises

Asana - Endurance Exercises – Improves gait, posture, balance and co-ordination

Standing

Supine

Sitting



Prone
 Relaxation techniques – Helps release the feel good hormones
 IRT-Instant Relaxation
 QRT-Quick Relaxation
 DRT-Deep Relaxation
 Mental and Emotional Practices – reduces cortisol, increases serotonin
 Praanayama
 Meditation
 Counseling

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