Positive Psychiatry of Late Life

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POTENTIAL CONFLICTS OF INTEREST

No financial relationships with the pharmaceutical or other industries

Grants from the National Institutes of Mental Health and Aging

Royalty from publishing companies for books
LEARNING OBJECTIVES

• Learn the basic concepts behind healthy aging and Positive Psychiatry
• Understand ways of assessing and enhancing positive psychosocial factors
• Implement the strategies for successful aging
OUTLINE

• What is Healthy Aging?
• Wisdom and Aging
• Positive Psychiatry
• Age-Friendly Communities
“SILVER TSUNAMI” vs. GOLDEN WAVE

(United Nations, 2012)
Is This Healthy Aging?
Setting Five World Records at Age 100 Years

Does healthy (successful) aging include being in a wheel chair for most of one’s adult life?
Is This Healthy Aging?

President Franklin D. Roosevelt in a wheelchair, with his granddaughter
STEIN INSTITUTE FOR RESEARCH ON AGING

• The first Institute on Aging in a School of Medicine in the University of California system (1983)

• Currently 140 faculty members

• Three-Pronged Mission:
  ◦ **Research** – Focus on healthy aging
  ◦ **Community Outreach** - Monthly Public Lecture Series broadcast on UC-TV & YouTube;
    Monthly Newsletter: “Successful Aging”
  
  Several million hits on the website [aging.ucsd.edu](http://aging.ucsd.edu)

  ◦ **Research Training** for High School, Undergrad, Grad, Medical, Pharmacy students, & Fellows
SUCCESSFUL AGING EVALUATION (SAGE) STUDY

- To study 3 domains of aging (physical, cognitive, psychosocial) in a longitudinal study of a randomly selected community-based sample
- 2,000 home phone users in San Diego, ages 21-100
- Phone interview, Mail-in survey, Saliva sample, Unique focus on positive traits such as resilience, optimism, compassion, wisdom

Physical Health vs. Well-Being from Age 21 to 99 (N=1,546)

(Jeste DV, et al., Am J Psychiatry, 2013)
AGE AND SF-36: SCHIZOPHRENIA

The graph shows the relationship between age and SF-36 scores for individuals with schizophrenia. It compares physical and mental components of SF-36 across different ages (40 to 100 years). The data points are color-coded, with mental component in blue and physical component in red. The trend lines indicate a general decrease in SF-36 scores with age.
Well-being increases with aging

Average level of self-rated well-being in older adults with these serious illnesses was lower than that in matched healthy comparison subjects, but a sizable minority of the patients had scores in the normal range.

Well-being correlated with levels of resilience, optimism, and other positive traits (p < .001), but not with demographic or illness-related variables (Moore, et al., J Clin Psychiatry, 2013; Zlatar et al., Psychooncology, 2014; Palmer, et al., Schiz Res 2014).
Happiness in Schizophrenia

Healthy (n=127)  Schizophrenia (n=135)
BIOMARKERS ASSOCIATED WITH POSITIVE TRAITS IN A COMMUNITY SAMPLE

• Candidate gene SNP association study: Resilience was associated with SNPs in MAO-A, and optimism with SNPs in MAO-A, IL10, and FGG genes (Rana, et al., Am J Geriat Psychiatry, 2014)

• Higher levels of resilience and optimism, and lower levels of perceived stress were associated with lower levels of HOMA-IR and of some blood-based systemic biomarkers of inflammation
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PUZZLE: HUMAN LONGEVITY MAKES NO SENSE FROM DARWINIAN HYPOTHESIS OF SURVIVAL OF THE FITTEST

- Persons living to age 90 spend the second half of their life without fertility, and with increasing physical disability – i.e., with no fitness benefit to the species

- While human life-span continues to increase, the fertility-span and health-span have not increased

- In the wild, most of the larger animals don’t live long after losing fertility and becoming physically disabled
MISSION OF UC SAN DIEGO’S CENTER ON AGING: FINDING ANSWERS TO THE PUZZLE AND TO NEW QUESTIONS

• Some things MUST improve with human aging in order to compensate for the loss of fertility and of physical health - New questions:
  • What things improve with aging, and how?
  • How can human longevity be beneficial to the species?
  • How can we facilitate healthy aging?
Wisdom of Aging?

Rome – Dr. Rita Montalcini, a Nobel Laureate, on her 100th birthday: “My mind is sharper today than when I was 20.”
“I think I do science better now than I did when I was younger. In science, judgment is so important, and I now have a better understanding of which problems are important and which are not.”

--- Dr. Eric Kandel, Nobel Laureate (1921 -)
WISDOM OF AGING: PHENOMENA THAT TEND TO IMPROVE WITH AGING

• Subjective wellness, Satisfaction with life
• Positivity: Favoring positive emotions & memory
• Decisions that require experience
• Control of emotions
• Compassion, Empathy, Altruism
• Self-knowledge or insight

(Meeks & Jeste, 2009; Bangen, et al., 2013; Helmuth et al., 2003; Jeste et al., 2010; Grossman I, et al., 2010; Worthy DA, et al., 2011; Mather et al., 2004; Kennedy et al., 2004)
PUTATIVE NEUROCIRCUITRY OF WISDOM
(MEEKS & JESTE, 2009; JESTE & HARRIS, 2010)

- **Ant. Cing. Cortex:** Conflict detection
- **Ventro-medial PreFrontal Cortex:** Emotional regulation, Compassion
- **Dorso-lateral PreFrontal Cortex:** Cold cognition, Utilitarian choices
- **Amygdala:** Strong emotions such as fear
HOW DOES AN AGING BRAIN ALLOW FOR INCREASE IN WISDOM?

In adults who stay active physically, cognitively, socially:

- More neuronal networks, especially in the prefrontal region, are involved in performing a mental activity, to compensate for loss of synapses and neurons.
- New synapses (and even new neurons in specific brain regions) are formed.
- Emotional Positivity: With aging, amygdala and fronto-striatal regions become less responsive to stressful images and to negative emotions (regret).

(Mather, et al., 2004; Bangen, et al., 2012-13; St Jacques, et al., 2009; Brassen, et al., 2012; Gage, et al., 2002; Dennis & Cabeza, 2008; Eyler, et al., 2011; Bangen, et al., 2012)
• **Grandma Hypothesis of Wisdom:** When grandparents are involved in raising their grandchildren, those children live longer, are happier, and produce more children than the grandparents did – demonstrated in bottle-nose dolphins, killer whales, and humans (Lahdenpera," et al., Nature, 2004).

• **Evolution of Grandparent Genes in Humans:** Specific variants of genes CD33 (→ better immune function) & APOE (→ less amyloid in heart and brain) are more common in humans than in chimpanzees – did they evolve to preserve wise grandparents and delay their cognitive decline? (Schwaz, et al., PNAS, 2015)
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PROBLEMS WITH TRADITIONAL CONCEPTUALIZATION OF PSYCHIATRY

• Focus on mental illnesses & not on mental health
• Neglecting concepts of positive / protective factors, strengths, prevention, successful aging, and remission
• Because of mental illness stigma, patients and families prefer considering psychiatric disorders as neurologic disorders – e.g., Alzheimer’s disease, Other dementias
• We need a scientifically based positive approach, emphasizing Psychiatry’s role in enabling healthful behavior modification across the healthcare spectrum
RE-CONCEPTUALIZING PSYCHIATRY

• (A) Emphasizing well-being and recovery, and positive / protective psychosocial factors

• (B) Changing the focus from the type of patients we treat (those with mental illnesses) to our unique therapeutic skills (behavior modification) that can be applied to people with physical illnesses too

• Implications for Biology, Overall healthcare, and Psychiatric stigma

DEFINITION OF POSITIVE PSYCHIATRY

• Science and practice of psychiatry that focuses on study and promotion of mental health and well-being through enhancement of positive psychosocial factors relevant to mental or physical illnesses

2 META-ANALYSES

• **Optimism (83 studies):** associated with positive cardiovascular & cancer outcomes, physiological markers (e.g., immune function), pregnancy-related outcomes, pain & mortality (all p<.001)

• **Social Engagement (148 studies, N>300,000):** 50% increased likelihood of survival for subjects with stronger social relationships

Kaplan-Meier Survival Analysis According to Tertiles of Dispositional Optimism
PSYCHOSOCIAL INTERVENTIONS FOR OLDER SCHIZOPHRENIA PATIENTS

NIMH-funded RCTs showed significant improvement with manualized psychosocial interventions in older patients:

- Cognitive Behavioral, Social Skills Training (CBSST) (Granholm)
- Functional Adaptation Skills Training (Patterson)
- Vocational Rehabilitation (Twamley)
- Pedal for older Latino patients (Bucardo)
- Pilot work on Mobile Interventions (Depp)
GREY MATTER DENSITY

Increased MRI grey matter density in schizophrenia patients with Cognition Enhancement Therapy vs Supportive Therapy at 1 year

(Eack et al., Arch Gen Psychiatry, 67:674-682, 2010)
PSYCHOSOCIAL INTERVENTIONS IMPROVE BRAIN FUNCTIONING

• 2-month Mindfulness-Based Stress Reduction reduced pro-inflammatory NF-κB-related gene expression in circulating leukocytes

• Daily Meditation for 6 months increased telomerase activity; also greater white matter integrity on MRI with meditation

(Creswell et al. 2012; Jacobs et al. 2010; Caria et al. 2007; Vinogradov, et al., 2009; Tang et al., 2010; Eack, et al., 2010)
PSYCHOSOCIAL INTERVENTION

Brain on a treadmill?
• Addition to (and not a substitute for) current psychiatric practice

• Assessment of well-being, strengths, perceived stresses, and lifestyle – by completing forms in waiting room and at home

• Identification of treatment targets and proposed interventions

• Psychiatry in modern era: Use of technology; Community – it takes a village
POSITIVE PSYCHIATRY MOVEMENT

• Growing interest among psychiatrist and other mental health professionals in Positive Psychiatry – both junior and senior members of the profession

• New Section on Positive Psychiatry in the World Psychiatric Association (WPA)

• Establishment of Canadian Association of Positive Psychiatry

• Developing an APA Caucus on Positive Psychiatry
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STRATEGIES FOR HEALTHY AGING

- Diet – Calorie restriction, “Superfoods”
- Physical and Cognitive activity
- Social engagement and support
- Stress reduction – meditation, other ways
- Resilience, optimism, sleep hygiene
- Healthcare – therapeutic and preventive

FROM PERSONALIZED MEDICINE TO COMMUNITY WELL-BEING
AGE-FRIENDLY COMMUNITY

- Housing
- Transportation
- Outdoor spaces
- Social environment
- Community support
- Health and wellness services
AGE-FRIENDLY COMMUNITIES

- UK: Manchester; Canada: Halifax; US: Iowa city, Boston, Washington, DC, San Diego

- Focus on healthcare, lifestyle, technology, advocacy, intergenerational & volunteering activities

- Education & training
CONTRIBUTIONS OF HALIFAX: FOH & AGE-FRIENDLY COMMUNITY

• UC San Diego Think Tank on Healthy Aging --- International Think Tank
• Positive Psychiatry – WPA Section
• Positive Living Work Group
• Fountain of Health (FoH) Initiative
• Age-Friendly Community movement – Applying principles of CBT at individual & community levels
• Paper under review
PRESCRIPTION FOR HEALTHY AGING

**Dx:**
Cognitive impairment

**Rx:**
Donepezil

**Rx Plus:**
- Exercise 5 x week
- Fitbit
- Healthy Diet
- Sleep hygiene
- Meditation
- Reading
- Videogame
- Volunteering
SUMMARY AND CONCLUSIONS

• What things improve with aging, and how?
  Age-associated increase in wisdom is made possible by neuroplasticity, facilitated by active body & mind

• How can longevity be beneficial to the species?
  Wisdom of aging may enable humans to reach maximum life span (survival of self) and to transfer wisdom to younger generations (survival of species) – “Grandma hypothesis”

• How can we facilitate healthy aging?
  Promote optimal physical, cognitive, & psychosocial stimulation, with stress reduction + healthcare at individual and community levels = Positive Psychiatry of Aging