Lecture presented at the
2\textsuperscript{nd} Annual Holy Qur’an & Science Symposium
Masjid Baitul Rehman, Silver Spring, MD
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The Holy Qur’an &
Stress Management

CONTENT
✓ Educational Background & Experience
✓ Professional & Community Service
✓ Research Findings/Scientific Contributions
✓ Stress Disorders
✓ The Holy Quran & Stress
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Education Background & Academic Experience

- University of Bombay
  ➔ BS - Microbiology & Chemistry
  ➔ MS - Organic Chemistry ➔ Gold Medal

- Medical College of Virginia/VCU
  ➔ Ph.D. – Medicinal Chemistry
  ➔ Thesis: Anticancer compounds

- University of Pennsylvania
  ➔ Post-doctoral fellowship
  ➔ Neuro-pharmacology

- University of Pennsylvania Department of Psychiatry
  ➔ Assistant Professor
  ➔ Associate Professor

- USciences-PCP
  Department of Pharm-Tox
  ➔ Full Professor
  ➔ 1st Administrative Fellow
  ➔ Academic Administration ➔ Research & Graduate Studies

- Certificate ➔ Harvard Management Program
Research Background

Research Focus Areas:

✓ Depression, Aging, Neuro-degeneration, Addiction, Post-Traumatic Stress Disorder
✓ Thyroid dysfunction and mood disorders
✓ Behavioral pharmacology, neurobiology, endocrine
✓ Animal models of stress related disorders
✓ Study of brain NE, DA, 5-HT, GABA, Glutamate

✓ Research Funded by Grants ➔ Federal, Foundation, Industry
✓ Pedagogical Research
✓ 55+ Research Publications in Peer reviewed Journals
✓ 120+ Scientific Presentations ➔ Seminars, lectures, conferences, symposiums, panel discussions, etc.
✓ Visiting Professorship
# Volunteer & Professional Service

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Ahmadiyya Muslim Community
Served Lajna Imaillah in many capacities
Most Recent:
- National Sadr (2000-2010)
- Chair Khadijah Scholarship (since 2011)

AWSA
- President (2011-2014)

Humanity First
- Board
- Director, FHA program (2011-2014)

Editorial Boards
- Al-Hilal
- Muslim Sunrise
Scientific Contributions

3H-Nisoxetine: Targeting Norepineprine Sites

Norepinephrine Transporter Sites

Shanaz Butt
Why Research Norepinephrine (NE)?

- Released during stressful events
- Referred to as a Sympathetic Amine
- Also called a Stress Hormone
- Important for fight-or-flight responses
- Increases heart rate, increases blood pressure, releases glucose, increases blood flow to skeletal muscles, increases oxygen to the brain
- Important for concentration, alertness, mood disorders and sleep
- Found in many brain areas

Shanaz Butt
Loss of Norepinephrine transporter sites in Human Brain

Loss of NE begins in 4-5th decade of life

Loss of NE in Alzheimer’s Disease

Female with AD
Control

Shanaz Butt
What is Stress?

- Stress is a physiological response - protects the body and brain from perceived or real dangers
- Stress causes mental, physical, spiritual tension
- We cannot control what happens to us but we can control our REACTION to the event
- ~75 % of primary care visits are for stress-related problems
- Cost of stress - $407 billion/year in term of health problems and lower productivity
Stress Related Disorders

- Depressive Disorders
- Post-traumatic Stress Disorder
- Anxiety Disorders
- Obsessive Compulsive Disorder
- Sleep Disorders
- Eating Disorders
- Addiction
- Neurodegenerative Disorders
- Accelerated aging of the Brain
Translational Research: Animal Models → Stress Disorders

Stress is Life!
Life is Stress!

From Bench → To Bedside
Stress leads to Weight Loss & Ulcers in Wistar Kyoto Rats

Before Stress

After Stress

Shanaz Butt
“Depressive” Behavioral Measures

Open Field Test

Forced Swim Test
Fig. 25. Dorsal aspect of the brain of the rat.

Fig. 26. Ventral aspect of the brain of the rat.
Have you experienced any of these responses in your life?

- Blood Pressure
- Heart/Pulse Rate
- Headaches
- Problems with Sleep
- Digestive Problems
- Pain in various body parts
- Increased Sweating

- Loss of Weight
- Weight Gain
- Increased Worry/Fear
- Loss of Concentration
- Frequent Mood Swings
- Loss of Temper/Anger
- Violent behaviors

*We shall test you with something of fear and hunger, some loss in goods, lives and the fruits of your toil, but give glad tidings to those who patiently persevere* (2:156).
Prescriptions in The Qur’an (1500 years ago)

Stress, despair, depression- approached from Islamic view can be controlled by guidance from the Holy Qur’an.

- *O humanity! There has come to you a direction from your Lord and a cure for all [the ills] in men’s hearts - and for those who believe, a Guidance and a Mercy* (10:58).
- *And if anyone puts his trust in Allah, sufficient is (Allah) for him. For Allah will surely accomplish His purpose* (65:4).
- *Those who believe, and whose hearts find comfort in the remembrance of Allah. Aye! It is in the remembrance of Allah that hearts find peace* (13:29).
- *Call on Me; I will answer your prayer* (40:61).
- *Seek help through patience and prayer* (2:46).
Islamic Prayer integrates mindfulness, mental precision, affirmation, devotion, and stretching. Done five times a day for a lifetime, it has healthy effects on body and soul.

Ablution protects the body from skin infections and reduces risk of skin cancers.

Massaging parts of the body during ablution stimulates blood flow through the body, especially to brain.

Ablution protects from tooth decays, eye infections, sinusitis, allergic rhinitis and many bacterial infections.
Science of Sala’at Postures

- Qiyam: arms folded as a slave respectful before master.
- Qa’adah (Jilsah) – assuming the sitting position after sajdah. The heel of right foot curled up and weight of leg and part of body rests upon it. This aids detoxification of the liver and assists in digestion.

Shanaz Butt
The Scientific Benefits of Sajdah

They fall down on their faces weeping, and it increases humility in them (17:110).

In Sajdah, the height of humility & helplessness is reached.
- Prostration is mentioned in Qur'an 92xs in 32 Surahs.
- Prophet Muhammad (saw) said: The closest position to God is at the time of Sajdah.
- Sajdah is the only position where brain is lower than the heart and blood gushes to the brain. In all other positions brain is above the heart when it has to work against gravity to send blood to the brain.
- Knees form a right angle, allow stomach muscles to develop and prevents flabbiness in midsection. Maintains proper position of fetus in pregnant women. Reduces high blood pressure. Increases elasticity of joints.
Research Findings on Sajdah

- Repetition of Sajdah cleanses the respiratory, circulatory and nervous systems. Balances our sympathetic and parasympathetic nervous systems.
- Researchers who study eastern religions report that a person who activates all seven nerve pathways at least once a day (in Sajdah) can remain well balanced emotionally, physically and spiritually.
- Same techniques of position and breathing exercises that are taught in popular Yoga, Tai Chi, and other fitness classes.
  - Physical: exercise, relaxation techniques, diet
  - Mental: meditation, positive thinking, sounds
  - Emotional: behavioral modification, faith, prayer
God in the Headlines

- Medical Research on the power of prayer has doubled in past 10 year (National Institute for Healthcare Research).
- The NIH - which refused to review studies with the word prayer in it 4 years ago - now funding such studies.
- Reports consistent in suggesting measurable health benefits with prayer or spiritual interventions.
- Columbia, Penn, Harvard, UC Irvine are centers where research is ongoing.
The Ultimate Stress Reducer!

- Spiritual people cope better with life.
- People bond when they hold common beliefs. Religion provides social support.
- Praying gives strength to deal with day-to-day stress. It offers you time alone – helps in reducing mental stress.
- According to *British Journal of Health Psychology*, praying can reduce your risk of developing depression and anxiety.
- According to Andrew Newberg, U Penn, praying boosts levels of dopamine, the ‘happy-reward hormone’ in your brain.
- Praying reduces one’s ego, making you more humble, less greedy for material things and a better person.
- Praying improves immunity and healing. By minimizing ill effects of stress and environmental factors, prayer helps your body heal better and age more efficiently.
Holy Qur’an & Stress Management

- Allah in His Mercy emphasizes the importance of Prayers ~360 Xs. So, leave your worries behind 5x day.
- Turn your worry into prayer and each prayer into an action plan.
- Remember that our abilities are limited but Allah’s are NOT! Do your best and leave the rest to God!
- Prophet Muhammad (saw), found a bedouin leaving his camel without tying it. He asked the bedouin, "Why don't you tie down your camel?" The bedouin answered, "I put my trust in Allah." The Prophet said, "Tie your camel first, then put your trust in Allah" (Tirmidhi).
- Count your blessings! Being grateful maintains a positive attitude in the face of daily challenges. The cup is half full; not half empty!
- Remember to take your Stress Vitamins. Can be taken multiple times a day! Alhamdolillah! Allaho Akbar! Subhan Allah! Masha Allah! Insha Allah! Astaghfir Allah!
The Holy Qur’an directs attention towards science time and time again rather than evoking prejudice against it. The Qur’an has never advised against studying science, lest the reader should become a non-believer; because it has no such fear or concern. Lecture by Hadhrat Musleh Maoud, Islamia College, Lahore, March 3, 1927.

Just as a blind man has no idea of colors, so also we have no idea of the manner by which the all-wise God perceives and understands all things (Isaac Newton).
References


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