

A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

A review article on treatment of Unmada according to Charaka Samhita with modern correlation

Category: Academic Research, Vol. 01, Issue 04, October 2024 Published on: October 30, 2024

Vol.01, Issue-04, October 2024

Author: Dr. Manish Singh Tomar, MD, PhD Ayurveda

Abstract

Unmada, as described in the ancient Ayurvedic text Charaka Samhita, encompasses a range of mental disorders characterized by derangement of the mind, intellect, consciousness, knowledge, memory, desire, manners, behavior, and conduct. Acharya Charaka provides a comprehensive analysis of Unmada, including its etiology, classification, pathogenesis, clinical features, prognosis, and therapeutic approaches. This article explores the Ayurvedic understanding of Unmada as presented by Charaka, correlating it with modern psychiatric concepts. By integrating traditional wisdom with contemporary medical science, we aim to enhance the understanding of mental health disorders and promote holistic management strategies.

Introduction

Mental health disorders have been recognized as significant health concerns affecting individuals globally. In Ayurveda, the ancient Indian system of medicine, mental disorders are collectively referred to as *Manasa Roga*, with *Unmada* being a prominent condition. The term "Unmada" is derived from the Sanskrit roots "un" (upward or excessive) and "mada" (excitement or intoxication), indicating a state of mental derangement or insanity.

Acharya Charaka, one of the principal contributors to Ayurvedic literature, provides an elaborate exposition on Unmada in the *Chikitsa Sthana* (treatment section) of the *Charaka Samhita*. He describes various types of Unmada, their causes, clinical manifestations, and therapeutic interventions. Understanding these concepts is crucial for practitioners and scholars aiming to integrate Ayurvedic principles with modern psychiatric practices.

In modern medicine, mental disorders encompass a wide array of conditions, including schizophrenia, bipolar disorder, depression, anxiety disorders, and psychosis. Many of these conditions share similarities with the descriptions of Unmada in Ayurvedic texts.

This article delves into the Ayurvedic concept of Unmada as presented by Acharya Charaka, providing a detailed analysis and correlating it with contemporary psychiatric understanding. Through this synthesis, we aim to highlight the relevance of Ayurvedic insights in the modern context and promote a holistic approach to mental health care.

Etiology (Nidana) of Unmada

Ayurvedic Perspective

Acharya Charaka identifies multiple causative factors for Unmada, emphasizing both endogenous (internal) and exogenous (external) origins. The primary etiological factors include:

1. Internal (Nija) Causes



A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

- Dosha Imbalance: Vitiation of the three doshas—Vata, Pitta, and Kapha—due to improper diet and lifestyle.
- **Mental Factors**: Excessive emotions such as fear (*Bhaya*), grief (*Shoka*), anger (*Krodha*), and overexcitement (*Harsha*).

• Dietary Factors:

- Consumption of incompatible foods (Viruddha Ahara).
- o Intake of unclean, impure, or contaminated foods (Dushta Anna).

• Lifestyle Factors:

- Violation of moral and ethical codes.
- o Disrespect towards deities (Deva), teachers (Guru), and learned individuals (Dvija).

Shloka Reference:

• "Viruddha-dushta-ashuchi-bhojanani pradharshanam deva-guru-dvijanam | Unmada-hetur bhaya-harsha-purvo mano'bhighato vishamas cha cheshtah ||" (Verse 4)

2. External (Agantu) Causes

- Supernatural Influences: Possession or affliction by divine beings, demons, ghosts, or spirits (Bhuta, Graha).
- Past Life Actions: Wrongdoings in previous lives leading to karmic repercussions.

Shloka References:

• "Deva-rishi-gandharva-pishacha-yaksha-raksha-pitrinam abhidharshanani | Agantu-hetur niyama-vratadi mithya-kritam karma cha purva-dehe ||" (Verse 16)

Pathogenesis (Samprapti)

- **Dosha Vitiation**: The causative factors lead to the vitiation of doshas, which in turn contaminate the mind (*Manas*), intellect (*Buddhi*), consciousness (*Sattva*), and memory (*Smriti*).
- Affliction of the Heart: The vitiated doshas affect the heart (Hridaya), considered the seat of consciousness.
- **Obstruction of Mental Channels**: The channels carrying mental faculties (*Manovaha Srotas*) get obstructed, leading to disturbances in mental functions.

Shloka References:

• "Tair alpa-sattvasya malah pradushtah buddhir nivasam hridayam pradushya | Srotamsy adhishthaya manovahani pramohayanti ashu narasya chetah ||" (Verse 5)

Modern Correlation

- Biological Factors:
 - o Neurochemical imbalances involving neurotransmitters like dopamine, serotonin, and norepinephrine.
- Psychological Factors:
 - o Stress, trauma, and emotional disturbances leading to mental disorders.
- Social Factors:
 - Social isolation, stigma, and family dynamics contributing to mental health issues.
- Genetic Predisposition:
 - Family history of mental illness increasing susceptibility.

Classification of Unmada

a JuBha

AYUBHA JOURNAL BY AYURVED BHARATI

A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

Ayurvedic Perspective

Charaka classifies Unmada into five types based on the predominant dosha and origin:

- 1. Vataja Unmada: Caused by vitiated Vata dosha.
- 2. Pittaja Unmada: Caused by vitiated Pitta dosha.
- 3. Kaphaja Unmada: Caused by vitiated Kapha dosha.
- 4. Sannipataja Unmada: Caused by simultaneous vitiation of all three doshas.
- 5. Agantuja Unmada: Caused by external factors like possession by supernatural entities.

Shloka Reference:

• "Samudbhramam buddhim anah smritinam unmadam agantu-nijottham ahuh | Tasyodbhavam panchavidham prithak tu vakshyami lingani chikitsitam cha ||" (Verses 8)

Clinical Features Based on Dosha Predominance

1. Vataja Unmada

• Etiology:

o Excessive fasting, overexertion, exposure to cold, consumption of dry and light foods.

• Symptoms:

- o Irrelevant speech, inappropriate laughter, singing, dancing, weeping.
- o Physical signs include emaciation, roughness, reddish discoloration.

• Shloka Reference:

• "Ruksha-alpa-shita-anna-vireka-dhatu-kshaya-upavasair anilo'tivriddhah | Chinta-adi-jushtam hridayam pradushya buddhim smritim cha upahanti shiqhram ||" (Verse 9)

2. Pittaja Unmada

• Etiology:

- o Consumption of hot, spicy, sour, and pungent foods.
- o Anger, jealousy, exposure to heat.

Symptoms:

- o Irritability, aggression, nudity, anger, hallucinations.
- Preference for cold environments and food.

• Shloka Reference:

 "Ajeerna-katu-amla-vidahya-shitair bhojyaih chitam pittam udirna-vegam | Unmadam atyugram anatmakasya hridi shritam purva-vad ashu kuryat ||" (Verse 11)

3. Kaphaja Unmada

• Etiology:

o Overeating, lack of physical activity, excessive sleep.

Symptoms:

- Lethargy, excessive sleep, lack of interest, incoherent speech.
- o Physical signs include heaviness, pale complexion, nausea, salivation.

Shloka Reference:

o "Sampuranaih manda-vicheshtitasya so'shma kapho marmani sampravriddhah | Buddhim smritim cha upahatya chittam pramohayan sanjanayed vikaram ||" (Verse 13)

a UBha

AYUBHA JOURNAL BY AYURVED BHARATI

A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

4. Sannipataja Unmada

• Etiology:

o Vitiation of all three doshas.

• Symptoms:

Combination of symptoms from all doshic types.

• Prognosis:

o Considered severe and difficult to treat.

• Shloka Reference:

o "Yah sannipata-prabhavo'ti-ghorah sarvaih samastaih sa cha hetubhih syat | Sarvani rupani bibharti tadrik viruddha-bhaishajya-vidhir vivarjyah ||" (Verse 15)

5. Agantuja Unmada

• Etiology:

o Possession by supernatural entities such as deities, ancestors, spirits, or demons.

Symptoms:

- o Variable, depending on the possessing entity.
- o May include sudden onset of abnormal behavior, hallucinations, and delusions.

• Shloka References:

- "Deva-rishi-gandharva-pishacha-yaksha-raksha-pitrinam abhidharshanani | Agantu-hetur niyama-vratadi mithya-kritam karma cha purva-dehe ||" (Verse 16)
- o "Amartya-vag-vikrama-virya-cheshto jnana-adi-vijnana-bala-adibhir yah | Unmada-kalo'niyatah cha yasya bhutottham unmadam udaharet tam ||" (Verse 17)

Modern Correlation

- Vataja Unmada: May correlate with conditions involving psychomotor agitation, such as mania or schizophrenia with disorganized behavior.
- **Pittaja Unmada**: Resembles conditions with aggressive and violent behavior, possibly acute psychosis or bipolar disorder with mania.
- Kaphaja Unmada: May correspond to depressive disorders characterized by lethargy and lack of motivation.
- Sannipataja Unmada: Reflects complex psychiatric conditions with mixed symptoms, potentially schizoaffective disorders.
- **Agantuja Unmada**: Can be associated with acute psychotic episodes, dissociative disorders, or culturally bound syndromes involving spirit possession.

Clinical Features (Lakshana) of Unmada

General Symptoms

- Disturbance in intellect (Dhi Vibhrama).
- Unstable mind (Sattva Pariplava).
- · Restlessness and unsteadiness.
- Incoherent speech.
- · Vacant or disturbed gaze.
- Erratic behavior and actions.

a JuBha

AYUBHA JOURNAL BY AYURVED BHARATI

A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

Shloka Reference:

• "Dhi-vibhramah sattva-pariplavash cha paryakula drishtir adhiratā cha | Abaddha-vaktvam hridayam cha shunyam sāmānyam unmada-gadasya lingam ||" (Verse 6)

Specific Symptoms Based on Dosha

1. Vataja Unmada

- Inappropriate laughter, singing, dancing, and talking.
- Crying without reason.
- Physical signs include emaciation, roughness of skin, reddish discoloration.

2. Pittaja Unmada

- Anger, irritability, violent behavior.
- Nudity and destructive tendencies.
- Preference for cold things, aversion to heat.

3. Kaphaja Unmada

- Excessive sleep, lethargy, and indifference.
- Incoherent and slow speech.
- Nausea, excessive salivation, and heaviness.

4. Sannipataja Unmada

- Mixed symptoms of all three doshas.
- Severe and unpredictable manifestations.

5. Agantuja Unmada

- Symptoms vary depending on the possessing entity.
- May include sudden changes in behavior, speech, and personality.

Descriptions of Agantuja Unmada Types

Acharya Charaka provides detailed characteristics of Unmada caused by different supernatural entities:

1. Deva Unmada:

- o Pleasant appearance, calm demeanor.
- $\circ\,$ Attraction to cleanliness, worship, and virtuous deeds.

2. Rishi Unmada:

- o Exhibits behaviors resembling sages.
- o Engages in scriptural discussions, meditation.

3. Pishacha Unmada:

- o Restlessness, wandering aimlessly.
- o Talking incoherently, dirty appearance.

4. Yaksha Unmada:

- o Displays strength, arrogance, and indulgence.
- o Attraction to luxury, singing, dancing.



A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

5. Rakshasa Unmada:

- Violent and aggressive behavior.
- o Destructive actions, use of weapons.

Shloka Reference:

• "Tatra cha uksha-acharam tapah-svadhyaya-kovidam naram prayah shukla-pratipadi trayodasyam cha chhidram avekshya abhidharshyanti devah..." (Verse 20)

Modern Correlation

- Schizophrenia:
 - o Hallucinations, delusions, disorganized speech, and behavior.
- Bipolar Disorder:
 - o Episodes of mania and depression, mood swings.
- Major Depressive Disorder:
 - o Persistent low mood, lack of interest, and lethargy.
- Psychotic Disorders:
 - o Loss of contact with reality, severe disturbances in thought processes.

Prognosis (Sadhya-Asadhya) of Unmada

Ayurvedic Perspective

- Curable (Sadhya):
 - $\circ\,$ Unmada caused by Vata, Pitta, and Kapha when treated promptly.
- Difficult to Cure (Krichra Sadhya):
 - o Sannipataja Unmada due to the involvement of all three doshas.
- Incurable (Asadhya):
 - o Unmada with severe symptoms, chronic cases, and those caused by certain supernatural entities.
- Signs of Poor Prognosis:
 - o Self-harm tendencies, violent behavior towards others.
 - o Presence of severe physical symptoms like bleeding, extreme emaciation.

Shloka Reference:

• "Sarveshvapi tu khalveshu yo hastav udyamya rosasamrambhat nihshankam anyeshu atmani va nipatayet sa hy asadhyo jneyah..." (Verse 22)

Modern Correlation

- Good Prognosis:
 - o Acute onset, identifiable cause, and early intervention.
- Poor Prognosis:
 - o Chronic conditions, severe psychosis, treatment resistance.
- Risk Factors:
 - o Suicidal tendencies, violent behavior, comorbid substance abuse.

ISSN - 3048-8621 www.ayubha.com

Treatment Principles (Chikitsa Sutra)

Ayurvedic Perspective

General Approach

1. Purification Therapies (Shodhana Chikitsa):

- o **Emesis (Vamana)**: For Kapha-dominant Unmada.
- o Purgation (Virechana): For Pitta-dominant Unmada.
- o Enema (Basti): For Vata-dominant Unmada.

2. Pacification Therapies (Shamana Chikitsa):

- Use of herbal formulations, medicated oils, and ghee.
- o Application of nasal medications (Nasya), collyrium (Anjana), and inhalation therapies (Dhuma).

3. Physical Therapies:

- o Massage, oil applications, and fomentation.
- o Inducing fear or shock in certain cases to restore mental equilibrium.

4. Behavioral Therapies:

- Encouraging adherence to ethical conduct.
- o Use of counseling and reassuring words.

5. Spiritual Therapies:

- o Mantra chanting, rituals, and offerings.
- o Worship of deities and performance of auspicious rites.

Shloka References:

- "Unmade vataje purvam sneha panam visheshavit | Kuryad avritamarge tu sa-sneham mridu shodhanam ||" (Verse 25)
- "Tarjanam trasanam danam harshanam santvanam bhayam | Vismayo vismrteh hetor nayanti prakritim manah ||" (Verse 31)
- "Sarpi-pana-adi ragantor mantra-adish cheshyate vidhih ||" (Verse 33)

Specific Treatments Based on Dosha

1. Vataja Unmada:

- Oleation (Snehana): Internal and external application of oils.
- o Gentle Purification: Mild laxatives after proper oleation.
- Herbal Medications: Use of calming and nourishing herbs.

2. Pittaja Unmada:

- Purgation: Use of cooling purgatives.
- o **Cooling Therapies**: Application of cooling substances.
- Herbal Medications: Use of bitter and sweet herbs that pacify Pitta.

3. Kaphaja Unmada:

- **Emesis**: Induced vomiting to eliminate excess Kapha.
- o **Stimulation Therapies**: Use of strong nasal medications, collyrium.
- Herbal Medications: Use of pungent, bitter herbs that reduce Kapha.

Agantuja Unmada Treatments

• Avoidance of Aggressive Therapies:

a UBha

AYUBHA JOURNAL BY AYURVED BHARATI

A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

o Refrain from strong purification procedures.

• Spiritual Therapies:

o Performing rituals, offerings, and chanting mantras.

• Herbal Medications:

• Use of herbs with protective and calming properties.

• Counseling and Support:

o Reassuring the patient, building trust.

Shloka Reference:

• "Desham vayan satmyam doşam kālam balābale | Cikitsitam idam kuryād unmade bhuta-doşaje ||" (Verse 87)

Modern Correlation

• Psychotherapy:

o Cognitive-behavioral therapy, counseling, and supportive therapy.

• Pharmacotherapy:

• Use of antipsychotics, mood stabilizers, antidepressants.

• Electroconvulsive Therapy (ECT):

o For severe cases unresponsive to medications.

• Social Support:

o Family involvement, support groups.

• Holistic Approaches:

o Incorporation of mindfulness, meditation, and stress reduction techniques.

Herbal Formulations and Medications

Ayurvedic Preparations

1. Kalyanaka Ghrita

• Ingredients:

Herbs like Hingu (Asafoetida), Triphala, Devadaru (Cedrus deodara), Manjistha (Rubia cordifolia), Haritaki
 (Terminalia chebula), Vacha (Acorus calamus), etc.

• Benefits:

- o Improves intellect, memory, and consciousness.
- o Effective in Unmada, Apasmara (epilepsy), and other mental disorders.

Shloka Reference:

• "Kalyanakakam idam sarpih shreshtham pumsavaneshu cha |" (Verse 41)

2. Mahakalyanaka Ghrita

- Enhanced Version of Kalyanaka Ghrita
- Benefits:
 - o More potent, especially effective in Sannipataja Unmada.

Shloka Reference:



A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

• "Sa syat kalyanakam mahat brimhaneyam visheshena sannipata-haram param ||" (Verse 44)

3. Mahapaishachika Ghrita

Ingredients:

o Herbs like Jatila, Putana, Keshini, Vira, Chitraka (Plumbago zeylanica), etc.

• Benefits:

- Acts as a powerful nervine tonic.
- o Enhances intellect and memory, beneficial for children.

Shloka Reference:

• "Mahapaishachikam nama ghritam etad yatha amritam | Buddhismritikaram chaiva balanam cha angavardhanam ||"
(Verses 47-48)

4. Lashunadi Ghrita

- Ingredients:
 - o Lashuna (Garlic), Hing (Asafoetida), Triphala, and other spices.
- Benefits:
 - o Effective in Vata disorders, Unmada, Apasmara.

Shloka References:

• "Tad dosha-agantu-sambhutan unmadan vishama-jvaran | Apasmaraan cha hanti ashu pana-abhyanjana-navanaih ||" (Verse 51)

Applications

- Nasal Medication (Nasya):
 - o Instillation of medicated oils or powders into the nostrils.
- Collyrium (Anjana):
 - Application of medicated eye preparations.
- Inhalation Therapy (Dhuma):
 - Inhaling medicated smoke for mental clarity.

Shloka References:

- "Anjanotsadana-alepana-avananadi shu yojayet |" (Verse 64)
- "Basta-mutrena pishtam syan navana-anjanam |" (Verse 65)

Modern Correlation

- Herbal Supplements:
 - o Use of medicinal plants with neuroprotective properties.
- Nutraceuticals:
 - Incorporation of herbs like Brahmi (Bacopa monnieri), Ashwagandha (Withania somnifera) known for cognitive enhancement.
- Aromatherapy:
 - $\circ\,$ Use of essential oils for relaxation and mood improvement.

A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

Behavioral and Physical Therapies

Ayurvedic Perspective

- · Shock Therapy:
 - o Inducing fear or surprise to restore mental balance.
- Physical Restraint:
 - o Safe confinement in cases of violent behavior.
- Counseling:
 - o Reassuring words, logical explanations.
- Use of Harsh Measures:
 - o In extreme cases, methods like sprinkling cold water, exposure to loud noises.

Shloka References:

- "Tarjanam trasanam danam harshanam santvanam bhayam | Vismayo vismrter hetoh nayanti prakritim manah ||" (Verse 31)
- "Badham sarshapa-taila-aktam nyased uttanam atape | Kapikacchu athava taptair loha-taila-jalaih sprishet ||" (Verse 80)

Modern Correlation

- Behavioral Interventions:
 - o De-escalation techniques in agitated patients.
- · Psychotherapy:
 - o Cognitive-behavioral therapy, dialectical behavior therapy.
- Occupational Therapy:
 - Engaging patients in meaningful activities to improve function.

Spiritual and Ritualistic Therapies

Ayurvedic Perspective

- Mantra Chanting:
 - o Recitation of sacred hymns for mental peace.
- Ritual Offerings (Bali):
 - Performing rituals to appease supernatural entities.
- Worship and Devotion:
 - Encouraging the patient to engage in spiritual practices.

Shloka References:

- "Shantikarma-ishti-homam cha japa-svastyayanani cha | Veda-uktaan niyamaan cha api prayashcittani cha acharet ||"
 (Verse 90)
- "Bhutanam adhipam devam ishvaram jagatah prabhum | Pujayan prayatah nityam jayaty unmadajam bhayam ||" (Verse 91)

Modern Correlation



A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

- Spiritual Counseling:
 - o Incorporation of patient's faith and spirituality in therapy.
- Mindfulness and Meditation:
 - o Practices to enhance self-awareness and reduce stress.
- Community Support:
 - Engagement with spiritual communities for social support.

Prophylactic Measures

Ayurvedic Perspective

- Ethical Living:
 - o Adherence to moral codes, righteous conduct.
- Healthy Lifestyle:
 - o Balanced diet, regular exercise, and mental discipline.
- Mental Resilience:
 - Strengthening the mind to withstand stress and negative influences.

Shloka Reference:

• "Nivritta-amisha-madyah yo hitashi prayatah shuchih | Nija-agantu-bhir unmadaih sattva-van na sa yujyate ||" (Verse 96)

Modern Correlation

- Preventive Psychiatry:
 - o Promoting mental health through education and early intervention.
- Stress Management:
 - Techniques to cope with stress and prevent mental breakdown.
- Resilience Building:
 - Enhancing coping mechanisms and adaptability.

Discussion

Acharya Charaka's detailed exposition on Unmada reflects a profound understanding of mental health disorders and their multifaceted nature. The emphasis on holistic management—encompassing physical, mental, social, and spiritual dimensions—aligns with modern integrative approaches in psychiatry.

Relevance of Ayurvedic Concepts

- Mind-Body Connection:
 - $\circ\,$ Recognition of the interplay between physical doshas and mental functions.
- Individualized Treatment:
 - \circ Tailoring the rapies based on dosha predominance and patient constitution (\textit{Prakriti}\xspace).
- Role of Lifestyle and Ethics:
 - $\circ\,$ Importance of diet, behavior, and moral conduct in mental health.

Integration with Modern Psychiatry



A Monthly peer-reviewed journal by Ayurved Bharati

ISSN - 3048-8621 www.ayubha.com

• Holistic Care:

o Combining pharmacotherapy with psychotherapy and lifestyle modifications.

Cultural Sensitivity:

o Understanding cultural beliefs and incorporating them in treatment.

• Complementary Therapies:

Use of meditation, yoga, and herbal supplements as adjuncts.

Challenges and Opportunities

• Scientific Validation:

• Need for research to validate Ayurvedic treatments in Unmada.

• Interdisciplinary Collaboration:

o Bridging traditional knowledge with modern clinical practice.

• Patient-Centered Care:

Focusing on individual needs and preferences.

Conclusion

The Ayurvedic understanding of Unmada as presented by Acharya Charaka offers valuable insights into the nature of mental disorders and their management. The comprehensive approach, addressing physical, psychological, and spiritual aspects, can enhance modern psychiatric care by promoting holistic well-being.

Integrating Ayurvedic principles with contemporary medicine requires careful consideration, scientific evaluation, and cultural sensitivity. By embracing the strengths of both systems, healthcare providers can offer more effective and compassionate care to individuals suffering from mental health disorders.

References

- 1. Charaka Samhita, Chikitsa Sthana, Unmada Chikitsa Adhyaya.
- 2. Sharma, P. V. (1981). Charaka Samhita: Text with English Translation . Chaukhambha Orientalia.
- 3. Lad, V. (2002). Textbook of Ayurveda. Ayurvedic Press.
- 4. Dash, B., & Kashyap, L. (2001). Diagnosis and Treatment of Diseases in Ayurveda. Concept Publishing Company.
- 5. Murthy, K. R. S. (2012). Astanga Hridaya (English Translation). Krishnadas Academy.
- 6. Sadock, B. J., & Sadock, V. A. (2015). Kaplan and Sadock's Synopsis of Psychiatry . Lippincott Williams & Wilkins.
- 7. Singh, R. H. (1998). Essentials of Ayurveda. Motilal Banarsidass Publishers.
- 8. Kessler, R. C., et al. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders. *Archives of General Psychiatry*, 62(6), 593-602.
- 9. Fauci, A. S., et al. (2015). Harrison's Principles of Internal Medicine. McGraw-Hill Education.
- 10. McEwen, B. S. (2007). Physiology and neurobiology of stress and adaptation. Physiological Reviews, 87(3), 873-904.