
Stress Management

Part 1

Almahdi Wardami Alamen,* Mutwakil Gamal Ahmed,*

Abstract:

Good health and the ability to meet effectively the many demands of life require managing the stress. Combining careful assessment and choice of strategies, thoughtful and honest feedback, and continued support, healthcare workers can help people cope more effectively with the innumerable stressors they encounter. Research to discern the interplay of physiological, social, and spiritual responses to stress has yielded important knowledge for practice. However, uncovering the intricate workings of the brain within the context of human stress and coping experiences is a daunting and critical challenge for today's health researchers.

Stress management strategies providing an opportunity for individuals to acquire the necessary skills to cope more effectively and become confident in self-managing. From this awareness, the individual is able to challenge and change perception, decrease stress reactivity, improve self-management skills, and minimize the harmful consequences of stress. This process positively influences health promotion, disease prevention, and symptom management. Understanding influences of stress on health and illness is essential to healthcare practice.

Key Terms: Coping, distress, exercise, healthy diet, humor, sleep hygiene, social support, stress.

Introduction:

Stress is an excellent paradigm for understanding the relationships among the determinants of health, the leading health indicators, and health outcomes. Stress has been shown to cause or exacerbate many of the leading health problems in the developed world, such as those related to obesity, alcohol and drug abuse, and sexually transmitted diseases.¹⁻³ Consequently, helping individuals, families, and communities to find more effective ways to respond to stress is an important health-promotion goal.

Stress management has been an effective intervention for health promotion, disease prevention, and symptom management. Stress management strategies such as relaxation and imagery, self-monitoring, goal setting, cognitive restructuring, and problem have long been the staple of community programs, including Alcoholics Anonymous, Smoke Enders, and Weight Watchers. These strategies help people to modify health risk behaviors and thereby improve quality of life. However, national health data indicate the need for continued and expanded use of these modalities across the life span. Unfortunately, although the United States health care, it provides excellent, expensive, heroic care, it provides poor quality low-cost preventive care, including stress management. Moreover, to ameliorate many harmful effects of stress, community-level health promotion is essential. Even though shifting focus from providing acute

care for individuals to enhancing health of communities requires a revolution in our health care delivery systems and outlook, successful community health-promotion initiatives hold promise for the future.⁴

The goal of stress management is to improve quality of life by increasing healthy, effective coping, thereby reducing unhealthy consequences of distress. This process produces a dynamic interaction of mind, body, and spirit, which affects not only physical health and well-being, but also cognitive and emotional states and behavior; therefore, stress management is an essential tool for clinical practice. Stress management has strong potential for influencing all of the following leading health indicators in Healthy People 2010: physical activity, obesity, tobacco use, substance abuse, responsible sexual behavior, mental health, injury and violence, environmental quality, immunization, and access to health care.⁴

Sources of Stress:

A **stressor** is any psychological, environmental, or physiological stimulus that disrupts homeostasis, thereby requiring change or adaptation.^{5,6} This definition underscores two important ideas: even welcome events are stressors because they precipitate change, and stress is not intrinsically bad or unhealthy. Stress is an essential component of being alive.

*) Department of Medicine, Faculty of Medicine, University of Sebha, Sebha, Libya.

Individuals encounter a variety of physical, psychological, social, spiritual, and environmental stressors. Stressors range from health and illness experiences such as childbirth, physical illness, trauma, or blood loss; to activities of daily living such as caring for children, meeting work deadlines, and cleaning or repairing the house; to less common events such as a critical examination, experiencing the death of a relative, losing possessions in a fire, losing a job, getting a divorce, or getting married.

Stressors can be organized into three categories;

1. Stressors over which people have no control (extrinsic factors), such as the weather, a traffic jam, or the death of a spouse,
2. Stressors that individuals can modify by changing their environment, social interactions, or behaviors, and
3. Stressors created or exacerbated (intrinsic factors) by poor time management, procrastination, poor communication, catastrophic negative thinking (expecting the worst), or struggling with self-defeating behaviors.

Stress is a person-environment process in which the person appraises a situation as taxing or as exceeding an individual's resources and endangering well-being.⁷ Appraisal is an important concept that helps to explain why two people react in different ways to the same situation.

Stress is the physical, psychological, social, or spiritual effect of life's pressure and events. Stress is an interactive process that involves "recognition, perception, and adaptation to the loss or the threat of loss of homeostasis or wellbeing".¹ Dr. Selye, a Canadian physiologist, demonstrated that, to a certain extent, stress can be challenging and useful, which he identifies as **eustress**. Selye also observed that when stress becomes chronic or excessive, the body is unable to adapt and maintain homeostasis and thus coined the term **distress**.⁸ Stress can both be useful and harmful. As stress increases, efficiency and performance also increase, but not endlessly. At a certain point performance and efficiency start to decrease significantly if stress continues unabated. It is important to understand the many causes of stress and the negative physical, psychological, and spiritual consequences of distress.

Physiological Effects of Stress:

An individual's response to stress provides a model to examine changes across the bio-psychosocial-spiritual domains. In response to a perceived threat (i.e., stressor) the body prepares to meet the challenge. Perception of threat stimulates a

physiological pattern of neuron-endocrine activation and behavioral changes mediated by the central nervous system.^{1,5-6} In most cases this reaction is an adaptive, short-term, acute response to a stressor. First termed the fight-or-flight response [9], and later called the stress response,⁸ the individual's reaction to a real or imagined threat prepares the body for emergency reaction and fosters survival in circumstances of immediate, time-limited threat. The hypothalamus signals the sympathetic nervous system to release epinephrine and nor-epinephrine, along with other related hormones. A state of arousal results that is characterized by increased metabolism, pulse, blood pressure, respiration, and muscle tension. This physiological arousal proceeds along three main pathways:

1. The musculoskeletal system.
2. The autonomic nervous system
3. The psychoneuroendocrine system.

The musculo-skeletal system responds by increasing tension and tone. At the same time, the autonomic nervous system, via the sympathetic branch, orchestrates a generalized arousal that includes increases in heart rate, blood pressure, and respiratory rate. Additionally, a heightened awareness of the environment is triggered, and blood shifts from the visceral organs to the large muscle groups. Consequently the psycho-neuro-endocrine system stimulates the hypothalamic-pituitary-adrenal axis and the secretion of corticosteroids (primarily cortisol) and other neuro-endocrine substances into the systemic circulation, increasing blood glucose levels, influencing sodium retention and in the acute phase, increasing the anti-inflammatory response. Pro-inflammation associated with stress is emerging as a common pathway in a variety of disease.^{5,9-10} Nitric oxide pathways involved in pro-inflammation may have cytotoxic and detrimental effects.¹¹ Additionally, other hormones regulated by the psychoneuroendocrine system, such as reproductive and growth hormones, endorphins, and enkephalins, can be affected by chronic stress.¹²

As mentioned, in most cases the stress response is a beneficial and adaptive pattern that increases the efficiency and quality of performance, but it can be maladaptive when a stressor continues indefinitely.¹³ Maladaptive is an enduring and sometimes self-sustaining cascade of responses that degenerate physical, psychological, and spiritual well-being. Studies show that maladaptive stress can cause or exacerbate disease or symptoms of diseases, such as angina, cardiac arrhythmias, pain, tension headaches, insomnia, and gastrointestinal

complaints. This influence is well documented in comprehensive experimental and clinical literature.^{5,10} Not surprisingly, stress has been found to have a harmful influence on susceptibility, progress, and outcomes of cardiovascular disease.^{6,11}

Psychological Effects of Stress:

The psychological effects of stress are best illustrated by its contributory role in negative mood states, including anxiety, depression, hostility, and anger. Depressed individuals have elevated cortisol levels.¹ Cortisol concentration is frequently above normal in urine, plasma, and cerebrospinal fluid of clients with depression. Further investigations indicate that when a depressed individual returns to good health, cortisol secretion returns to normal.¹³ These observations suggest that continued stress may cause an excessive neuroendocrine response. At the same time, a growing body of literature documents the relationship between sustained negative mood states and increased morbidity and mortality in certain diseases. A chronic state or repeated episodes of psychological stress may trigger an inflammatory process leading to atherosclerosis. This stress-related inflammatory process may be responsible for as much as 40% of atherosclerosis among people without other known risk factors.⁶

Sociobehavioral Effects of Stress:

In response to stress, individuals often revert to or increase their reliance on less healthy behaviors, such as overeating, excessive use of alcohol or drugs, and smoking. Recognizing that such behaviors are inconsistent with the healthy behaviors needed to cope with stress is easy; however, stopping these behaviors and using health-promoting strategies is not. Risky behaviors and traits such as a sedentary lifestyle, obesity, overeating high-fat foods, smoking, drug use, and social isolation have been linked to morbidity and mortality [2]. Conversely, exercise, healthy diet, smoking cessation, healthy weight maintenance, and social interaction have been identified as leading indicators of health.

Spiritual Effects of Stress:

Interest in the connection between spirituality and health is significant. In response to stress, people often feel disconnected from life's meaning and purpose; harmful effects on their health and well-being can result. Finding meaning and connection through religion or spirituality can protect against negative outcomes of stress, at least to some extent. After large-scale community disasters such as September 11th, turning to religion as well as

engaging in open discussion and community activities, helped people to cope with their reactions to these events.¹⁴ Research demonstrates a variety of associations between religious activity of spirituality and stress reduction. For example, religiosity among a sample of women with fibromyalgia had protective effects against stress.¹⁵ Difficult forgiving one-self and negative religious coping were related to depression, anxiety, and posttraumatic stress disorder symptom severity among a sample of veterans.¹⁶ Among a group of African American heterosexuals with human immunodeficiency virus infection, religious and existential well-being explained 32% of variance in depression.¹⁷ Thus research now affirms what have been known since the writings of Florence Nightingale, in 1859, over a century ago; that is, helping people use interventions that influence or restore connection with life meaning and purpose has important health-promoting benefits.¹⁸

Health Benefits of Managing Stress:

A growing body of evidence underscores the importance of controlling stress to promote health and quality of life for people with a variety of health problems. Immune system diseases have responded to interventions that reduce the stress response.¹⁹ For example, continuous labor support reduces the stress response, promotes a woman's positive memory of the experience, and affects various desired health outcomes.²⁰ Psychotherapeutic approaches, such as interpersonal and cognitive-behavioral psychotherapies that focus on perception and management of life stressors, are effective treatments for depression and related mental health disorders.^{21,22} Promoting a positive attitude and development of skills to cope with stress is foundational to many stress management interventions. Kobasa and co-workers made a groundbreaking contribution to understating the stress-illness relation when they identified characteristics of hardiness.²³ They described individuals with stress-hardy characteristics who, when exercising and accessing social support, were less vulnerable to stress-related symptoms and diseases. The characteristics of stress hardiness are control, challenge, and commitment. For stress-hardy individuals, stress is viewed as a challenge rather than a threat; they feel in control of situations in their lives, and they are committed to rather than alienated from work, home, and family. Research outcomes support the role of stress-hardy characteristics in promoting better health. Hardiness was found to moderate the relationship between stress and depression.²⁴ When individuals do not possess hardiness attributes, stress is more

likely to result in symptoms. Women with medium or high stressors and low assertiveness, low hardiness, or the inability to express their feelings were more likely to report physical symptoms than were women who were stronger in these personality traits.²⁵ However, other researchers found hardiness buffered effects of stress on illness in for males, but not for females. This finding indicates the possible gender influences merit consideration.²⁶

Investigations also have found links between health and explanatory style. For example, a pessimistic explanatory style has been associated with early mortality.²⁷ In a study of people undergoing cardiac rehabilitation, optimism contributed to positive health outcomes directly, as well as indirectly, through medication of less engagement in harmful coping and fewer symptoms.²⁸ Recognizing the influence of explanatory style on health and well-being furthers the understanding of how thoughts, feelings, behaviors, and physiological activity interact.

Assessment of Stress:

Assessment of the stress-coping abilities of an individual family, or community is part of comprehensive health assessment that includes past and present subjective and objective data. Collecting these data enables the client and clinician to determine the status of the person's stress-coping pattern, and actual and potential strengths and weaknesses.

The clinician thoroughly collects data during the history, physical examination, and health patterns assessment. Identifying the stress-coping pattern is especially important. Each individual is the primary data source; no other person can explain accurately the individual's perceptions of the stressors, stress responses, and resources to prevent or alleviate the stress.

Stress is experienced across biological, psychological, and spiritual domains; therefore, all perceptions are important to the assessment. Throughout the assessment process, individuals may become aware of information of which they were previously unaware, or they may identify information related to their perceived problems. For example, a man may be aware of the stress of his job but may be unaware that he has high blood pressure caused by this stress.

Lazarus and Folkman²⁹ proposed a theory comprising primary and secondary appraisal of stressful events, situations, or demands and the effectiveness of an individual's coping skills.

Primary appraisal of coping includes descriptions of perceived actual and potential positive and negative outcomes. Negative outcomes refer to

harm, whereas positive outcomes refer to the challenges resulting from stressors that an individual perceives can be overcome. Examples of negative outcomes are physical injury, disease, loss of a cherished relationship, position or possession, and death. Positive outcomes include graduation, promotion, and development of important relationships.

Secondary appraisal follows primary appraisal. It consists of the individual's identification of choices to cope with the actual or potential harm, threat, or challenge. The choices may be internal or external resources and responses. For example, a social resource in coping with the needs of a toddler might be learning strategies in a parent-effectiveness training course. A coping response to the challenges of parenting a toddler might be restructuring the toddler's and parent's schedules to allow for more frequent cycles of activities and rest. The individual's primary and secondary appraisals of stress provide opportunities to consider the stress experiences in different ways. Resources that had been forgotten may be remembered, or a threat may be newly viewed as a challenge and an opportunity for enhanced development and status. Stress responses are mediated by the appraisal process.

By using measurement instruments with established reliability and validity, one can improve assessment of an individual's stress and coping. Tools can help the clinician distinguish between diagnoses that have many signs and symptoms in common. For example, disturbances in thinking and feeling processes can be difficult to distinguish and may have confounding clinical pictures. These disturbances can occur separately or simultaneously in the same person. An example of this complexity is the similarity of symptoms of depression and dementia. The clinician must determine whether or not one health problem is actually the cause of the other in order to develop an effective plan of care (Care Plan). The schedule of recent experiences is an example of an instrument used widely in clinical assessment to measure the amount of life change and associated stress.³⁰ The tool was a groundbreaking contribution to knowledge about links among life events, stress, and illness. Davis and colleagues³¹ have found that this inventory can assist people to assess the degree of recent changes in their lives.

A wide variety of tests and questionnaires are available to help clinicians assess orientation, attention, cognitive skills and patterns, traits and states of emotions, symptoms of psychiatric disorders, and overall quality of life. For example, instruments are available to assess mental status, anxiety, coping, lifestyle, and quality of life. Prior

to use, clinicians and researchers need to check training requirements and copyright restrictions (i.e., purchase requirements) that can affect access to instruments.

Use of standardized instruments promotes accuracy in developing diagnoses and plans of care, and assists in evaluating the effectiveness of care. For example, a clinician may compare an individual's

self-evaluation scores before intervention with the post-intervention scores and revise the plan of care accordingly. Additionally, clinicians may analyze population baseline scores for relevant characteristic and develop programs of research and quality improvements aimed at improving outcomes.

Table 1: Plan For Effective Coping.

<p>Clinical diagnosis: Ineffective individual Coping related to increased stress at work and limited coping strategies.</p> <p>Defining Characteristics</p> <ol style="list-style-type: none"> 1. Physiological disturbances 2. Abuse of alcohol or drugs 3. Participation in potentially dangerous activities 4. Engaging in lifestyle with risk to health 5. Impairment of social or functioning 6. Nonproductive lifestyle 7. Failure to function in usual social roles 8. Inappropriate behaviors in social situations 9. Self-absorption 10. Lack of concern for or detachment from usual social support <p>Poor Morale</p> <ol style="list-style-type: none"> 1. Unhappiness 2. Lack future orientation 3. Hopelessness 4. Unacceptable quality of life 5. Pessimism <p>Defensive Patterns</p> <ol style="list-style-type: none"> 1. Inflexibility 2. Hyper-vigilance 3. Avoidance 4. Inertia 5. Refusal or rejection of help

Table2. Plan For Effective Coping

<p>Expected Outcomes</p> <ol style="list-style-type: none"> 1. Report increased information on and consequences to himself of stressors experienced 2. Practice the relaxation response for 20 to 30 minutes every day through prayer or contemplation; use multiple mini-relaxation throughout each day 3. Report increasing weekly exercise or activity and healthy changes in nutrition and sleep or rest patterns 4. Develop effective coping and problem-solving abilities to manage stress, beginning with the stress at work <p>Interventions</p> <ol style="list-style-type: none"> 1. Promote an attitude of openness to new information 2. Enroll client in a cognitive behavioral group program to learn stress management strategies and health promotion 3. Monitor client's daily practice of relaxation response 4. Monitor client's changes in exercise or activity, nutrition, and sleep or rest patterns, and mood 5. Guide client to develop two coping strategies through cognitive-behavioral restructuring

References:

1. Cahill C. Women and stress. In J.J. Fitzpatrick & D. Taylor (eds.), *Annursing research: Vol. 19. Women's health research*. New York, Springer. 2001; 229-248.
2. U.S. Department of Health and Human Services. 2000. *Healthy People 2010*. From; <http://www.health.gov/healthypeople/document/html>.
3. Eastering, D., Gallagher, K., & Lodwick, D. *Promoting health at the community level*. Thousand Oaks, CA: Sage. 2003.
4. U.S. Department of Health and Human Services. *Public Health Servicece, 2000*. Washington Government Printing Office. DC. U.S.
5. Batrol, G., & Courts, N. The psychophysiology of body-mind healing. In B. Dossey, C. Guzzetta,

- & L. Keegan (Eds.), *Holistic Nursing: A handbook for practice*. Gaithersburg, MD: Aspen. 2000.
6. Black, P., & Garbutt, L. Stress, inflammation and cardiovascular disease. *Journal of Psychosomatic Research*, 2000;52: 1-23.
 7. Stuart, E. & Wells-Federman, C. Cognitive therapy. In B. Dossey, C. Guzzetta, & L. Keegan (Eds.), *Holistic nursing: A handbook for practice*. Gaithersburg, MD: Aspen. 2000.
 8. Selye, H. history and present status of stress concept. In L. Goldberg & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects*. New York: The Free Press. 1982.
 9. Cannon, W. The emergency function of the adrenal gland in pain and the major emotions. *American Journal of Physiology*, 1914;33:356-372.
 10. Esch, T., & Stefano, G. Pro-inflammation: A common denominator or initiator of different patho-physiological disease processes. *General Medical Science Monitor*, 2002; 8: 1-9.
 11. Esch, T., Stefano, G., Fricchione, G., et al. Stress in cardiovascular disease. *General Medical Science Monitor*, 2002; 8: 93-101.
 12. Chapman, C., & Gavrin, J. The contributions of persistent pain. *Lancet*, 1999; 353: 2233-2236.
 13. The Mind Body Medical Institute. Stress and performance. 2004. From; <http://www.mbi.org/-pages/mbb-s2.asp>.
 14. Marshall, R. If we had known then what we know now: A review of local and national surveys following September 11, 2001. *CNS Spectrum*, 2002; 7: 645-649.
 15. Dedert E., Studts J., Weissbecker I, et al. Religiosity may help preserve the cortisol rhythm in women with stress related illness. *International Journal of Psychiatry in Medicine*, 2004;34:61-77.
 16. Witvliet, C., Phipps, K., Feldman, M., & Beckhman, J. Posttraumatic mental and physical health correlates of forgiveness and religious coping in military veterans. *Journal of Traumatic Stress*, 2004; 17: 2669-273.
 17. Coleman, C. The contribution of religious and existential well-being to depression among African American heterosexuals with HIV infection. *Issues in Mental Health Nursing*, 2004; 25:103-110.
 18. Nightingale, F. Notes on nursing: What it is and what it is not. (Commemorative ed.) Philadelphia; J.B. Lippincott. 1992.
 19. Cruess, D., Antoni, M., Schneideman, N., et al. Cognitive-behavioral stress management increases free testosterone and decreases psychological distress in HIV-positive men. *Health Psychology*, 2000; 19:12-20.
 20. Pascali-Bonaro, D., & Kroeger, M. Continuous female companionship during childbirth: A crucial resource in times of stress or calm. *Journal of Midwifery and Women's Health*, 2004; 49: 19-27.
 21. Markowitz, J. Interpersonal psychotherapy of depression. In M. Power, (Ed.) *Mood disorders: A handbook of science and practice*. West Sussex, England, John Willey. 2004.
 22. Power, M. Cognitive behavioral therapy for depression. In M. Power, (Ed), *Mood disorders: A handbook of science and practice*. West Sussex, England. John Willey. 2004.
 23. Kobasa, S., Maddi, S., & Kahn, S. Hardiness and health: A prospective study. *Journal of Personality and Social Psychology*, 1982; 42: 391-404.
 24. Pengilly, J., & Dowd, E. Hardiness and social support as moderators of stress. *Journal of Clinical Psychology*, 2000: 56: 813-820.
 25. Kenney, j., & Bhattacharjee, A. Interactive model of women's stressors, personality traits and health problems. *Journal of advanced Nursing*, 2000; 32: 249-258.
 26. Klag, S., & Bradley, G. The role of hardiness in stress and illness: An exploration of the effect of affectivity and gender. *British Journal of Health Psychology*, 2004; 9: 137-161.
 27. Manuta, T., Colligan, R., Malinchoc, M., & Offord, K. Survival rate among medical patients over a 30-year period. *Mayo Clinic Proceedings*. 2000; 75; 140-143.
 28. Shen, J., McCreary, C., & Myers, H. Independent and mediated contributions of personality, coping, social support, and depressive symptoms to physical functioning outcome among patients in cardiac rehabilitation. *Journal of Behavioral Medicine*, 2004; 27: 39-62.
 29. Lazarus, R., Folkman, S. *Stress appraisal and coping*. New York: Springer. 1984.
 30. Holmes, T. *The schedule of recent experience*. Seattle, WA: University of Washington Press. 1981.
 31. Davis, M., Eshelman, E., & McKay, M. *The relaxation and stress reduction workbook*. Oakland, CA: New Harbinger. 2000.