

## REVIEW

# Yoga and Qigong in the Psychological Prevention of Mental Health Disorders: A Conceptual Synthesis

Paul Posadzki<sup>1</sup>, Sheetal Parekh<sup>2</sup>, and Nel Glass<sup>3</sup>

**ABSTRACT** The study proposes to explore two alternative medicine therapies—qigong and yoga for balancing the essential duo of holistic mind-body and consequently offer a solution for stress, uncertainty, anxiety and depression. Qualitative research methods have been used to create a conceptual synthesis of yoga and qigong. It is suggested that an increased sense of control is the interface between these two modalities. This conceptual congruence of qigong and yoga is thought to be a selective, curative method, a prescription for ideal living and a ground of human essence existence. Furthermore, this essence is thought to enhance the mind's self-regulatory processes and prevent mental health disorders. The two alternative therapies can prevent mental health disorders such as anxiety, depression and, minimize mental health disruptions such as stress and poor quality of life. It is suggested that patients and/or clients can benefit from this fusion.

**KEY WORDS** yoga, qigong, mental disorders, concept formation

Maintaining mental health is now thought to be an ongoing challenge, especially since humans live in environments that create stress, depression, uncertainty and anxiety, all of which have potentials to lead to substance abuse, emotional and physical pain, anger and violence. It has been suggested that hundreds of millions of individuals around the globe are affected by these disorders<sup>(1)</sup>. According to the WHO, individuals with these disorders are often exposed to social isolation, poor quality of life and increased mortality because mental health policies and community intervention and treatments remain inadequate, resulting in marginalization of individuals with mental illness. To add to this problem, the current literature has reported that the costs of inpatient mental health care are escalating; demanding that the duration of inpatient admission be reduced and that individuals with mental health disorders should be treated predominantly in the community<sup>(2,3)</sup>. Furthermore, the number of individuals diagnosed with mental illness is increasing<sup>(4-8)</sup>. It has been stated that 12.3% of the world's total population are affected by mental health disorders with an expected rise of 15% by 2020<sup>(9)</sup>. Disturbingly, most of these disorders might be misdiagnosed and not treated consequently and it can be a life-threatening matter when individuals become aware that mental health disorders can interchangeably affect patients in conditions of chronic disease, such as cancer, heart diseases, diabetes mellitus and AIDS.

In this paper the authors intend to propose two

alternative medicine therapies—qigong and yoga as a means to balance the essential mind-body interactions and offer a solution to stress, uncertainty, anxiety and depression. It is asserted that the "essence" of these exercises would promote self-discovery and enhance well-being, where, individuals develop more flexibility and adaptability in their thoughts, emotions and behaviors. The end result would increase mental health awareness, self-organization, will powers and self-discipline through an increased sense of self-control during various body movements and postures, such as qigong and yoga respectively. The aim of this study is, therefore, to explore the psychological benefits of qigong and yoga exercises, describe their "essence" through the lens of their underlying concepts and investigate how patients, healthcare professionals or teachers can benefit from this synthesis in terms of the promotion, prevention, and development of the mental health.

### Brief Characteristics of Yoga

Yoga originates and has its root in Ayurveda,

---

1. University of East Anglia, School of Medicine, Health Policy and Practice, NR4 7TJ, Norwich, Norfolk, UK; 2. University of East Anglia, School of Allied Health Professions, NR4 7TJ, Norwich, Norfolk, UK; 3. Nursing Research Unit, ACU National/St Vincents and Mercy Private Hospital, Fitzroy, VIC, Australia 3065

Correspondence to: Dr. Paul Posadzki, E-mail: P.Posadzki@uea.ac.uk

DOI: 10.1007/s11655-009-9002-2

namely its philosophical approach is that ancient knowledge about life aims to discover the true sense of human existence and remedies for diseases. The main aim of yoga is self-realization, self-exploration and bliss-consciousness through consciousness control<sup>(10)</sup>. Whilst yoga has been in existence for four to five thousand years, mainly in Asia it has not yet become a part of complementary and alternative medicine.

#### Benefits of Yoga: Psychological and Spiritual Wellness

Scholars have documented that yoga asanas has resulted in a significant reduction of the symptoms of anxiety and depression<sup>(11-15)</sup>. It has been reported that yoga can also decrease oxidative stress<sup>(16)</sup> and relieve tensions, leading to better relaxation and concentration<sup>(17-19)</sup>. Shannahoff-Khalsa has demonstrated that yoga asanas increases dopamine and serotonin and decreases the secretion of cortisol, and thereby contributing to joy and happiness<sup>(20, 21)</sup>.

Yoga techniques have been found to be effective in treating obsessive-compulsive disorder, phobias, major depressive disorders, dyslexia, grief, sleep disorders including insomnia<sup>(20)</sup> and post-traumatic stress disorder (PTSD)<sup>(22)</sup>. Yoga can also improve fear management through its ability to create soothing effects. Yoga has also been advocated in controlling anger and assisting in coping with mental health challenges, helping patients to transform negative thoughts into positive ones; and facilitating rehabilitation of patients prone to anti-social behaviours<sup>(23)</sup>. Therefore, yoga offers a new route to positive mental and physical health and helps to free individuals from drug dependency (addictive and substance abuse disorders)<sup>(24)</sup> and its associated problems<sup>(25)</sup>. Yoga techniques have been reported to enhance well-being, mood, mental focus, and stress tolerance<sup>(23,26)</sup>; can help promote personal development, by encouraging individual initiative and self-belief; and can help to bring about improvements in attitude and health behaviour<sup>(25)</sup>. Yoga asanas are regarded as an open door to self-realization and creation of the perfect union of the mind, body, and spirit<sup>(27)</sup>. Some of the beneficial effects enjoyed by the yoga practitioners are a statistically significant improvement in various parameters such as better sense of mental well-being, self confidence, improved effectiveness, more satisfying interpersonal relationships, increased attentiveness, lowered irritability levels and an optimistic outlook in life<sup>(12)</sup>. It has also been cited that significant improvements in perceived self-efficacy may also

improve coping and stress management<sup>(28)</sup> among yoga practitioners. Literature has also indicated results with quality of life. For instance, it has been documented that there are significant improvements in quality of life scores<sup>(29)</sup>.

The authors would argue that this proliferation of literature is indicative of the vast potential of this healing exercise. Therefore, it is advocated that yoga can be implemented daily in order to actively control one's own thoughts, feeling, emotions and behaviours. This sense of control over one's own existence may strengthen the essence of individuals' being, prevent mental health disorders, and develop positive health states.

#### Brief Characteristics of Qigong

Qigong is also a form of complementary therapy and a method of health improvement, both efficient and effective<sup>(30)</sup>. Qigong, referred to as Chinese health exercises, has been used and developed for thousands of years to optimize energy within the body as a whole<sup>(31)</sup>. Qigong is a combination of meditation, controlled breathing and gentle, physical movements designed to direct mental attention to specific areas of the body. It may improve physical and mental health<sup>(32,33)</sup>. The qigong experts frame it as a "mind-in-body" practice rather than mind-body interaction.

#### Psychological Benefits of Qigong Exercises: Qigong and Central Nervous System

Qigong exercises may be regarded as "brain gymnastics" affecting the mind's homeostasis. Psychological outcome of qigong practice includes perceptual changes such as individuals' experience of chilliness, relaxation, tenseness and floating<sup>(34)</sup>, sense of harmony, tranquillity and serenity<sup>(35)</sup>. It also positively affects the mood changes and relieves exhaustion and tension<sup>(36)</sup>. Qigong helps to normalize, stabilize and sustain positive and pleasant emotional states of human mind<sup>(37)</sup>, thereby improving the overall well-being of individuals. It also relieves depression in chronically physical illness sufferers by improving the individual's self-identity, social well-being and quality of life<sup>(38,39)</sup>. A major development of the perception of self-efficacy has also been observed<sup>(40)</sup>. From a health resource perspective, qigong may improve an individual's sense of coherence, regain a sense of safety and active control, and can be a specific stress coping strategy<sup>(41)</sup>. Qigong training was found to result in decreased long-term anxiety and pain reduction in the general population<sup>(42, 43)</sup>. This can be partially explained by Ryu, et al, as

the authors observed the effects of qigong training on the levels of human endogenous opioid peptides, such as beta-endorphin, and other stress hormones adrenocorticotropic hormone (ACTH)<sup>(44)</sup>. The levels of beta-endorphin were significantly increased during the mid-time of training, while the level of ACTH declined at the mid and post-time of training. The results have suggested that qigong training, when used as a stress coping method, affects and plays a role in hormonal regulation related to the maintenance of homeostasis in humans<sup>(44)</sup>. Results obtained by Jones have indicated that the blood levels of the stress-related hormone cortisol may be lowered by short-term practice of qigong as well<sup>(32)</sup>. Qigong may cause changes in brain functioning, for example, theta rhythm frequencies, levels of concentration<sup>(45)</sup>. Another study showed that the practice of qigong helped in the rehabilitation of drug addicts<sup>(46)</sup>. Additional research has also shown that qigong may be an effective alternative for heroin detoxification without side effects<sup>(47)</sup>. A few positive impacts on various dimensions of human mind functioning proposes a huge potential of qigong in maintaining health related goals. The above results suggest that qigong's underlying principles can influence "mental homeostasis through increased sense of control over soft and gentle movements performed with full attention. This sense of control over one's own body-mind as a whole (thoughts, feelings, emotions, and perception of own self within here and now), while practicing qigong may be "used" to prevent mental disorders such as depression, anxiety or stress. Additionally, it may be used to develop positive emotional "reactions" such as happiness, joy and love, intelligence, creativity, or total mental well-being<sup>(32, 43, 44)</sup>.

### Mental Health Disorders

According to WHO (2001), the following mental health disorders, i.e. stress, anxiety, depression are a serious threat to the overall populations' well-being<sup>(1)</sup>. In the next section of this article, a brief description of these disorders will occur.

#### Stress

The notion that stress can cause serious psychopathology is inherent in both common thinking and formal theorizing<sup>(48, 49)</sup>. According to Lazarus and Folkman stress can be perceived as an interaction between the individual and the society<sup>(50)</sup>. This interaction may have negative connotations only when it is appraised as challenging, dangerous or threatening. Additionally, prolonged stress may induce a constellation of harmful

effects on individuals' health and well-being, affecting the integration of mind-body-spirit<sup>(51-55)</sup>.

#### Anxiety

Anxiety can be defined as a state of apprehension, fearful uncertainty, or dread caused by anticipated threats. It is often accompanied by increased sympathetic nervous system activities, i.e. shortness of breath, rapid heartbeat, sweating and trembling<sup>(56)</sup>. Spielberger distinguished anxiety as a "state" varying over time and situation, and as a "trait" stable over time<sup>(57)</sup>. It is also being suggested that some individuals tend to feel afraid even when there is no present objective threats, known in the health care industry as subjective anxiety<sup>(58)</sup>. The following anxiety disorders can also be distinguished such as panic attacks, phobias, generalized anxiety disorder, obsessive compulsive disorder and PTSD<sup>(59)</sup>. The same authors have claimed that these disorders are extremely dangerous and difficult to treat. In a similar tone, Malim and Birch have claimed that avoidance of the stimulus is a method that individuals often use to reduce anxiety<sup>(60)</sup>. Nevertheless, this means that the real source of anxiety is never conquered.

#### Depression

Major depressive episodes are characterized by feelings of worthlessness, indecisiveness and disturbed physical symptoms such as altered sleeping, eating and drinking and a larger decrease in energy for at least two weeks in duration<sup>(61)</sup>. All mood disorders remain a significant health care issue especially as there is often undue pressure on individuals within Western societies to perform. Depression can take different forms and it can also be expressed as sudden lost of interest in life, energy an drive, lack of positive emotions and mood, impaired cognitive processes such as memory or thinking, or intelligence<sup>(62)</sup>. An affected individual may have delusions and /or behavioral implications including suicide ideation and attempts.

It is therefore argued that these three pathologies indicate that affected individuals suffer considerably and need comprehensive skilled health care intervention help from healthcare professionals. Therefore, nurses, physiotherapists, rehabilitation specialists, doctors are in well positioned to support patients in their experiences of grief provided they are supported in their own integration of body, mind and spirit<sup>(63-67)</sup>. Several explanations of how this can be accomplished will be presented below.

### Yoga and Qigong and Exercises—Congruence of Their Essence

It can be claimed that an increased sense of control is conceived to be selective, curative; a method, a prescription for ideal living, a ground for human existence and the essence of both yoga and qigong exercises. This increased sense of control could also be thought as a development of inner wisdom that lead to the fullest sense of control over self-actualisation and self-realisation. The essence of yoga and qigong exercises could also lead an individual to self-exploration in the direction of enhanced self-organization and self-control at the personality level to prevent emotional fluctuations, states of uncertainty and lack of confidence, obsessive thoughts, unhealthy behaviors, such as substance use and poor attention to mental health.

### The Conceptual Synthesis for the Prevention of Mental Health Disorders

The authors have chosen these two modalities and their conceptual convergence for prevention of mental disorders (MD) because it is believed that both modalities have a similar quintessence, that is, control over own body's movements and position in space, with conscious integration of emotions and thoughts and mind-body-spirit. The authors would strongly argue that such conceptual convergence is the interface between these two practices.

The conceptual synthesis of these two modalities is based on the assumption that the human mind possesses huge positive resources, which enable individuals to obtain its maximum potentials through the sense of control over movements and postures. Therefore, implementing these "health promotion exercises" with the explicit aim being to improve and simultaneously prevent mental health disorders can consciously alter the body's self-regulatory process.

Conceptually and in practice, both qigong and Yoga promote awareness and recognition of communication between thought and action, emotions and movements and body posture and relaxation. Both exercises, if used regularly, can result in effortless concentration, self-actualization and self-realization in the present, thereby, facilitating an individual's sense and ability to control their own body's processes. Through this concept the sense of self-control over one's mental health state can be achieved, particularly when one realizes their intracception and extracception simultaneously within this real-

ity. Therefore, an individual can simultaneously become aware of the psychological processes of conscious attention, mindfulness, thoughts, feelings and emotions and the body's position in space and time and surrounding circumstances in terms of movements and postures. It is this that results in a stronger sense of control over one's own mental health.

The nature and essence of the increased sense of control over body movements and postures could therefore be explored by the individual to prevent stress, anxiety, and depression, and promote mental health and well-being. Of course, an individual performing a particular movement or the body's posture must be fully aware of their potentials in order to completely "use" it. That is the reason why consciousness is thought to be the denominator of all processes within the human body and a state when one realizes this potential through the sense of control over own movements and postures. It can also be suggested that the conscious process of self-control during movements and postures might be and should be pleasant, fascinating and passionate and should be developed to prevent mental health disorders. Furthermore, it can be suggested that the individual should move towards living in an open, friendly, close relationship to his own experience—the sense of control. The quality of such sense of control influences the nervous system positively as the body movements and postures performed with full awareness, state of unity within reality and self may be an optimal way for self-discovery, self-exploration and overall development. Both qigong and yoga can be regarded as potential methods or ways of conscious self-development and self-realization through an increased level of self-control.

### Implications for Practice

It is proposed that the increased sense of control over oneself during these activities could form part of healthcare practitioners' plans and more broadly clinical management of their hospitalized and community patients. This could improve patients' mental capacities such as level of optimism, sense of coherence, positive thoughts and emotions and conscious control over one's awareness. Consequently, coping stress strategies and resources as well as an overall health, well-being and quality of life could be enhanced. Such an approach could strengthen the healthcare professionals' own holistic health and mental qualities. The authors also believe that this could develop therapist-patient relationships.

In relation to health care professionals, the authors would advocate that performing qigong and/or yoga would be a conscious and constructive strategy to manage their own work related stress. It is clear that those employed in competitive workplaces such as health-care environment, where there is a culture of working longer hours with less human and materials resources has negatively impacted on practitioners' emotional and mental health<sup>(68)</sup>. Furthermore, decreased productivity, defensiveness, protracted stress, and burnout now typify workplaces where there is ongoing change and pressure exerted on employees to continually excel<sup>(48, 53, 68-70)</sup>. Therefore, qigong and yoga and the essence of these modalities could result in a minimized burnout, stress, anxiety or depression and lead to an increased sense of control over one's own holistic health.

### Conclusion

Within the scope of this article the authors' intention was to indicate the potential benefits of the therapeutic modalities, qigong and yoga for the psychological prevention of MD. Furthermore, such therapeutic interventions have the potential to influence mental well-being, quality of life and general/holistic health. It has been suggested that the sense of control over the body's movements and postures as well as cognitive processes, emotional reactions, and behavioural patterns is the essence and the interface of both qigong and yoga. This sense of control allows an individual to manage their mental health more efficiently in the sense that negative mental states and thoughts, emotions, moods could be recognized and controlled when they occur and MD equally prevented due to qigong and yoga. From the psychological perspective it has been strongly argued that mental health disruptions such as depression, stress or anxiety could be prevented and in the first instance at least minimized. Both qigong and yoga exercises may facilitate overall relaxation, improve concentration, and promote meditation techniques. Both may also enhance the intelligence, creative processes, thinking, memory, emotional states and other brain activities. Considering all the presented arguments, it can be suggested that the essence of qigong and/or yoga exercises could be implemented into health psychology courses, or wider clinical practice. Furthermore, patients or health care professionals could become aware of their potential benefits for the prevention of stress, anxiety or depression and development of mental well-being. A discussion in the area of prevention of mental health disorders and development of positive health resources should be open and further explorations

may give potential insight into the potential relationships between qigong and yoga exercises in the light of their essence—an increased sense of self-control. It can be suggested that nowadays some mental health challenges might be recognized due to this synthesis and the potential "ways" of their management offered. Additionally, some individuals may find it useful to prevent MD and facilitate social integration, better quality of life; reduce the morbidity and mortality of cancer, heart diseases, diabetes mellitus and AIDS patients. Finally, researchers can obtain valuable and additional arguments through such exchange of ideas presented across studies that may be united by shared assumptions.

### Future Research

The authors are aware that to their best knowledge, there is no research conducted in this field confirming that the increased sense of control as the essence of qigong and yoga exercises is a useful way in the psychological prevention of mental health disorders. However, first of all, the authors are tending to argue that minimization of MD's symptoms and risks is definitely possible and prevention may also occur—so take it like a continuum in approach. Secondly, this is a conceptual level. The authors have built such a concept/hypothesis and suggest future research directions, as this would allow better assess and understand the effects of "extracting" and adding qigong and/or yoga's essence into an integrated, multifaceted health promotion/prevention/development programs. Furthermore, the transmission of affect would be worth investigating with regard to increased sense of control. Specifically, health care education specialists could learn how to transmit the increased sense of control over their students. Subsequently, the teachers may encourage their students to transmit this notion to their future patients<sup>(71)</sup>. In conclusion the next article will reflect on the transmission of increased sense of control in educational and healthcare settings.

### REFERENCES

1. World Health Organization. Mental health: new understanding, new hope. Geneva: WHO; 2001.
2. Shanley E. Common experiences of mental health nurses and consumers: ingredients of a symbiotic relationship? Aust N Z J Ment Health Nurs 2001;10:243-251.
3. Delaney KR. Inpatient psychiatric treatment: should we revive a shrinking system? Arch Psychiatr Nurs 2006;20:242-244.
4. Edwards D, Burnard P. A systematic review of stress and stress management interventions for mental health nurses.

- J Adv Nurs 2003;42:169-200.
5. Hayman-White K, Happell B. Psychiatric nursing and mental health funding: the double dilemma. *Int J Psychiatr Nurs Res* 2007;12:1488-1496.
  6. Littlejohn C. Critical realism and psychiatric nursing: a philosophical inquiry. *J Adv Nurs* 2003;43:449-456.
  7. Snow T. Too few to care. *Nurs Stand* 2004;18:12-13.
  8. Soltis-Jarrett V. Interactionality: willfully extending the boundaries of participatory research in psychiatric-mental health nursing. *ANS Adv Nurs Sci* 2004;27:316-329.
  9. World Health Organization. Mental health determinants and populations: department of mental health and substance dependence. Geneva: WHO; 2000.
  10. Kulmatycki L. Yoga for health. Warsaw: Book and Knowledge Publishing;1997.
  11. Kirkwood G, Rampes H, Tuffrey V, Richardson J, Pilkington K. Yoga for anxiety: a systematic review of the research evidence. *Br J Sports Med* 2005;39:884-891; discussion 91.
  12. Malathi A, Damodaran A. Stress due to exams in medical students — role of yoga. *Indian J Physiol Pharmacol* 1999;43:218-224.
  13. Shannahoff-Khalsa DS. Patient perspectives: Kundalini yoga meditation techniques for psycho-oncology and as potential therapies for cancer. *Integr Cancer Ther* 2005;4:87-100.
  14. Sharma VK, Das S, Mondal S, Goswami U, Gandhi A. Effect of Sahaj yoga on depressive disorders. *Indian J Physiol Pharmacol* 2005;49:462-468.
  15. Woolery A, Myers H, Sternlieb B, Zeltzer L. A yoga intervention for young adults with elevated symptoms of depression. *Altern Ther Health Med* 2004;10:60-63.
  16. Yadav RK, Ray RB, Vempati R, Bijlani RL. Effect of a comprehensive yoga-based lifestyle modification program on lipid peroxidation. *Indian J Physiol Pharmacol* 2005;49:358-362.
  17. Kulmatycki L. Yoga Nidar. Warsaw: Book and Knowledge; 2004.
  18. Nayak NN, Shankar K. Yoga: a therapeutic approach. *Phys Med Rehabil Clin N Am* 2004;15:783-798, vi.
  19. Smith C, Hancock H, Blake-Mortimer J, Eckert K. A randomised comparative trial of yoga and relaxation to reduce stress and anxiety. *Complement Ther Med* 2007;15:77-83.
  20. Shannahoff-Khalsa DS. An introduction to Kundalini yoga meditation techniques that are specific for the treatment of psychiatric disorders. *J Altern Complement Med* 2004;10:91-101.
  21. West J, Otte C, Geher K, Johnson J, Mohr DC. Effects of Hatha yoga and African dance on perceived stress, affect, and salivary cortisol. *Ann Behav Med* 2004 ;28:114-118.
  22. Telles S, Naveen KV, Dash M. Yoga reduces symptoms of distress in tsunami survivors in the andaman islands. *Evid Based Complement Alternat Med* 2007;4:503-509.
  23. Brown RP, Gerbarg PL. Sudarshan Kriya Yogic breathing in the treatment of stress, anxiety, and depression. Part II — clinical applications and guidelines. *J Altern Complement Med* 2005;11:711-717.
  24. Nespor K. Physical exercise and yoga in prevention and treatment of addictive diseases. *Cas Lek Cesk* 2005;144:53-55.
  25. Sharma K, Shukla V. Rehabilitation of drug-addicted persons: the experience of the Nav-Chetna Center in India. *Bull Narc* 1988;40:43-49.
  26. Lavey R, Sherman T, Mueser KT, Osborne DD, Currier M, Wolfe R. The effects of yoga on mood in psychiatric inpatients. *Psychiatr Rehabil J* 2005;28:399-402.
  27. Gimbel MA. Yoga, meditation, and imagery: clinical applications. *Nurse Pract Forum* 1998;9:243-255.
  28. Waelde LC, Thompson L, Gallagher-Thompson D. A pilot study of a yoga and meditation intervention for dementia caregiver stress. *J Clin Psychol* 2004;60:677-687.
  29. Moadel AB, Shah C, Wylie-Rosett J, Harris MS, Patel SR, Hall CB, et al. Randomized controlled trial of yoga among a multiethnic sample of breast cancer patients: effects on quality of life. *J Clin Oncol* 2007;25:4387-4395.
  30. Sancier KM. Electrodermal measurements for monitoring the effects of a qigong workshop. *J Altern Complement Med* 2003;9:235-241.
  31. Litscher G, Wenzel G, Niederwieser G, Schwarz G. Effects of qigong on brain function. *Neurol Res* 2001;23:501-505.
  32. Jones BM. Changes in cytokine production in healthy subjects practicing Guolin qigong: a pilot study. *BMC Complement Altern Med* 2001;1:8.
  33. McCaffrey R, Fowler NL. Qigong practice: a pathway to health and healing. *Holist Nurs Pract* 2003;17:110-116.
  34. Xu SH. Psychophysiological reactions associated with qigong therapy. *Chin Med J (Engl)* 1994;107:230-233.
  35. Agishi T. Effects of the external qigong on symptoms of arteriosclerotic obstruction in the lower extremities evaluated by modern medical technology. *Artif Organs* 1998;22:707-710.
  36. Jung MJ, Shin BC, Kim YS, Shin YI, Lee MS. Is there any difference in the effects of qi therapy (external Qigong) with and without touching? A pilot study. *Int J Neurosci* 2006;116:1055-1064.
  37. Lee MS, Kim MK, Lee YH. Effects of Qi-therapy (external qigong) on cardiac autonomic tone: a randomized placebo controlled study. *Int J Neurosci* 2005;115:1345-1350.
  38. Tsang HW, Cheung L, Lak DC. Qigong as a psychosocial intervention for depressed elderly with chronic physical illnesses. *Int J Geriatr Psychiatry* 2002;17:1146-1154.

39. Tsang HW, Fung KM, Chan AS, Lee G, Chan F. Effect of a qigong exercise programme on elderly with depression. *Int J Geriatr Psychiatry* 2006;21:890-897.
40. Lee MS, Lim HJ. Impact of qigong exercise on self-efficacy and other cognitive perceptual variables in patients with essential hypertension. *J Altern Complement Med* 2004;10:675-680.
41. Siu JY, Sung HC, Lee WL. Qigong practice among chronically ill patients during the SARS outbreak. *J Clin Nurs* 2007;16:769-776.
42. Chow YW, Tsang HW. Biopsychosocial effects of qigong as a mindful exercise for people with anxiety disorders: a speculative review. *J Altern Complement Med* 2007;13:831-839.
43. Wu WH, Bandilla E, Ciccone DS, Yang J, Cheng SC, Carner N, et al. Effects of qigong on late-stage complex regional pain syndrome. *Altern Ther Health Med* 1999;5:45-54.
44. Ryu H, Lee HS, Shin YS, Chung SM, Lee MS, Kim HM, et al. Acute effect of qigong training on stress hormonal levels in man. *Am J Chin Med* 1996;24:193-198.
45. Pan W, Zhang L, Xia Y. The difference in EEG theta waves between concentrative and non-concentrative qigong states—a power spectrum and topographic mapping study. *J Tradit Chin Med* 1994;14:212-218.
46. Sancier KM. Therapeutic benefits of qigong exercises in combination with drugs. *J Altern Complement Med* 1999;5:383-389.
47. Li M, Chen K, Mo Z. Use of qigong therapy in the detoxification of heroin addicts. *Altern Ther Health Med* 2002;8:50-54, 56-59.
48. Blonna R. *Coping with stress in a changing world*. 3rd ed. New York: McGraw Hill; 2005.
49. Sher KJ, Trull T. *Psychological disorders: description, epidemiology, etiology and prevention*. Pawlik K Rosenzweig ed. *International handbook of psychology*. London: Sage; 2000.
50. Lazarus RS, Folkman S. *Stress, appraisal, and coping*. New York: Springer; 1984.
51. Glass N, Rose J. Enhancing emotional well-being through self-care: the experiences of community health nurses in Australia. *Holist Nurs Pract* 2008;22:336-347.
52. Papaghiuc C, Constantin B, Mihalache C, Oprea V, Carja E. Effects of psychological stress on health. *Rev Med Chir Soc Med Nat Iasi* 2005;109:705-708.
53. Rose J, Glass N. Community mental health nurses speak out: the critical relationship between emotional well-being and satisfying professional practice. *Collegian* 2006;13:27-32.
54. Schnurr PP, Green BL. Understanding relationships among trauma, post-traumatic stress disorder, and health outcomes. *Adv Mind Body Med* 2004;20:18-29.
55. Selye H. *The stress of life*. New York: McGraw-Hill; 1956.
56. Papalia DE, Olds SW. *Psychology*. New York: McGraw Hill, London; 1988.
57. Spielberger CD. *Anxiety and behavior*. New York: Academic Press Inc; 1966.
58. Gross RD. *The science of mind and behaviour*. London: Hodder Headline; 2001.
59. Halperin S, Nathan P, Drummond P, Castle D. A cognitive-behavioural, group-based intervention for social anxiety in schizophrenia. *Aust N Z J Psychiatry* 2000;34:809-813.
60. Malim T, Birch A. *Introductory psychology*. Basingstoke: Macmillan; 1998.
61. Barlow DH, Durand VM. *Abnormal psychology*. 4th ed. Australia: Thomson Wadsworth; 2005.
62. Gross RD, McIlveen R. *Psychology: a new introduction*. London: Hodder & Stoughton; 1998.
63. Cumbie SA. The integration of mind-body-soul and the practice of humanistic nursing. *Holist Nurs Pract* 2001;15:56-62.
64. Potter PJ, Frisch N. *Holistic assessment and care: presence in the process*. *Nurs Clin North Am* 2007;42:213-228, vi.
65. Shanahan M. *Holistic nursing theory: connecting heart & mind in practice*. *Beginnings* 2005;25:1, 12-13.
66. Smith KL. Appreciation of holistic nursing. *J Holist Nurs* 2006;24:139.
67. Tucakovic M. Working with the notion of soul in nursing. *Aust J Holist Nurs* 1999;6:39-41.
68. Glas N. Investing women nurse academics' experiences in universities: the importance of hope, optimism and career resilience for workplace satisfaction. *Annul Rev Nurs Educ* 2007;5:111-136.
69. Gowing MK, Kraft JD, Quick JC. *The new organizational reality: Downsizing, restructuring, revitalization*. Washington DC: American Psychological Association; 1998.
70. WFD C. When the going gets tough: Does your workforce have the resilience to keep going? It's about time, 11. 2004 [cited 2005 15th May]; Available from: [http://www.wfd.com/news/past\\_news.html](http://www.wfd.com/news/past_news.html)
71. Brennan T. *The transmission of affect*. Ithaca and London: Cornell University Press; 2004.

(Received October 10, 2008)

Edited by ZHANG Wen