




Review

Qigong for all Ages: A Narrative Review on Stress and Quality of Life.

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Abstract: Qigong is a mind-body practice combining gentle movements, controlled breathing, and meditation. Numerous studies have demonstrated its efficacy in reducing stress, anxiety, and depression, as well as improving sleep quality, concentration, and overall quality of life.

In children and adolescents, Qigong has shown to enhance attention, self-regulation skills, and reduce anxiety. For adults, including healthcare professionals, Qigong mitigates stress, alleviates emotional exhaustion, and enhances sleep quality. In the elderly, Qigong promotes healthy aging by improving motor function, balance, and psychosocial well-being. It has also exhibited effectiveness in preventing and treating various health conditions. In conclusion, Qigong is a versatile practice offering both physical and mental benefits, suitable for individuals of all age groups. It plays a pivotal role in promoting overall well-being and enhancing the quality of life, making it a valuable complementary therapeutic tool.

Keywords: Qigong, Stress, Quality of life, Children, Adolescents, Adults.

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1. Introduction

In response to a threat or a deviation from the accustomed norms and expectations inherent in our daily existence, the human body engages in a complex array of physiological and psychological responses ¹. This intricate cascade of mechanisms is enacted at the systemic level to effectively counteract and adapt to such disruptive events. The ubiquity of this phenomenon extends to a diverse range of contexts and demographic groups, transcending age, and impacting individuals across various professional, personal, and athletic domains ². Noteworthy sources of stress include competitive scenarios and examination settings, which serve as examples of these stress-inducing situations ³⁻⁶.

This adaptation mechanism, also commonly referred to as the "fight-or-flight" response, plays a pivotal role in our ability to navigate through the challenges and unfamiliar circumstances ⁷. It is an intricate interplay of neuroendocrine and autonomic processes, involving the release of stress hormones, such as cortisol and adrenaline, that mobilize the body's resources and prepare it for action ⁸. These physiological responses manifest in numerous ways, including heightened alertness, increased heart rate, and elevated blood pressure ⁹⁻¹¹.

The significance of understanding and managing these stress responses cannot be overstated. It is crucial for individuals of all ages, including children, to recognize the implications of stress in their lives, as well as its potential consequences on their overall well-being. Stress can manifest in various aspects of one's life, from personal relationships to the professional sphere, and even within the competitive domain of sports and academics ^{6,12-15}.

Competitions and examinations, serving as prime examples of stress-inducing scenarios, often exert a profound impact on individuals' performance, both positively and

negatively. While moderate levels of stress can enhance motivation and focus, excessive or chronic stress can have detrimental effects, leading to burnout, anxiety, and impaired cognitive functioning¹⁶⁻¹⁹.

In light of the multidimensional impact of stress and its prevalence across diverse settings, it is imperative for scientific research and healthcare practitioners to continue exploring the intricacies of the body's stress response mechanisms. By advancing our understanding of these processes, we can develop more effective strategies for stress management, ultimately promoting the physical and mental well-being of individuals of all ages and across a wide spectrum of life domains.

Numerous scientific studies on the effectiveness of Qigong practices are being conducted with the intention of using these practices to therapeutically improve and stimulate the flow of energy (Qi), treat diseases, promote health and longevity, mobility and agility, expand the mind, increase concentration, relieve tension and stress, anxiety, irritability, and depression, promote overall well-being and quality of life at all stages and ages²⁰⁻³³.

Traditional Chinese Medicine (TCM) takes a holistic, somatic, and bioenergetic approach, considering the balance between physical, psychological, and emotional states, with Qigong included in this approach³⁴⁻³⁷.

Qigong has an influence on our body at the level of the Nervous System due to its positive effects on the brain, which can be confirmed through electroencephalogram³⁸⁻⁴⁰. These effects influence the frequency of alpha EEG waves, making them more significant, slower in frequency, and with a more regular and synchronized rhythm in the cerebral cortex. It directly influences the sympathetic and parasympathetic nervous systems³⁵.

It also affects the Respiratory System, reducing the frequency of diaphragmatic movements and increasing thoracic capacity^{41,42}. Breathing becomes slow and controlled, and the relaxing effect has an impact on reducing blood pressure^{43,44}. A slower metabolism also contributes to the preservation of energy, which in turn strengthens our immune system⁴⁵.

In the Circulatory System, the tranquility induced by Qigong practice lowers heart rate, improves blood pressure and cardiopulmonary circulation, enhances the function of blood cells, improves the levels of high-density lipoprotein cholesterol, Apolipoprotein A1, total cholesterol, and triglycerides in hypertensive patients⁴⁴ and can consequently be an effective treatment for cardiovascular diseases and some types of chronic illnesses⁴⁶⁻⁴⁹.

The regulatory effect of Qigong on the digestive system depends on emotional balance. The practice regulates the mind and stimulates the secretions saliva and enzyme production that aids digestion^{50,51}.

This review aims to explore Qigong, as a Traditional Chinese Medicine discipline, and its possible beneficial effects for physical and mental well-being.

2. Qigong in Children and Young Students

In adolescents, attention-related difficulties are common and can affect their academic performance, overall well-being, and future⁵². In a study conducted with students who received a Qigong intervention, these showed a significant improvement in attention scores compared to the control group. Qigong practice appears to have a positive impact on the attention of students. The combination of physical movements, regulated breathing, and concentration techniques contributed to enhancing attention skills¹². Therefore, Qigong practice may help improve cognitive processes, increase self-awareness, and promote a state of relaxation and focus. These findings suggest that integrating Qigong practice into the lives of students can be a beneficial approach to support attention skills. Overall, Qigong practice offers a holistic and accessible method for addressing attention-related difficulties, potentially leading to better academic performance and overall well-being.

In addition to the potential beneficial mechanisms provided by breathing and relaxation techniques, Qigong has been associated with the stimulation of spinal reflexes, while

rhythmic stimulation is related to final peripheral execution. The data suggests that Qigong may counteract the destabilizing effect of anxiety on neuromuscular reactivity. The participants who did not practice Qigong failed to achieve these results as the school evaluation period approached, exhibiting progressively lower test performance.

On another topic, anxiety is a common issue among teenagers and can have negative impacts on academic performance and overall well-being⁵³. In a study of Rodrigues et. al²¹, students who practiced Qigong showed a significant reduction in anxiety levels compared to the control group. Qigong practice appeared to alleviate anxiety symptoms, including feelings of tension, worry, and nervousness. The combination of gentle Qigong movements, controlled breathing, and focus likely contributed to the reduction in anxiety levels. According to the authors, Qigong practice can promote relaxation, regulate the autonomic nervous system, and increase self-awareness, thereby reducing anxiety symptoms in high school students. These findings highlight the potential of Qigong as an effective intervention for addressing anxiety in high school students. It is suggested that Integrating Qigong practice into the school environment can provide students with a valuable tool for managing anxiety and improving their overall well-being. Additionally, the non-invasive nature and accessibility of Qigong make it a viable option for implementation in educational settings.

Qigong is a mind-body practice that combines gentle movements, breathing techniques, and meditation, and has been suggested as a possible intervention to improve the well-being and cognitive functioning of children and adolescents. In another study, students who engaged in Qigong practice demonstrated improvements in various areas, reporting increased emotional well-being, including reduced stress levels and an increased sense of calm and relaxation²². Additionally, there were positive effects on attention and focus, as well as indications of improved academic performance. Qigong may assist children in developing self-regulation skills, improving mind-body connection, and promoting a sense of balance and well-being. Another study's results also suggest that integrating Qigong practice into the lives of school-age children can be a valuable approach to support their overall well-being, emotional resilience, and cognitive development. By incorporating Qigong practice into school curricula, educators can provide children with a beneficial tool for managing stress, improving attention, and promoting a positive learning environment⁵⁴.

Still focusing on schoolchildren, the effects of Qigong in the treatment of behavioural disorders have shown significant improvements in the studied pathologies, especially in Oppositional Defiant Disorder (ODD) and Attention-Deficit/Hyperactivity Disorder (ADHD-HI)²⁰. It is suggested that Qigong may assist in improving behaviour, regulating the autonomic nervous system, and benefiting the academic performance.

With older children, positive results were also demonstrated in auditory attention mechanisms through White Ball Qigong, showing an increase in reaction speed. These techniques can improve cognitive capacity in various functions such as memory, learning, attention, and language¹².

For children with Autism Spectrum Disorder (ASD), Qigong techniques have shown promising results. Studies have demonstrated that Qigong interventions, such as medical massage and Neigong, can reduce the severity of sensory, behavioral, and social symptoms of autism, as well as the overall severity of ASD²³. Additionally, the studies indicated additional benefits, such as strengthening the bond between parents and children and reducing parental stress. These improvements can also have a positive impact on educational outcomes and the school environment. The study suggests that Qigong is a practical and cost-effective intervention that can be taught to therapists and parents for daily application. It has also been observed that Qigong is effective in older children, from 6 to 11 years old. Long-term, some studies have shown that about 1 in 4 children have left the autism spectrum.

Overall, these studies have shown that Qigong practitioners experienced reduced stress, increased emotional well-being, improved attention, and focus, as well as possible

enhancements in academic performance. Qigong can also help develop self-regulation skills and mind-body connection, promoting balance and well-being. Integrating Qigong into schools offers a valuable tool for stress management, improved attention, and a positive learning environment. Furthermore, Qigong has been shown to be effective in reducing anxiety in high school students, contributing to overall well-being. In summary, Qigong practice can be a beneficial approach to support the physical, emotional, and cognitive well-being of children and adolescents.

3. Qigong in Adults and Workers

Emotional exhaustion is a prevalent issue among healthcare professionals, leading to decreased job satisfaction and compromised well-being^{55,56}. Nurses who participated in a Qigong intervention demonstrated a significant reduction in emotional exhaustion. They reported feeling less emotionally drained and more resilient in dealing with the challenges of their work²⁴. Furthermore, the Qigong group exhibited lower stress levels and improved sleep quality compared to the control group. This suggests that Qigong practice not only alleviates emotional exhaustion but also contributes to overall stress reduction and improved sleep patterns. The findings of this study highlight the benefits of incorporating Qigong practice into the routines of healthcare professionals, especially during periods of high stress. By reducing emotional exhaustion and improving well-being, Qigong practice can contribute to increased job satisfaction and improved patient care. It provides nurses with a valuable tool for self-care and resilience, benefiting both healthcare professionals and the patients they serve. Overall, Qigong offers a potential path to support the mental health and well-being of nurses.

Not only nurses, but other hospital staff, including doctors, and support personnel, often face high levels of stress due to the demanding nature of their work^{57,58}. In a study, hospital employees who practiced Qigong showed a significant reduction in stress levels²⁵. They reported feeling more relaxed, calmer, and better prepared to deal with workplace stress. Additionally, improvements in anxiety levels, sleep quality, and job satisfaction were observed²⁵. Qigong practice was considered a valuable tool for stress reduction in the hospital team, as its combination of gentle movements, controlled breathing, and mindfulness techniques helped promote relaxation, improve focus, and restore the balance of the mind and body.

In conclusion, Qigong practice shows promise as a stress reduction technique for the hospital team. Its holistic approach addresses both physical and mental aspects of stress, offering a potential path to improve the well-being of healthcare professionals and promote a positive work environment.

Qigong provides a valuable tool for self-care and resilience, benefiting both healthcare professionals and their patients. The implementation of Qigong programs in hospitals can offer an accessible and effective approach to support the mental health and resilience of the hospital staff, improving overall well-being and the quality of patient care. Overall, Qigong presents a promising path to support the mental health and well-being of healthcare professionals.

The benefits of Qigong for mental health are increasingly recognized and utilized in the treatment of mental disorders and substance abuse rehabilitation. According to a meta-analysis⁵⁹, Qigong may also contribute in reducing anxiety, and drug cravings in rehabilitation.

Regarding this topic, Qigong practice in Traditional Chinese Medicine is considered effective in balancing vegetative functions and developing subconscious self-regulation. Studies have shown the benefits of these techniques in relaxation, mental focus, and emotional stability. Controlled breathing during Qigong practice is valued by both Western and TCM medicines for its ability to induce relaxation and positively affect the nervous system. Additionally, these practices promote the balance of liver, heart, and pericardial functions according to TCM, improving concentration, focus, and relaxation²⁰, therefore possibly facilitating the improvement of stress-related conditions.

4. Qigong in the Elderly

The current issues regarding global population aging and the burden of disease are worrying and can result on major implications for global health in the future⁶⁰. Therefore, addressing this population well-being is crucial.

In a study, the health benefits of the 12-week “FITxOlder” program including Qigong suggest that promoting physical activity in underserved elderly populations is promising for improving health outcomes for healthy aging and independent living⁶¹.

In another study, now focused on wounded, ill, and injured (WII) Military Service members, Qigong was reported to have assisted in coping with stress, feeling more resilient and empowered, and improving sleep⁶². Since this population is at risk for developing chronic conditions including posttraumatic stress disorder and depression, Qigong may positively affect their ability to engage in successful rehabilitation.

As well, effects of Qigong on the psychosocial well-being of the elderly confirmed that Qigong with elderly volunteers from the neighbourhood is a safe and viable social intervention for elderly depression, providing a complete exercise for the body and mind⁶³.

According to the study, Qigong is safe, easy to learn, and has been shown by several previous studies to be clinically effective. Therefore, it can be promoted and employed by healthcare and rehabilitation professionals as an adjunct intervention to improve the physical and psychosocial well-being of the elderly.

In promoting the Health of an At-Risk Community Elderly Population for Ischemic Stroke, all participants of a study described the experiential process of Qigong harmonizing their body and mind. They reported on how Qigong improved their physiological health and enhanced their psycho-emotional state²⁸.

In older patients with depression symptoms⁶⁴, as the Qigong training progressed, all participants became more aware of their bodies and how their bodies felt. They noticed benefits including pain relief, improved digestion, reduced polyuria, strengthened immunity, improved circulatory system function, and enhanced sleep quality.

The impact of Qigong mind-body exercises on motor and non-motor function and quality of life in Parkinson's disease may also be helpful in managing this debilitating disease. A Meta-analysis indicate clinically relevant effect sizes in favour of Qigong for motor function, balance, and quality of life, and significant effect sizes persisted even when comparisons were limited to active controls⁶⁵.

Overall, Qigong may contribute to healthy aging. It is a safe and feasible practice for the elderly, easy to learn, and clinically beneficial. It seems to enhance the quality of life, sleep, and improve the physical and psychosocial well-being of the elderly.

4. Conclusions

The practice of Qigong utilizes exercises that benefit both body and mind. It contributes to strengthen the immune system and improve physical fitness, mobility, and agility. It may also improve sleep quality, concentration, and assist in managing stress. Overall, it contributes actively to enhance well-being and quality of life of practitioners. None of the reviewed articles found contraindications or negative effects, from children to the elderly. Therefore, it is one of the Traditional Chinese Medicine disciplines that can be used as a complement to any other therapeutic approach, with the added advantage of being minimally invasive.

The practice of Qigong meets the needs of people in general. It consists of simple and gentle exercises that can be adapted to any physical condition and age. These exercises coordinate breathing, muscle-skeletal contraction, and expansion. They might bring benefits to healthy individuals and are also beneficial for those with various pathologies, whether children, adolescents, adults or the elderly.

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