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Review Article

Inculcation of Yoga as a Self-care Practice for Improving Mental Health among Healthcare Professionals in a Hospital Setting: Addressing through Metacognition

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A B S T R A C T

Factually speaking, most healthcare professionals suffer from stress burnout. Burnout is a state wherein one experiences work stress, which along with a heavy workload, leads to poor metacognition and mental health. Yoga acts as a well-known mind-body intervention which touches a deeper layer of the mind and purifies thoughts and emotions that may lead to better health. This article suggests evidence-based yoga practices which can be self-administered to improve metacognition and mental health. The detailed instructions regarding yoga practices can be referred to using resources mentioned in the article. Yoga exercises can be performed quite easily at the desk during breaks, session gaps, and brief time gaps. Though healthcare professionals can perform yoga exercises during office breaks at the workplace in a chair, the article recommends that they should practice yoga exercises in their homes on yoga mats. These practices will keep them fresh, aware, happy, energised and revitalised throughout the day as these practices result in the release of endorphins i.e., feel-good chemicals in the human brain. Yoga practice also improves metacognition, creating a coping ability to fight against work stress. Based on the findings, the article suggests inculcating yoga as a self-care practice for improving mental health among healthcare professionals in clinical settings.

Keywords: Yoga, Mental Health, Metacognition, Healthcare Professionals

Introduction

Factually speaking, providing consultation to healthcare professionals may be characterised as incorporating self-care practices for achieving mental health. The suggestion is nothing but helping healthcare professionals.[1] It is to provide prolonged self-administered techniques for stress management which results in good health and well-being by improving metacognition. Metacognition is the ability to recognise one's own cognition and state of mind. It has been found that alteration in metacognition is likely to cause mental disorders. Metacognition may help healthcare providers retain optimum mental health.[2] Various studies

suggest metacognition as a support strategy for mental health.[3] It is the highest level of human insight, recognised as an amalgam of cognition, thinking of thinking, and knowledge of own cognitive ability,[4] can be considered a hallmark of mental health. The term 'mental health' appears as a sense of well-being and inner strength to cope with stress, burnout, and demanding situations. It is the state wherein one can work properly and have the ability to overcome life obstacles.[5] Experiencing positive feelings and well-being at the objective (demanding situation, environmental or outside self) and subjective (internal or self) levels is known as mental health. The significant reduction of coping abilities and sense of well-being leads to the development of mental illnesses in people.

Mental disorders are leading health issues, significantly growing across populations.[6] People from different groups, regions (e.g., Asia-Pacific, Middle Eastern countries, Africa, and Europe), and sections suffer from mental health problems.[7] Mental disorders, working stress, and burnout are commonly seen in healthcare professionals. Burnout is a state wherein one experiences work stress and heavy burden.[8] It has an adverse effect on the productivity and work performance of a person. It is difficult to recognise the exact problems, but most commonly, stress affects mental health in healthcare professionals, which in turn, may affect patient safety.[9] Stress is a major cause of mental disorders and it has been found that it is a potential risk factor for the increase in depression and depressive disorders.[10,11] Work stress is characterised by negative thoughts, frustration, and anticipated anxiety among healthcare professionals at the workplace about their duty and profession.[12] Workplace stress might have many reasons, such as long duration of work, workload, high-performance expectations, work deadlines, and work division with peers.

Metacognitive disability affects one's self-belief and well-being. Many authors have pointed out that even severe mental problems can be resolved through metacognition improvement.[13] Metacognition helps to recognise the condition of one's own body and mind. It also helps individuals to fight stressful and demanding situations.[2]

Considering the widespread problems (e.g., mental disorders, working stress, and stress burnout) among healthcare professionals, it is the need of the hour to introduce possible yoga practices that can be inculcated by them in their daily lives. They need solutions to stress, mental health issues and burnout so that they manage to attain well-being and a better quality of life at the workplace. There are many psychological ways to achieve mental health needs such as mental rehabilitation, counselling, behavioural therapy, and psychotherapy. This article aimed to address self-care yoga techniques for improving mental health through better metacognition.

Review of Studies on Yoga and Mental Illnesses

This section provides a brief review of various studies showing that yoga practices are beneficial in the management of mental illnesses. Studies have found that yoga is beneficial for people with mental disorders, particularly psychological distress, depression, and mood and anxiety disorders. An article that reviewed seven research articles concluded that yoga reduces mental disorders like mental distress, depression and anxiety disorders.[14] As per another review of 20 studies, yoga and meditation were found to be very beneficial in managing depression, and mood and anxiety disorders. Almost all studies have shown a significant reduction in mental health disorders after different yoga and meditation practices.[15] The positive impact of different kinds of yoga intervention on major depressive disorders and symptoms in persons with health problems has been shown in numerous studies. Studies have also shown a significant reduction in stress and depressive symptoms in people after practising yoga.[16–21]

A recently published study titled 'Yoga for mental disorders' showed that certain yoga interventions significantly reduce anxiety disorders, post-traumatic stress disorders and depressive symptoms.[22] A systematic review titled 'Yoga as a complementary therapy for depression' reviewed eighteen studies that recommend yoga for treating depression.[23] Recently, Bridges and Sharma published a review article that focused on 23 research articles published between 2011 and May 2016.[24] This short review appears to support the belief that yoga intervention is very effective in reducing mental health problems.

Yoga for Metacognition and Stress Management: Underlying Mechanism

Research studies have reported that stress causes disturbance in endocrine hormonal secretions that depend on autonomic systems. Yoga is a mind-body medicine, that involves mindfulness practices and muscular activity, viz. yogasanas, pranayama, and dhyan.[25] It regulates autonomic functions, manages stress by reducing sympathetic activity and reduces depression by stimulating the parasympathetic nervous system.[26] It is a well-known fact that the metacognition ability depends on the functioning of certain brain regions like the prefrontal cortex, anterior cingulate cortex,[27–29] parietal cortex, and the mid-brain[27]. The functions of these brain areas are likely to be enhanced through distinct yoga practice and meditation techniques useful in improving metacognition.[30]

The underlying mechanism refers to how yoga works and how it is effective in the improvement of metacognitive abilities. The scientific underlying process by which yoga improves metacognitive ability is not completely understood. More research is needed to fully elucidate this

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process. However, current theories suggest that yoga may enhance metacognitive abilities by strengthening various cognitive and neural systems.[31] One theory is that yoga practice increases mental calmness by strengthening the brain's nervous system.[32] Previous research has shown that Vipassana meditation (a yoga practice) can specifically increase activity in the frontal lobes of the brain, which helps to regulate alertness, awareness, and cognition. Through continuous practice of yoga, mental disorders are cured, which increases calmness and self-awareness. As a result, the possibility of increasing the metacognitive ability of a person increases. Another theory is that yoga techniques enhance metacognitive skills by increasing the plasticity of the brain.[33] Plasticity refers to the ability of the brain to reorganise itself. As a result of the reorganisation of the nerves, the brain does its work smoothly. Information starts to be processed properly in the brain, which improves cognition. Thus, yoga can enhance the brain's metacognitive abilities while reducing stress and anxiety.

Literature Review of Yoga for Metacognition

One review article summarises the evidence pertaining to the impact of yoga practices (e.g., loosening exercises, breathing practices, postures, breath regulation, meditation, and mindfulness) on good health and well-being.[34] Till now, only three intervention studies have tried to analyse the effect of yoga practice and meditation on metacognition. The yoga interventions include hatha yoga, raja yoga (meditation practice), pranayamas, and shabd yoga meditation. An intervention-based study found that a 20-week practice of Surat-Shabd-yoga meditation improved the metacognitive awareness and metacognitive regulation of thinking patterns. Naïve meditators, intermediate meditators, and advanced meditators participated in the study and their metacognitive components were compared. Metacognition domains were recorded using a self-reporting questionnaire. The results showed a significant difference in the metacognition of naïve, intermediate, and advanced meditators. It was found that advanced meditators had minimum unrelated thoughts before the meditation practice in comparison to other groups.[30] A three-armed randomised study found that three types of yoga interventions (hatha yoga, raja yoga, pranayama) improve metacognitive domains viz. metacognitive knowledge and metacognitive regulation skill of college students. The participants were randomised into three intervention groups each consisting of 20 members. The duration of yoga training was 30 days.[35] The third research evidence (by Uopasai and his colleagues)[36] explored the effect of meditation (a yoga practice) on metacognitive ability, working memory ability, academic achievement, and stress levels in undergraduate students. It used a quasi-experimental pretest-posttest research design to evaluate significant changes in the independent variables among students at a public university in Thailand following a meditation programme. The study consisted of 60 randomly selected healthy samples (30 males and 30 females), allocated to experimental group (n = 30, male = 15, female = 15) and control group (n = 30, male = 15, female = 15). They were assessed using three questionnaires: metacognitive awareness inventory, Thai working memory computerised battery test, and Suanprung stress test. The univariate analysis was employed for statistical analysis. Results demonstrated that there were no significant differences between the two groups in metacognition, working fmemory, and stress at baseline, whereas after intervention, significant differences were reported in all three variables. The study concluded that meditation can successfully enhance metacognition by reducing stress levels among undergraduate students. In addition, one systematic review and meta-analysis showed that yoga interventions are beneficial in work-related stress, perceived stress, and mental disorders.[37] Yoga practices balance the states of emotion and mood by regulating endorphins (feel-good chemicals) and serotonin[38] that can develop coping abilities against stress.

Different Yoga Practices for Metacognition: Evidence-based

This section provides different types of yoga practices that help in improving metacognition through research evidence. An empirical paper using three yoga interventions studied the effect of pranayama (first group), hatha yoga (second group), and raja yoga (third group) meditations on metacognition.[35] The study employed pranayama practices such as anulom-vilom pranayam, kapalbhati, bhramari pranayama, and Om mantra chanting. The employed hatha yoga practices included padmasana, vajrasana, ardha kurmasana, paschimottanasana, halasana, setu bandhasana, virabhadrasana-I, virabhadrasana-II, virabhadrasana-III, and vrikshasana. The raja yoga meditation included simple meditative practices like focused self-awareness and concentration on the present task.

Another empirical paper explored the effect of an intervention on metacognition and mind wandering, wherein the authors employed Surat-Shabd-Yoga meditation, based on the oriental aspect of the Radhasoami philosophy. This is a sound meditation in which four sounds Ra-dha-soa-mi are practised at four chakras - navel, heart, throat, and eyebrow centre.[30]

Mindfulness is an important part of the metacognitive ability. Metacognitive regulation and control of cognitive processes are associated with mindfulness meditation practice.[39] In this context, anapanasati meditation was found to be good in managing a distorted state of mindfulness by improving attention. Retaining concentration and awareness while facing cognitive tasks and control of mental movements are also part of metacognitive ability.[36]

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Other Suggested Yoga Practices for Improving Metacognition

This section suggests various yoga practices with proper instructions and journal references. Research studies suggest enlisting yoga practices with the aim of managing stress and enhancing metacognition and mental health. The following are the yoga practices along with brief instructions (textual evidence and research evidence) which can be employed by healthcare professionals to tackle their mental disorders, work stress, and develop metacognitive ability. The yoga practices are extracted from traditional yoga texts[40,41] and the benefits are mapped with scientific research articles. The hospital officials should encourage the professionals to adopt yoga practices in their daily lives. This would enable them to revive their mental strengths, metacognition, and their work performance.

Yogic Loosening Exercises

These exercises loosen the joints and reduce muscle stiffness, which prepares for other yoga exercises. The practices also improve blood circulation in various body parts and help individuals cope with stress and attain mental health. Most of these practices can be done while being seated on a chair except for standing postures. The two common instructions in all practices (while sitting on a chair) are to sit comfortably while keeping the feet on the floor and to keep the neck and spine in an upright position. The loosening exercises are finger stretch (hand clenching), elbow bending, neck bending and rotation, and spinal twisting.

Standing Yoga Postures

- **Hands stretch posture (*hastottanasana*):** This posture helps an individual attain steadiness and stability. The posture also clears up the congestion of spinal nerves, stretches the muscles, and improves blood circulation and brain functioning.
- **Hands-to-foot posture (*padahastasana*):** This posture makes the spine flexible and improves blood circulation and brain functioning. Avoid this practice in the case of myopia, vertigo, migraine, spine problems and cardiovascular problems.

Sitting Yoga Practices

These practices consist of breathing exercises and pranayama which help individuals to keep their mind in the present moment. These practices are remarkably effective in improving mindfulness apart from the specific benefits.

- **Abdominal breathing:** This involves breathing (inhalation-exhalation) with bulging movement (in and out) of the abdomen. It relaxes the internal visceral organs and improves blood circulation in them.[42]
- **Alternate nostril breathing (*nadi suddhi*):** It involves breathing (inhalation-exhalation) through the left and right nostrils alternatively. It is a good breathing activity to balance the autonomic nervous system and maintain the awareness of the present moment.[43]
- **Cooling pranayama (*sheetali*):** The cooling pranayama helps to keep the mind-body cool. It brings harmony to the physical body and autonomic functions and calms the mind.[44,45]
- **Humming bee breath (*bhramari pranayama*):** In this pranayama, a honeybee sound is produced. It creates resonance around the head region. Sound resonance has a soothing effect on the brain and nervous system.

Meditation Practices

Meditation is an unbroken or uninterrupted flow of focus/attention on an object or point. It is practised with an aim to achieve a state of mental stability by removing agitations. Here, awareness becomes effulgent, and the mind becomes still in a state where there is no mind wandering. After the meditation practice, the attention, self-awareness, self-regulation, and self-consciousness of individuals become sharp which really helps in metacognition. These benefits of meditation practice have been addressed in many research studies.[46–49]

- **Mindfulness meditation:** Mindfulness is one of India's most ancient meditation techniques. It is the process of self-purification by self-observation. One begins by observing the natural breathing (incoming and outgoing breath) to concentrate the mind. The participants are asked to maintain awareness of natural breathing patterns without any manipulation, alteration or regulation.
- **Sound meditation:** Soothing music (e.g., Om sound or instrumental music) is played on a mobile phone in this exercise. The participants are asked to gently close their eyes and shift their attention to the music. They may also bring their attention to some other gentle sounds. They are requested to just listen and merge their awareness with the sounds. Their minds may wander but they have to bring their attention back to the sound. They should keep their attention on the sound, if they can, for two minutes. After the practice, they are asked to open their eyes, come back to their normal position, and relax.

Instructions and Recommendations for using Yoga Practices

When to Engage in Daily Yoga Practice?

Most health professionals sit in chairs and behind desks. The mentioned yoga practices take fewer than two minutes to complete and they can practice the entire yoga in 25–30 minutes. The meditation and relaxation techniques take more than two minutes to provide the best and long-term

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health benefits. Individuals can practice all yoga exercises if time permits. However, during the break at the workplace, the entire practice cannot be done. This article recommends that healthcare professionals should practice all yoga exercises at their homes on yoga mats. Yoga exercises can be performed quite easily at the desk during breaks, session gaps, and brief time gaps. They can also practice these exercises in the morning and before going to bed. Short-term yoga practice can be effective as the practices reduce body pain, tension, headache, and stress. They can be practised in a short time and will keep them fresh, aware, happy, energised and revitalised throughout the day as these practices release endorphins.

How to Engage in Daily Yoga Practice?

The suggested yoga practices are feasible, have no side effects and can be practised while sitting in a chair without removing shoes, footwear, tie, belt, and attire. One can loosen the tie and belt so that inhalation and exhalation are performed without interruption. One should not be in a hurry to complete any yoga practice and should take sufficient time for yoga practice. Changes that happen in the body and mind during yoga practice should be observed. One should not engage in yoga practice after a heavy meal. However, one can practice alternate nostril breathing, humming bee breath, cooling pranayama, meditation, and relaxation techniques after a meal too.

Strategies to Promote Regular Yoga Practices among Healthcare Professionals

The hospital administrative staff and officials can build a well-furnished yoga hall for healthcare professionals where they can go and practice yoga. The yoga hall should be equipped with yoga mats, drinking water, clean space, and a window. Though the discussed yoga exercises can be practised in an office chair, it is best to practice them in a calm and serene room. The administration should also provide enough time for yoga practice. Hospital workplaces can recruit two to three yoga therapists or yoga teachers who can provide brief yoga sessions to healthcare professionals. It is also best to schedule at least three yoga sessions (morning, afternoon, evening) in the hospitals and provide the healthcare professionals with a choice to attend any session.

Potential Impact of Yoga Practices on Good Health and Well-being

- **Metacognition:** Yoga exercises improve self-belief, knowledge of own cognitive abilities, and metacognitive regulation skills.
- **Mental health:** Yoga develops coping ability against stress and improves mood states. It helps in managing depression and depressive symptoms.
- **Cognitive and brain functions:** Yoga helps to enhance execution, attention, perception, working memory, psychomotor performance, and information processing speed for better work performance.
- It helps in improving the capacity of the lungs, developing immunity, and keeping the blood pressure normal.
- It provides relief from headaches, migraine, psychological distress, and workload stress.
- **Physical strengths:** Yoga practices tone up and relax the muscles, and improve blood circulation in the entire body.

Conclusion

Yoga practices have a positive effect on the body, brain, and mind. Certain yoga practices have been found to be very beneficial in stress management, metacognition, and mental health. Yoga takes a person on an inner journey and boosts mood and metacognition by regulating neuroendocrine activity. Based on the review, the article suggests inculcating yoga as a self-care practice for improving mental health among healthcare professionals in clinical settings to help them cope with stress and burden.

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