EFFECT OF YOGA ON STRESS MANAGEMENT IN HEALTHCARE PROFESSIONALS: A SYSTEMATIC REVIEW

ABSTRACT

Background

Healthcare professionals provide health services, maternity and child health services, sanitation, national health programme, health education, etc. are just a few of the many duties that they are responsible for. Due to a number of variables, providing healthcare in rural and urban locations is a demanding work for healthcare professionals. Stress is a state of stress, either emotional or physical. Any circumstance or idea that gives you cause for annoyance, rage, or anxiety can trigger it. Your body's response to a demand or challenge is stress. Stress can occasionally be advantageous when it helps you avoid danger or achieve a deadline. Yoga is a mind-body practice that combines physical poses, controlled breathing, and meditation or relaxation. Yoga helps reduce stress, lower blood pressure and lower heart rate. There are few systematic reviews about this.

So present study is designed to systematically review the effects of yogic practices on stress management.

Content

Using Pubmed, Google scholar & Indian database electronic searches were performed using keywords Yoga, Stress management & Healthcare professionals which occurs in 77 studies.

Selections were made to include only studies written in English, published in peer reviewed journals & investigating effects of regular yogic practices on stress management in this study.

Summary

It seems that yoga can help healthcare personnel manage their stress. The reasons which contribute to workplace stress were highlighted, along with the belief among healthcare professionals that yoga practices can improve one's physical, emotional, and mental health. For people who do yoga and mind-body meditation, physical issues and sleep quality improve, stress levels drop, and exhaustion continuously decreases.

So present study is designed to systematically review the effects of yogic practices on stress management.

Comment [a1]: Also collect from Web of Science, Science Direct, Scopus etc for enhanced quality of the articles of reference.

Comment [a2]: Improvement in the language is required.

Keywords: Yoga, Stress & Health care professional

1.0. INTRODUCTION

1.1. HEALTHCARE PROFESSIONALS:

Health professionals maintain health in humans through the application of the principles and procedures of evidence-based medicine and caring. Health professionals study, diagnose, treat and prevent human illness, injury and other physical and mental impairments in accordance with the needs of the populations they serve. (World Health Organization, 2013)They advise on or apply preventive and curative measures, and promote health with the ultimate goal of meeting the health needs and expectations of individuals and populations, and improving population health outcomes.

The field includes those who work as a physician, surgeon, physician assistant, pharmacist, pharmacy technician, medical assistant, nurse, physical therapist, occupational therapist, dentist, midwife, psychologist, psychiatrist or who perform services in allied health professions. A health professional may also be a public health or community health practitioner.

Work-related stress is a potential cause of concern in health care workers and is associated with decreased job satisfaction, days off work, anxiety, depression, sleeplessness, medical errors, and near misses. Decreased job satisfaction inevitably results in negative results and in negative attitudes toward one's work, family, and ultimately, self.(Mehta et al., 2018) Chronic overstress often state as burnout. Emotional illnesses can lead to anxiety disorders, addictions, depression, eating disorders, and suicide. Poor health in turn, reduces human efficiency due to lack of alertness, focus, absenteeism, and other similar problems. Healthcare professions are among the first six most stressful ones. Not all health professionals develop the same level of stress, and not all of them develop signs of professional burn-out either. According to several studies, Intensive Care Unit medical/nursing staff report that dealing with death is their first source of stress, compared to nurses who work in Internal Medicine or Surgical Departments. For those professionals, workload and adequate manning is their most important stress source. According to other studies, surgical nurses assess the emotional aspect as less important compared to their colleagues in oncology and hematology departments. In general, healthcare professionals are more prone to stress and professional burn-out, because they are responsible for human lives and their actions – or lack of action – can have a serious impact on their patients.

(Koinis et al., 2015)The effects of stress on the staff fall within the following categories. i) Subjective experiences (stress, depression, anxiety, emotional withdrawal, gradual loss of

empathy towards the patients). ii) Physical consequences (the whole range of psychosomatic conditions, short-duration, migraines, skin rashes, irritable bowel syndrome, cardiovascular diseases and strokes). iii) Behavioral changes (irritability, alcoholism, addictive behaviors). Stress can compromise a professional's ability to provide high quality care to his/her patients, since it can promote professional burn-out and recurring depressive episodes. Finally, work-related stress can have an impact on the professional's family by decreasing their overall quality of life.

1.2. STRESS

Stress means situations that release emergency signals on stimuli. Stress is an essential part of life. However, in today's life, stress has increased so much that it is creating various diseases such as obesity, gastric ulcers, hypertension etc. There is an increase in the cases of depression, suicide, alcoholism, substance abuse, delinquency, murders, road-rage, murder, social withdrawal. This increase reflects the ill-effects of stress. (Kumar et al., 2015)Stress is a normal biological reaction to a potentially dangerous situation. When a person encounters sudden stress, the brain floods the body with chemicals and hormones such as adrenaline and cortisol.

1.3. YOGA

(Vasavaraddi, 2015)Yoga is an art and a science of good health. It is a spiritual practice founded on a highly subtle science that aims to harmonise the mind and body. The word "Yoga" comes from the Sanskrit root "YUJ," which means "to join," "to yoke," or "to unify. According to yogic texts, practising yoga results in the "unification" of a person's consciousness with the awareness of the universe, signifying perfect balance between the mind and body. According to the Yogic Sutras of Patanjali, the main goal of "unifying" a person's spirit with the spirit of God. In the Yoga Sutras (2.1), the term "kriya yoga" has a technical connotation that refers to the "practical" elements of the philosophy, i.e., the "union with the sublime" through the execution of responsibilities in daily life. However, the widely practiced Yoga Sadhanas (Practices) are**: Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana (Meditation), Samadhi /Samyama, Bandhas & Mudras, Shat-karmas etc**.

Yama's are restraints and **Niyama's** are observances. These are considered to be prerequisites for the Yoga Sadhanas (Practices). **Asanas**, are the body practices which provide stability in the body to perform Sadhna , giving ability to maintain a body position for a considerable length and period of time as well. **Pranayama** is a breathing practice which helps to create an awareness about the Pranic body and its energetic flow in the body. It contains three processes which are Inhalation (Svasa), Exhalation (Prasvasa) and Holding of Breathe (Kumbhak) practices which

helps in reducing stress and improves mental well-being of a person. **Pratyhara** indicates detachment of one's consciousness (withdrawal) from the sense organs which helps to centralize the mind and expand the self-awareness in one's mind. **Dharana** indicates a broad-based field of attention (inside the body and mind) which is usually understood as concentration. It binds the mind towards a particular subject or object. **Dhyana** (Meditation) is contemplation towards the self and spreading calmness and peace in one's mind. **Samadhi** – integration; the final stage of yoga which is beyond the objects and thoughts. **Bandhas and Mudras** are practices associated with pranayama. They help in centralizing the pranic energy in one's body and some specific techniques to follow these to complete sadhna.

Shat-karmas are purification procedures, help to remove the toxins accumulated in the body and are clinical in nature.

Many studies have shown the effect of yoga on stress in different body systems. There is a need for systematic review of relevant literature to determine that regular yoga practices are very much helpful in stress management.

1.4. MBSR

(Kumar et al., 2015)Mindfulness is a form of self-awareness training adapted from Buddhist mindfulness meditation. It refers to non-judgmental awareness of moment-to-moment experience. Through mindfulness practice, a person intentionally pays full attention to whatever is occurring in the present moment without judging it. Mindfulness is a skill, and like learning a musical instrument, is developed through repeated daily practice. An intended result of mindfulness practice is the development of a mental orientation of mindfulness toward daily events providing enhanced mental/emotional flexibility and clarity to deepening one's enjoyment of life and making one more skillful in facing life's challenges.(Schneiderman et al., 2005) MBSR as an intensive structured training in mindfulness meditation has proved its efficacy in different population in different parts of the world.

Therefore, in this review research studies investigating effects of Yoga practices on stress for healthcare professionals.

2. 0. LITERATURE REVIEW

(La Torre et al., 2020) Yoga and mindfulness administered together seem to be effective to reduce stress and anxiety in health care workers, providing them with more consciousness and ability to manage work and stressful demands.

(Barattucci et al., 2019) the positive relationship between emotional regulation, perceived stress

and anxiety decreases by extending the effectiveness of IARA in improving emotional regulation and well-being in non-clinical samples.

(Devi et al., 2018)Stress reduction can be achieved through better life style pattern, learning traditional medical systems that use Yoga, meditation, prayer, guided imagery, recitation, singing, drumming, chanting that effectively build their present awareness, attention and harmony.

(Thimmapuram et al., 2017)According to Study Meditation offers an accessible and efficient method by which physician and nurse burnout can be ameliorated and wellness can be enhanced.

(Hersch et al., 2017)The BREATHE web-based program can be an effective means of reducing nurse's perceived stress related to issues of death and dying, conflict with physicians, inadequate preparation, and conflict with other nurses, work load, and uncertainty concerning treatment.

(Alexander et al., 2015)According to this study, Yoga practice may be an effective strategy for health promotion among nurses and may lead to a reduction in experiences of burnout.

(Chu et al., 2015)Mental health professionals experienced a reduction in work-related stress and an increase in autonomic nerve activity in a weekly Yoga program.

(Sulenes et al., 2015)Significant positive relationship between level of personal Yoga practice and willingness to refer patients to Yoga. The importance of developing strategies to make health professionals more aware of the merits of yoga, regardless of whether they themselves are yoga practitioners.

(Brems et al., 2015)According to study, the findings have implications for strategies that may help motivate health professionals toward a Yoga practice, because having done yoga personally may be related to a willingness to perceive the benefits of and to refer patients to yoga as a viable integrative treatment for patients.

(Irving et al., 2014)MBSR, are the salience of the group experience and support, discovery of acceptance as well as the realization that some degree of frustration and/or distress is part of learning and establishing a mindfulness practice.

(De Vibe et al., 2013) Female medical and psychology students experienced significant positive improvements in mental distress, study stress, subjective well-being and mindfulness after participating in the MBSR programme.

(Barbosa et al., 2013)MBSR practices results provide supportive evidence for a behavioral intervention to reduce anxiety and increase empathy among graduate healthcare students.

(Goodman & Schorling, 2012)a continuing education course based on mindfulness-based stress reduction was associated with significant improvements in burnout scores and mental well-

being for a broad range of healthcare providers.

(Martín-Asuero & García-Banda, 2010a)the combination of observation and acceptance of the contents of our thoughts and of physical sensations, promoted by MBSR, is capable of reducing rumination, negative affect and the perception of stress, and as a result psychological distress is significantly reduced.

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3.0. Materials & Methods

Search articles for this systematic review were identified by accessing Pubmed, Google Scholar & Indian database. Each database was searched using keywords Yoga, Stress & Healthcare professionals.77 studies were identified for initial evaluation.

Among 77 studies, 39 were excluded because of no relevance or research type (review) by viewing the titles. 10 articles were removed from the database because they were on stroke, and psychological techniques.6 articles were excluded because of abstract given.

2 Case Study and 6 Pilot Study were excluded.

Finally, 14 trials were selected as they met criteria for final review.

3.1. Inclusion criteria

- Published in English
- Had clear diagnostic for stress management
- Includes MBSR (Mindfulness Based Stress Reduction) techniques
- Must include Health Care Professionals like medical students, medical and para-medical staff (Doctors, Nurses& Mental health care professionals) etc.
- Research papers taken from 2010-2020
- Age group 18-40 years

3.2. Exclusion criteria

- Related to other disease

- Except yoga, other treatment like Naturopathy, Ayurveda
- Abstract
- Review papers
- Research papers before 2010
- Case study & Pilot Study

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3.3. Materials & Methods- Flow Chart

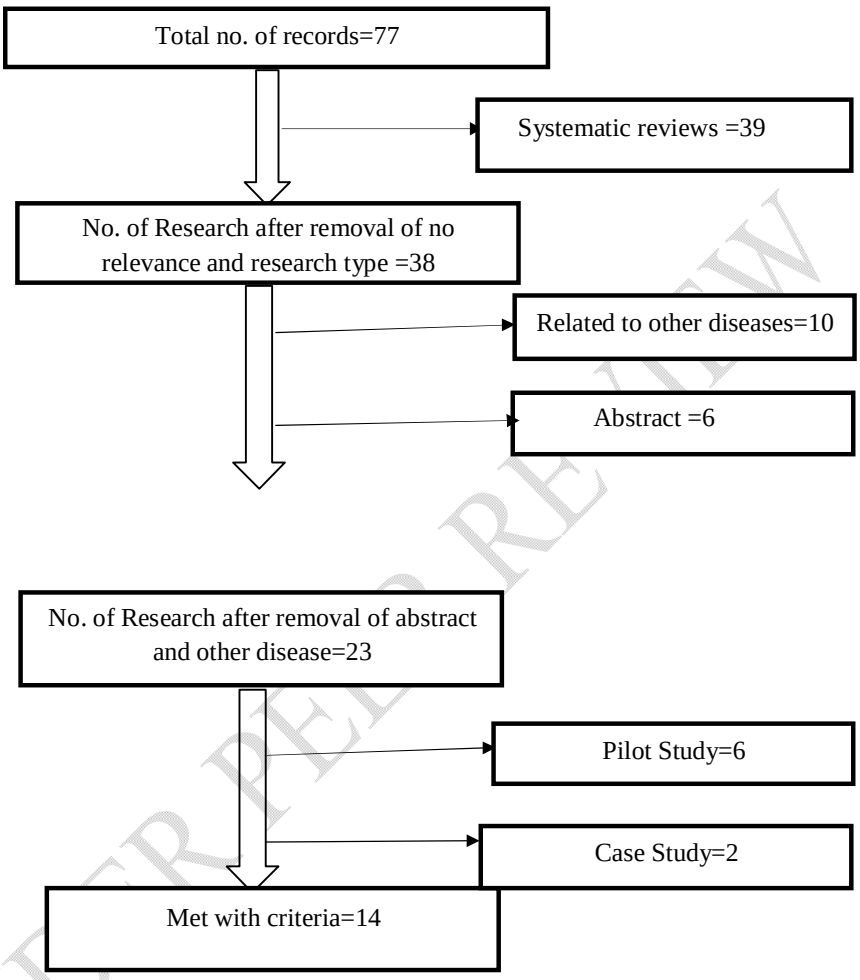

Fig 1: **SCHEMATIC REPRESENTATION OF STUDY SEARCHING AND SELECTION AS PER CRITERIA.**

4.0. Results & Discussion

Search yielded a total of 77 trials, of which 14 met criteria for final review. All studies including efficiency and productivity as one of the parameters. Many studies included burnout and fatigue as one of the parameters.

The majority of studies demonstrate a drop in stress levels and an improvement in efficiency and productivity at work. The quantity of burnout and exhaustion among people is significantly reduced. According to several studies, there hasn't been a substantial difference between the parameters of the experimental group and the control group. They have, however, raised the prospect of better outcomes over a longer duration of time. Yoga practices have been shown to be helpful in reducing stress and the negative effects of stress that comes with it.

Health professionals experience work-related stress from work or work-related factors. The work-related stress can result in fatigue, anxiety, depression, reduced work capacity, and even symptoms of burnout.

Results demonstrated the impact of yoga practices on the alleviation of stress symptoms. Yoga exercises are a successful approach for nurses to promote their health and reduce stress. Yoga offers encouraging results and the ability to reduce stress and anxiety and improve quality of life (Quality of Life).

Yoga and mindfulness administered together are effective to reduce stress and anxiety in healthcare workers, providing them with more consciousness and ability to manage work stressful demands.(La Torre et al., 2020). The effectiveness of MBSR to decrease distress and its applicability in training programs for health professionals.(Martín-Asuero & García-Banda, 2010b)

The effectiveness of yoga and mindfulness can be drawn, since almost all the measured parameters showed an improvement. The most evident outcome was the reduction of anxiety.

5.0. Conclusion

MBSR (Mindfulness Based Stress Reduction) techniques are beneficial practices for healthcare professionals to manage the stress. MBSR also appeared to reduce anxiety and increase empathy. MBSR techniques significantly improve sleep quality and duration.

Yogic practices are very effective to manage the stress and anxiety. Yogic practices help to manage cortisol level and emotional exhaustion in body. Practices helps to reduce anger and fear and increase the empathy towards others and management of time and work adaptation increase.

5.1. Recommendation Practices

Comment [a5]: Mention the reference based on which the recommendations are being made

Some yogic practices are recommended for healthcare professionals to manage the stress:

Table1: Recommended yoga practices

S. No.	YOGIC PRACTICES	
1	**Shatkarma**	Jala Neti, Kapalbhati, Kunjal
2	**Sukshm Vyayam**	Neck Movements, Shoulder Movements, Hand Movements
3	**Asana**	**Standing Asana:** Tadasana, Katichakrasana, Trikonasana
4		**Sitting Asana:** Bhadrasana, Gomukhasana, Ardhaushtrasana
5		**Prone lying Asana:** Shalabhasana, Bhujangasana, Shashakasana
6		**Supine lying Asana:** Setubandhasana, Pawanmuktasana, Savasana
7	**Pranayama**	Nadishodhana pranayama, Bhastrika pranayama, Bhrahmari pranayama
8	**Meditation**	Om meditation, Breathing meditation

6.0. Study Limitations:

- Practices should give in the article so that reader can follow it. Detail of practices had not given in some articles.
- Consideration should also be given to appropriate measurement of spiritual aspects of yoga.
- Studies should consider a longer period of follow to check long term efficacy &long-term acceptability.
- Author should also explain the MBSR techniques in detail.

Table 2. STRESS MANAGEMENT THROUGH YOGA FOR HEALTH CARE PROFESSIONAL

S.no	Author's name & Year	Publication	Research study	Popul.	Intervention	Duration	Measures taken	Outcomes
1.	Giuseppe La Torre, 2020	Journal of clinical medicine	Single-arm clinical trial	n=48	1.5–10 min of starting session with motivational purposes 2. 30 min of breathing, posture, and sound exercises meant to achieve benefits for work-related stress and burnout 3. 20 min of pranayama, aiming at slowing and controlling breathing with diaphragmatic respiration exercises to reduce perceived anxiety. The most used pranayama were "bastrika" breathing, NadiShodana, alternate nostrils breathing, and breathe of fire. 4. 20 min of specific meditation exercises with movements and postures for releasing tension, relieving fatigue, and	4 weeks		Anxiety, fear, weakness, and anger ↓ Improved consciousness and ability to manage work stressful demands ↑

					achieving mental well-being. 5. 5 min of mantra 6. 10 min of relaxation			
2	Massimiliano Barattucci 2019	Google scholar	Randomized pre-post evaluation	n=497	MBSR	6 months	IARA Model Anxiety: Zung Self-Rating Anxiety Scale (SAS) Difficulties in Emotion Regulation Scale (DERS-36)	Better emotional regulation, ↑ anxiety and stress reduce ↓
3	Dr.B.Lavanya Devi 2018	IOSR Journal of Dental and Medical Sciences	Cross sectional study	n=303	Regular physical exercise or yoga or both	6 months	Holmes-Rahe Scale DASS score	Build up lifestyle Improved awareness↑ Harmony and peace↑
4	Jayaram Thimmapuram 2017	Journal of Community Hospital Internal Medicine Perspectives	Cohort trial	n=47	Heartfulness meditation	12 weeks	Maslach Burnout Inventory (MBI) Emotional Wellness Assessment (EWA)	Burnout decrease↓ Conflict reduces↓ Stress adaptation↑
5	Rebekah K. Hersch 2016	Pubmed	Randomized controlled study	n=104	The BREATH	Not given	Nursing Stress Scale (NSS)	Conflicts with colleagues reduced↓ Workload decrease. ↓
6	Gina K. Alexander 2015	CONTUING EDUCATION	Pilot-level randomized controlled	n=20	Kundalini yoga	8 weeks	Postural alignment, deep breathing, Monitor the mind with simple meditations.	Higher self- care↑ Emotional exhaustion and depersonalization

		GOOGLE SCHOLAR	trial					↓
7	Shu-Ling Lin 2015	ORIGINAL PAPERS GOOGLE SCHOLAR	Randomized Controlled Trial	n=60	Abdominal breathing, cooling breath, and bellows breath, followed by forced abdominal breathing, meditation, Body stretching positions.	12 weeks	Work-related stress scale Stress adaptation scale	Work-related stress ↓ Stress adaptation of mental health professionals↑ . Autonomic nerve activity ↑
8	Kari Sulenes 2015	The journal of alternative and complementary medicine	Mixed-model analysis of variance	n=1500	Yogic practices	4 weeks	Ethical practice, personal observances, posture practice, breathing exercise, sense withdrawal, concentration practices, meditation, and absorption.	Skeletal symptoms increase↑ Psychological symptoms increase↑
9	Christiane Brems 2015	Google scholar	Survey	n=1585	Yoga practices	4 weeks		Physical pain↓ Flexibility↑ Relaxation ↑
10	Julie Anne Irving 2015	Original papers	Interview and Cohort study	n=26	MBSR Internal and external landscapes Awareness Culture Focus, observe, acceptance, change Self and others	3 weeks	Enhancement of awareness, mindfulness practices (informal and formal), internal and external context, group experience, mindful strategies & Consequences for self and others.	Self-compassion increase↑ Awareness and attention increase↑
11	Michael de Vibe 2013	BMC Medical Education	Randomised Controlled Trial	n=288	MBSR	7 weeks	'General Health Questionnaire, Maslach Burnout Inventory Student version, Perceived Medical School Stress, Subjective Well-being, and	Positive improvements in mental health↑ Distress, study stress, subjective

							Five Facet Mindfulness Questionnaire'	well-being↓
12	Peter Barbosa 2013	Original Research Paper	Quasi-experimental trial	n=33	MBSR	2 months	Jeerson Scale of Physician Empathy	Anxiety ↓ Empathy↑
13	Matthew J. Goodman 2013	Google scholar	Pre-post observational study	n=93	MBSR	8 weeks	The body scan, mindful movement, walking meditation and sitting meditation	Improvements in burnout scores and mental well-being. ↑
14	Andrés Martín-Asuero 2010	Research gate	Semi-experimental study	n=29	MBSR Meditation and Yoga Stretches	8 weeks	Psychological Distress Questionnaire The Positive and Negative Affect Scale (PANAS) Emotional Control Questionnaire (ECQ) Perceived Stress Scale (PSS)	Psychological distress ↓ The negative component ↓ The positive component did not change.

Table 3 DETAILS OF YOGA PRACTICES

AUTHOR'S NAME	INTERVENTION YOGA GROUP
Giuseppe La Torre	30 min of breathing, posture, and sound exercises and burnout (shoulders, neck, hips, and leg muscles were the most treated body district) 20 min of pranayama. 20 min of specific meditation exercises with movements and postures 5 min of mantra 10 min of relaxation
Massimiliano Barattucci	MBSR
Dr.B.Lavanya Devi	Yoga, meditation, prayer, guided imagery, recitation, singing, drumming, chanting that effectively build their present awareness, attention and harmony.
Jayaram Thimmapuram	Heartfulness meditation practice asks participants to sit comfortably and gently focus their attention, with eyes closed, on the source of light within the heart.
Rebekah K. Hersch	The BREATHE
Gina K. Alexander	Kundalini yoga
Shu-Ling Lin	Abdominal breathing, cooling breath, and bellows Breath, followed by forced abdominal breathing, meditation, body stretching positions.
Kari Sulenes	Posture practice, breathing exercise, and mindfulness or meditation Practices
Christiane Brems	MBSR & Yoga practices combined
Julie Anne Irving	MBSR
Michael de Vibe	MBSR
Peter Barbosa	MBSR
Matthew J. Goodman	MBSR
Andrés Martín-Asuero	MBSR

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