

Role of Yoga in stress management – NHS observational pilot study

Gee Gahir

Summary

Recently qualifying as a stress management consultant and working within the NHS environment presented a perfect opportunity to explore the impact of yoga as a stress management tool. Over the last ten years I have personally benefited from yoga as a form of stress management – either sitting at a desk or driving long hours in the car. The current climate within the NHS presents a perfect opportunity to explore innovative ways of health care.

So, what are the facts? Teaching, health and social work are the three sectors with the highest levels of stress in the UK. Work-related stress is defined as a harmful reaction that people have to undue pressures and demands placed on them at work. The latest figures for 2011/12 are shocking.

1.1million working people suffered from a work-related illness, with 10.4 million working days lost. What is worse, the number of NHS staff reporting stress through the NHS survey has risen ^a. Statistics show 70% of initial GP consultations are stress related and the most common treatments for stress are antidepressants or CBT.

Health practitioners agree stress is the underlying cause and fundamental reason for the top 5 chronic diseases in the UK and indeed the world – Heart disease, Respiratory, Diabetes, Cancer and Mental health ^b

NHS employees were invited to attend stress awareness workshops between February – May 2014.

Although NHS staff were aware of the basic mechanics of stress, the majority were struggling to find stress management solutions which could be easily adapted into their lifestyle and workplace environment.

A series of simple chair based asanas were introduced, basic breathing techniques and pressure points which could be incorporated into their regular surgery hours, in between patients.

Three 40 minute workplace workshops took place, with a total of 26 attendees. 100% attendees said they benefited from the yoga techniques and agreed to incorporate it into their daily practice. 100% found the stress awareness program of value.

A 6 month follow up has been organised in October with view to exploring the use of yoga for preventative healthcare.

Introduction

The state of the mind and that of the body are intimately related. If the mind is relaxed, the muscles in the body will also be relaxed. Stress produces a state of physical and mental tension. Yoga is recognized as a form of naturopathic mind-body medicine. In yoga asanas and breathing exercises improve muscle strength, flexibility, blood circulation and oxygen uptake as well as hormone function. In addition, the relaxation induced by breathing & meditation helps to stabilize the autonomic nervous system with a tendency towards

parasympathetic dominance. Benefits include improved resilience to stress, reduction of fight or flight response and improved physiological state.

Evidence base for yoga techniques to counter stress

Stress has become a global public health problem. Evidence suggests yoga offers one possible way of reducing and managing stress -

- A review of evidence-based yoga interventions' impact on smoking cessation demonstrated yoga based interventions were able to enhance quitting smoking rates in participants holding promise for smoking cessation.⁹
- 12 studies demonstrated positive changes in psychological or physiological outcomes related to stress. Yoga appears to be a promising modality for stress management¹⁰
- Yogic breathing, defined as a manipulation of breath movement, has been shown to positively affect immune function, autonomic nervous system imbalances, and psychological or stress-related disorders.¹¹
- Regular yoga practice may also exert a healthy lifestyle effect including vegetarianism, non-smoking, reduced alcohol consumption, increased exercise and reduced stress with resulting cost benefits to the community.¹²
- Yoga users report benefit for musculoskeletal conditions and mental health, indicating that further research on the efficacy of yoga for the treatment and/or prevention of these conditions is warranted.¹³

Objective: to explore the effect of basic yoga techniques as a form of stress management on participants with *no previous experience* of yoga.

Study Design:

Real world,

open labelled

observational

pilot study

Population : NHS staff (clinicians and administrative staff)

Age range 27- 60+.

Main complaint: workplace stress 7 – 10 in a ten point stress scale.

Out of 40 possible attendees – a total of 26 staff voluntarily attended the 40 minute lunchtime stress awareness workshop.

Workshop Agenda : 45mins

20 min theory & engagement

20min practicum

5 min feedback & close

Theory

What is stress – short exercise partner work – what does stress mean to you? Audience participation. Feedback – identify main issues causing stress.

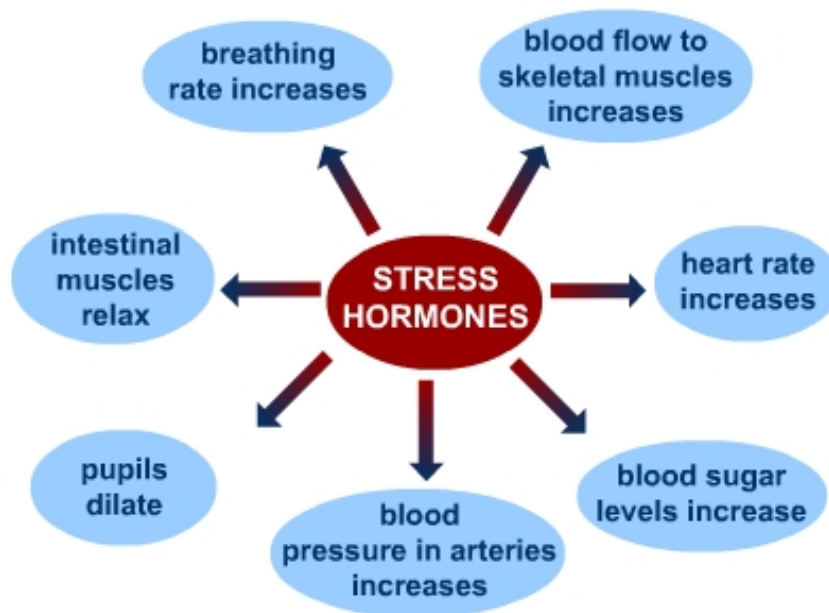
Definition: Stress can be defined as ‘the pressure placed upon an individual exceeds the capacity of that individual to cope.’¹

Recognising symptoms of Stress – impact on the body, mind, behavior and emotional state – some examples are illustrated in Figure 1



Fight or Flight response

The symptoms are a good internal barometer – but Stress itself is a physiological response – no matter how big or small the stressor the body responds in a predictable way:



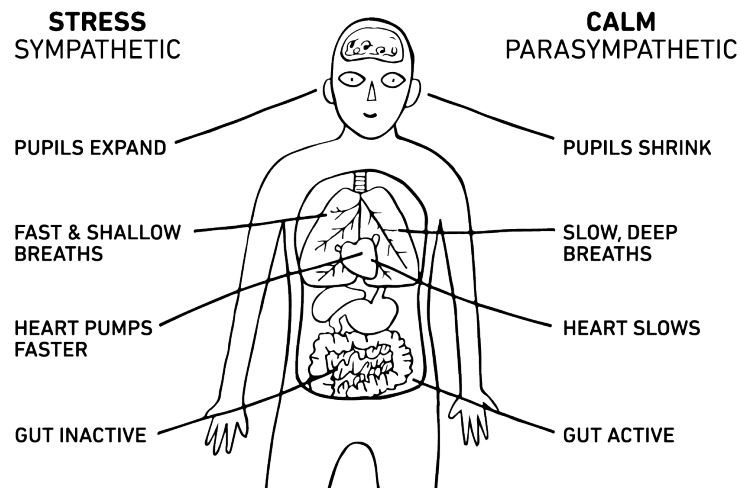
Over time, repeated activation of the stress response takes a toll on the body leading to health problems.

Anatomy of Stress response:

The stress response begins in the brain - the eyes or ears relay signals to the amygdala, an area of the brain that contributes to emotional processing - instantly sends a distress signal to the hypothalamus.

The hypothalamus is a bit like a command center. This area of the brain communicates with the rest of the body through the **autonomic nervous system**, which controls involuntary body functions such as breathing, blood pressure, heartbeat, and the dilation or constriction of key blood vessels and bronchioles. The autonomic nervous system has two components, the sympathetic nervous system and the parasympathetic nervous system. The **sympathetic nervous system** functions like a gas pedal in a car. It triggers the fight-or-flight response, providing the body with a burst of energy so that it can respond to perceived dangers. The **parasympathetic nervous system** acts like a brake. It promotes the "rest and digest" response that calms the body down after the danger has passed.

Evidence suggests yoga triggers the PNS. ¹⁴



Current coping strategies

Stress management society conducted a Survey across the streets of in London – audience were asked to complete a sentence – ‘ *i’m so stressed I need a*’

The top 4 answers were:

- Drink – (alcohol)
- cigarette (23% of population smoke)
- caffeine (tea / coffee)
- chocolate / sugar

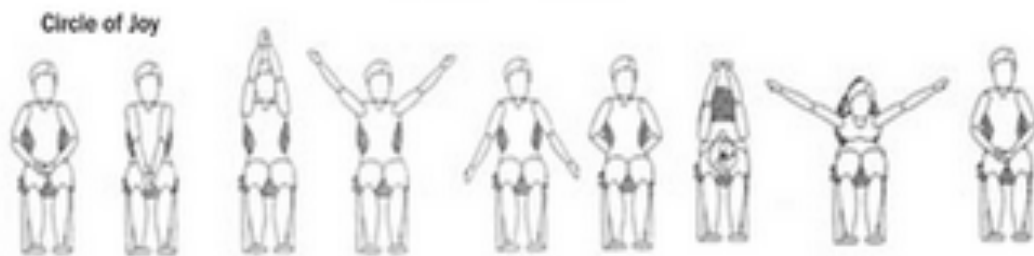
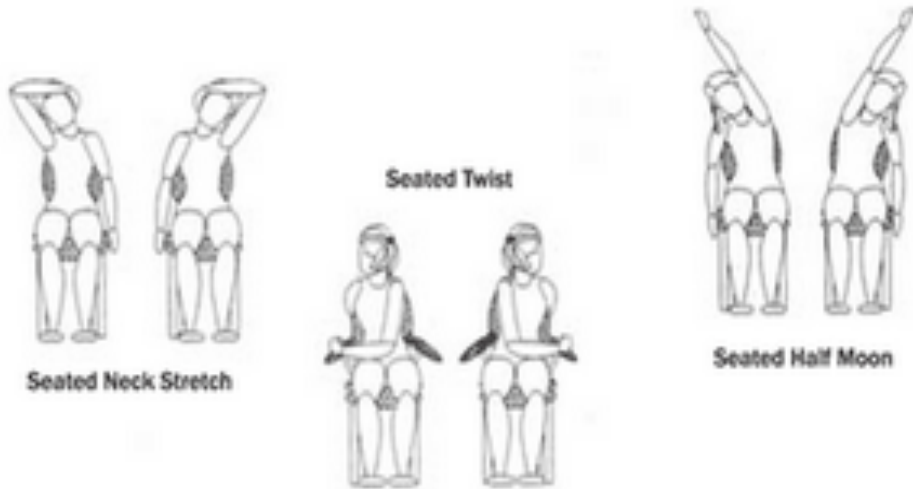
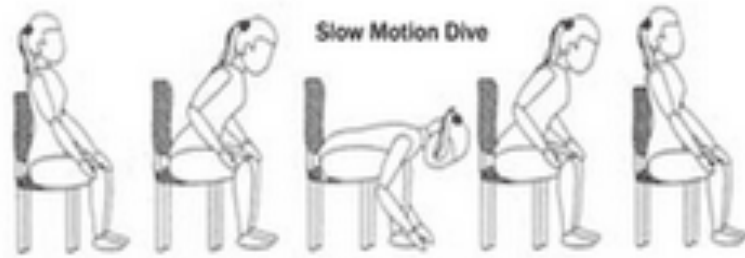
How can these stimulants relax you? They fuel the stress response.

What alternative non-invasive solutions are available to manage stress?

PRACTICUM: Yoga techniques as an effective tool for stress management:

Audience were asked to complete a ten point stress scale questionnaire and notice the smells, colours, sounds around the room before starting the program.

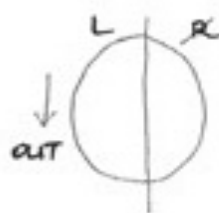
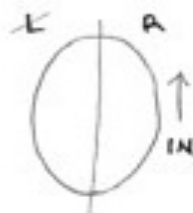
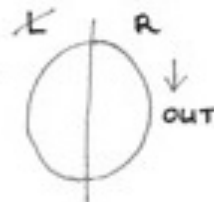
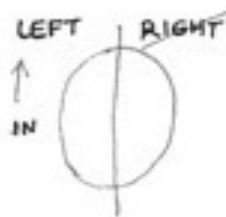
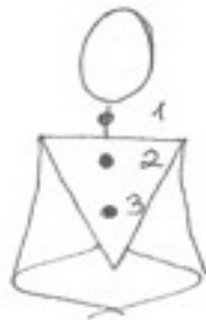
Standing up or sitting in chair – feet hip distance apart:



Breathing :

Bhastrika or "Bellows Breath,"

Ujjayi or "Victorious Breath":



Three-Stage Breathing (Centering)

- 1) INHALE from nostrils to base of throat, then EXHALE from throat to nostrils
- 2) INHALE from nostrils to center of the chest - EXHALE from center of chest to nostrils
- 3) INHALE from nostrils to navel - EXHALE from navel to nostrils
- 4) INHALE and EXHALE through all 3 points, for one to several minutes

Breath of Transformation (Energizing)

Either standing or seating (on floor cross-legged or on a chair)

- 1) INHALE arms up and hands open with fingers spread
- 2) EXHALE with HA sound bouncing bend elbows with fist hands to the sides of the rib cages
- 3) Repeat INHALE-EXHALE for 1 to 5 minutes

Alternate Nostril Breathing (Calming)

Sitting with a tall back, close index and middle finger of your right hand:

- 1) Close your right nostril with the thumb, and INHALE slow and fully through the left nostril
- 2) Close the left nostril with ring and pinky fingers - EXHALE through the right nostril
- 3) With the left nostril still closed, INHALE through the right nostril
- 4) Close the right nostril and open the left - EXHALE through the left nostril
- 5) Repeat alternating the breath, progressively slowing and deepening the breath for one to several minutes.

Techniques adapted from Dr Richard Gerrard and P Gerberg
5-2-5 breath per min can restore relaxed state to human frame¹⁴

RESULTS

Three 45 minute workplace workshops took place between February and May 2014 across 3 GP practices in Havering CCG.

26 attendees completed a perceived stress questionnaire and rated their current level of stress using a ten point scale before and after the workshop, with zero being calm and relaxed and 10 being extremely stressed.

80% rated their stress between 7-10 at the start of the workshop.

The main concerns identified from the audience participation exercises:

- Time management
- Anger / frustration management
- Communication
- Recognising stress symptoms earlier – preventative solutions

Yoga techniques:

Physical movement – we often spend our time sat at our desks or in a meeting room over thinking, whilst the physical body remains inactive.

Breathing: bellows breath. Observations highlighted shallow breathing, or reverse breathing. Audience had to think hard about their own breathing pattern.

100% attendees said they benefited from the yoga techniques and agreed to incorporate it into their daily practice.

The room looked brighter, clearer sounds, everyone was smiling and felt relaxed.

100% found the stress awareness program of value. Staff were surprised how easily the asanas could be modified to reduce physical tension and improve energy.

All participants agreed the techniques

- Enhanced their feeling of wellbeing
- Improved posture and alleviated physical aches (headache, lower back ache and neck ache).
- Would recommend workshop and/ or techniques to colleagues
- 100% agreed to adapt breathing into daily practice and teach patients.
- 70% said they enjoyed the yoga exercises and would like to explore classes further.

The average stress score after 45 minute workshop was 5

Simplicity is the key to managing stress in workplace – most popular technique was yoga breathing.

The workshop itself enabled open discussion to take place – thereby creating a sense of cohesion and support amongst staff members.

The NHS recently launched ‘ A call to action’ document which emphasises innovative integrated ways of managing healthcare – prevention and education are at the forefront.

Commissioners seek local, populated, REAL LIFE data which can prove cost efficiency and improved quality of life compared to current management.

This pilot study has created interest across Havering CCG to explore the use of Yoga as an effective skill for managing stress as well as maintaining healthy mind and overall wellbeing – furthermore it has created a platform for partnering with the NHS.

A 6 month follow up has been organised in October with view to expanding the workshops to a larger health care audience with view to measuring the impact of yoga on prescribed medicine (mental health).

Conclusion

Workplace yoga and breathing interventions can reduce perceived stress. There is already masses of evidence that demonstrates the effectiveness of Yoga but very little data is present on health economics. Larger randomized controlled trials are needed to investigate this further to provide robust data.

It may be a while before yoga is prescribed by your GP for stress – but this is certainly a starting point.

Word count:1624

References

a. http://www.publicworld.org/blog/time_to_insist_nhs_employers_talk_about_staff_stress

b. <http://www.who.int/gho/ncd/en/>

1. Stress management society

2 HSE

3 Office of National Statistics 2012.

4 Findings from the ninth annual NHS staff survey revealed that

5, according to new research from Aviva's latest report on health of the workplace.

6 Axa/PPP/Work Foundation 2010

7 Mind 2010:

8 [www.working](http://www.workingforwellbeing.gov.uk) for wellbeing. Gov. uk

9 Between inhale and exhale: yoga as an intervention in smoking cessation.

Dai CL1, Sharma M.

Author information

J Evid Based Complementary Altern Med. 2014 Apr;19(2):144-9. Epub 2014

Feb 25

10. Yoga as an alternative and complementary approach for stress management: a systematic review.

Sharma M.

Author information

J Evid Based Complementary Altern Med. 2014 Jan;19(1):59-67. Epub 2013

Sep 12

11 Sudarshan kriya yoga: Breathing for health

[Sameer A. Zope](#) and [Rakesh A Zope](#)¹

Int J Yoga. 2013 Jan-Jun; 6(1): 4–10.

doi: [10.4103/0973-6131.105935](https://doi.org/10.4103/0973-6131.105935)

12 Yoga in Australia: Results of a national survey.

[Penman S](#)¹, [Cohen M](#), [Stevens P](#), [Jackson S](#).

Author information

Int J Yoga. 2012 Jul;5(2):92-101. doi: [10.4103/0973-6131.98217](https://doi.org/10.4103/0973-6131.98217)

13 Characteristics of yoga users: results of a national survey.

[Birdee GS](#)¹, [Legedza AT](#), [Saper RB](#), [Bertisch SM](#), [Eisenberg DM](#), [Phillips RS](#).

Author information Division for Research and Education in Complementary and Integrative Medical Therapies, Harvard Medical School, Boston, MA

02215, USA. Gurjeet_Birdee@hms.harvard.edu

J Gen Intern Med. 2008 Oct;23(10):1653-8. doi: [10.1007/s11606-008-0735-5](https://doi.org/10.1007/s11606-008-0735-5).

Epub 2008 Jul 24

14 Brown RP, Gerbarg PL. Sudarshan kriya yogic breathing in the treatment of stress, anxiety, and depression: Part I-neurophysiologic model. J Altern Complement Med. 2005;11:189–201. [[PubMed](#)]

15 Yoga for reducing perceived stress and back pain at work.

[Hartfiel N](#)¹, [Burton C](#), [Rycroft-Malone J](#), [Clarke G](#), [Havenhand J](#), [Khalsa SB](#), [Edwards RT](#).

Author information

¹Centre for Health Economics and Medicines Evaluation, Bangor University, Bangor, Gwynedd, UK. ned.hartfiel@bangor.ac.uk

Occup Med (Lond). 2012 Dec;62(8):606-12. doi: [10.1093/occmed/kqs168](https://doi.org/10.1093/occmed/kqs168).

Epub 2012 Sep 25

