

IDENTIFICATION OF IMPORTANT CONSTITUENT ELEMENTS OF YOGA INTERVENTIONS FOR ADULT PATIENTS WITH NEUROLOGICAL CONDITIONS: A PRELIMINARY DELPHI STUDY

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ABSTRACT

Background: Evidence suggests yoga is a safe and effective intervention for the management of physical and psychosocial symptoms associated with neurological conditions. However, heterogeneity in the components and reporting of clinical yoga trials impedes both the generalization of study results and the replication of study protocols. The aim of this Delphi survey was to address these issues of heterogeneity, by developing a list of recommendations of key components for the design and reporting of yoga interventions for neurological conditions.

Methods: Recognized experts involved in the design, conduct, and teaching of yoga for neurological conditions were identified, and invited to contribute to the Delphi survey. 12 of the 38 experts contacted agreed to participate. Round 1 presented an open-ended question, allowing panelists to individually identify components they considered key to the design and reporting of yoga interventions for neurological conditions.


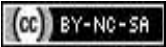
Results: Twelve panelists completed the one round of the Delphi survey. Panelists provided 35 comments to the Round 1 question. These comments were then reduced to 13 items such as breathing exercises, posture, cognition, meditation, balance, etc.

Conclusions: Expert have provided a non-prescriptive reference list for the design and reporting of yoga interventions for neurological conditions. It is anticipated that future research incorporating the Delphi guidelines will facilitate high quality international research in this field, increase homogeneity of intervention components and parameters, and enhance the comparison and reproducibility of research into the use of yoga for the management of neurological conditions.

KEY WORDS: Yoga, neurological conditions, Delphi

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INTRODUCTION

Yoga is a mind-body practice [1,2,3] that originated in India [3,4,5], with roots that date back to at least 2000 BC [4].

The term 'yoga' stems from the Sanskrit root 'yuj'

[6,7], meaning "to yoke or join together" [7], in allusion to the desired bond between mind, body and spirit [6]. It is portrayed as a tree consisting of 'limbs' that include universal ethics (yama), physical postures (asanas), breath

control (pranayama), control of the senses (pratyahara), concentration (dharana) and meditation (dhyana), which are practiced in order to attain 'samadhi', the spiritual bliss[8,9].

A feeling of not fulfilling or deriving the best from life. Yoga practices foster willpower, discipline, and self-control and force the mind and body to work in perfect synergy. Therefore, yoga exercises may have beneficial effects as a stand-alone treatment on stress reduction and overall wellbeing. In addition, yoga has been seen as a main discipline and practice that has the potential to cultivate mindfulness[10].

According to WHO, yoga is deemed to belong to the Complementary and Alternative Medicine (CAM) field, as a form of non-medication therapy [11]. This understanding reflects the yoga therapeutics, that is the elements of yoga directly addressing health concerns, in which yoga is used to treat health-threatening conditions [7]. Recent evidence highlights positive effects of yoga for people with an increased risk of cardiovascular disease [12] and as add on therapy for treating carpal tunnel syndrome [13], depression [14], rheumatoid arthritis [15] and cancer [16].

Rehabilitation of various conditions have included Yoga as one of the components and has shown positive outcomes. Use of Yoga in conditions like asthma, rheumatism, epilepsy, cardiac diseases have shown good results and yoga is now used for the treatment of these conditions widely. Very few studies have been conducted on the use of yoga in neurological conditions.

Even though yoga is widely used since many years, there is lack of knowledge regarding the use of yoga by physiotherapists in neurological conditions. Also, there are no guidelines on how to incorporate yoga in daily treatment of adult neurological conditions. This Delphi study aimed to a list of recommendations of key components for the design and reporting of yoga interventions for neurological conditions.

METHODS

As the geographical diversity of research teams involved in evaluating yoga for neurological conditions precludes face-to-face interaction, establishing international recommendations for

standardization of these interventions requires participants to interact without the necessity of a physical meeting. To overcome this challenge, we used the Delphi technique, which is increasingly used in healthcare research. A survey-based method of consensus building, the Delphi technique is based on fundamental principles of purposive sampling of experts in the field of interest, panelist anonymity, iterative questionnaire presentation, and feedback of statistical analysis. The development process comprised a survey-based modeling process, using the Delphi technique. Identified experts in the research field completed one round of a Delphi survey, identifying, then rating, key intervention components. Items reaching a priori consensus were included in the resultant list of Delphi recommendations. The conduct of the Delphi survey was guided by previous reviews of the Delphi method. Criteria for analysis, consensus, and termination reflect those of past Delphi surveys in the field of health research and complementary medicine.

Written informed consent was obtained from all participants after explanation of the details of this study. The demographic data including name, age, gender and address was collected. The study protocol was approved by the ethical committee of College of Physiotherapy/MUHS. Open ended questionnaire regarding awareness and use of yoga in neurological rehabilitation was formed and registered. In the Round 1, questionnaire form was mailed and conveyed through message to experts. Responses were collected at the end of one and half month. Non – responders were sent an email as a reminder. Common views and disagreeing views were identified.

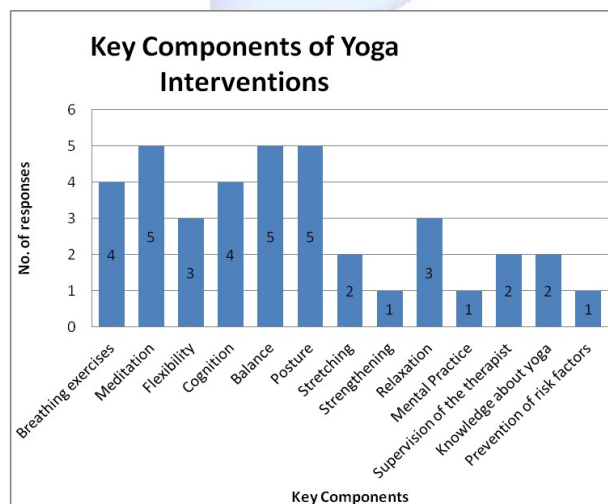
Survey procedure: Physiotherapists working in clinical setting with adequate exposure to neurological conditions like stroke were invited to participate in the study. Parameters assessed were age, Bachelor's / Master's degree, years of work experience. Open ended question: "In your professional opinion, what are the key components in a yoga intervention protocol for adult patients with neurological dysfunctions?" Recruitment was completed via email and messages. The participant details shall remain anonymous.

Analysis: Qualitative data generated from the

Round 1 open-ended question were analyzed using thematic analysis. Items generated from this analysis were worded using the panelists' own terms and phrases and grouped into themes.

RESULTS

Twelve experts were contacted through E-mail and messages. All the panelists are experts in their respective fields of academics as well as research. Average experience was 22.25 years. Experts provided 45 comments for the question: "In your professional opinion, what are the key components in a yoga intervention protocol for adult patients with neurological dysfunctions?" These items were reduced to 14 items for data analysis. The single open-ended question received 45 answers, with an average of 3.1 answers per expert. The experts gave an in detail opinion to the question in a paragraph form.



The 14 items identified were: Breathing exercises, Meditation, Flexibility, Cognition, Balance, Posture, Stretching, Strengthening, Relaxation, Mental practice, Supervision of the therapist, Knowledge about yoga, Prevention of risk factors.

Balance, posture and meditation were recorded as ones with the highest views. The second highest views are recorded for breathing exercises. Flexibility, cognition and relaxation are recognized as important key components by many of the panelists

The common neurological conditions identified by the experts were stroke and Parkinson's disease. Most panelists view yoga as: "Spiritual practice that involves attaining balance through mind and body."

DISCUSSION

Yoga is a group of physical, mental and spiritual practices or disciplines which originated in ancient India. Yoga is basically based on the oneness of mind and body and achieving stability through interaction of all body systems. The use of yoga in neurological rehabilitation in India is not explored as well as the awareness of benefits of yoga in rehabilitation is also not explored. The aim of this Delphi survey was to identify the various aspects of neurological rehabilitation which are being treated with yoga. Recognized experts from various states of India completed one round of a web-based survey, in which they suggested items they considered as key intervention components. Consensus among the experts resulted in the development of a 35-item list of key components for the design and reporting of yoga interventions for neurological conditions.

Graph 1 shows the various items comprising of the views of the experts. Balance, posture and meditation were the components with the highest views. Another important aspect was breathing exercises. Flexibility, cognition and relaxation are recognized as important key components by many of the panelists. The common neurological conditions identified by the experts were stroke and Parkinson's disease.

Yoga is useful tool for the rehabilitation process after stroke. Since stroke is a leading disease, the need for effective tools for rehabilitation is vital [10]. Relaxation promotes positive effects on carotid atherosclerosis, hypertension, diabetes and coronary artery disease which are all identified risk factors associated with stroke occurrence or recurrence [17].

Balance is commonly impaired after stroke and often continues to be impaired into the chronic (>6 months) phases of recovery; up to 83% of individuals demonstrate post stroke balance deficits. In the review of 20 different studies employing yoga in patients with CVA, eliciting relaxation through meditation was useful in both stroke prevention and post stroke rehabilitation. Previous studies have indicated that asymmetrical alignment contributes to impaired balance and decreased ambulatory ability. Individuals

with chronic stroke deficits in this study exhibited significantly deviated postural alignment in upright standing prior to training. Schmid et al, 2016 conducted a study of yoga intervention in post-stroke patients which concluded that group yoga therapy improves balance and gait in stroke patients [26].

Postural stability affection after stroke result from lesions in the brain that impact the sensory/ motor systems and are correlated with: greater physical impairments and disability, decreased ability to perform activities of daily living (ADLs), and increased fall risk. Altenburger et al, 2016 concluded that following yoga, postural asymmetry was reduced by as much as 80% for some individuals[18]. Because of improved balance, participants increasingly attempted new activities in different and more challenging environments and were aware of potential fall risk but grew confident in maintaining their balance.

Tran in a two month Hatha yoga program demonstrated improvements in motor function such as upper and lower extremity torque, sustained lower extremity isometric muscle contraction , shoulder flexibility [5].

Rajesh et al performed a prospective, non-randomized clinical trial in which patients with drug resistant epilepsy adhered to a twice- daily yoga meditation protocol. 19/20 subjects reported decreased frequency of seizures within 3 months and 6 of those 19 demonstrated significant reductions.

Colgrove et al, 2012 concluded that yoga improved balance, strength, posture and gait. Due to the progressive nature yoga programs may offer a way to maintain wellness and perhaps quality of life[20].

Panelists identified stroke and Parkinson's disease as most common conditions where yoga can be used in rehabilitation. This maybe due to the fact that these two conditions are widely used in research and given significant results. However, yoga has also been used in the treatment of other conditions such as multiple sclerosis, spinal cord injuries, etc. [17].

Panelists also wrote about breathing exercises and cognition to be the key components of yoga intervention. 'Pranayama' was identified by

almost all the panelists as one of the key components for the treatment of neurological conditions. Through the methods of body posture, breathing training, and consciousness meditation, overall well-being could be improved with positive benefits to the nervous system [21], endocrine system [22], cardiovascular system [23], respiratory system[24], and immunity[25].

Limitations to the current study are noted. Firstly, the views of Delphi panelists may differ from those expert who declined participation, and may therefore not adequately represent experts in the field of interest . Additionally, as the majority of experts who accepted the invitation to participate in the Delphi process were from India, the perspectives and views are relevant to Indian population only. It is possible that the method of email invitation may not be an effective or appropriate form of recruitment.

Future research in the development of these Delphi recommendations will involve clearly defining the boundaries of each item. For example, does an intervention dosage of yoga include home practice; which neurological deficits benefit specifically from yoga. Additionally, unclear item definition identified by panelists, such as differentiating between the practices of mindfulness versus mindfulness meditation, requires further clarification. Given the positive response of expert to the use of the Delphi survey, this method is suggested a means to further develop and define these Delphi recommendations.

CONCLUSION

The current study aimed to address issues of heterogeneity associated with key components for yoga interventions for neurological conditions. The resultant Delphi recommendations, provides 13 items related to defining the yoga intervention, types of yoga practices to include, delivery of the yoga protocol, domains of outcome measures, and reporting of the yoga intervention to consider when designing a yoga protocol for neurological conditions. It is anticipated future research incorporating the Delphi guidelines will facilitate high quality research in the field of yoga for neurological conditions, increase homogeneity of intervention

components and parameters, and enhance the comparison and reproducibility of research in this field.

Conflicts of interest: None

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