

## Collaborative Researchers Combine Knowledge and Skills to Adapt Yoga Practice to Selected Populations

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Although structured and uniform approaches to yoga research with standards and guidelines are non-existent, yoga research across research communities continues. In a 2013 JYPT editorial, Fischer-White and Taylor emphasized that guidelines can be developed through collaborative efforts of yoga/yoga therapy researchers, yoga/yoga therapy practitioners, and scientific disciplines to bring a fully informed perspective to optimizing yoga poses for selected populations. These authors emphasized then that research teams, working in harmony for the greater good, can develop the necessary methodological rigor for research studies while staying true to the essence of yoga.

Because musculoskeletal conditions are ranked fourth among the most disabling disorders before the age of 50 (US Burden of Disease Collaborators, JAMA, 2013), it stands to reason that there may be poses/postures within many styles of yoga that are not optimal for some among this population. Yet, we must not forget the benefits of exercise, such as improved mood, prevention or management of many chronic diseases, increased energy, and more restful sleep, that can come from some styles of yoga and other forms of exercise. Researcher readers know, too, that there are some populations, especially older sedentary African American (AA) women, who do not engage in any style of yoga or physical activity and who pose challenges to researchers seeking to enroll them as study participants, despite the fact that these women could benefit from any level of physical activity. In this current issue, in the article titled "Feasibility and Acceptability of an Internet-based, African Dance-modified Yoga Program..." Johnson, Taylor, and colleagues make the case that culture, lifestyle issues, identifiable barriers to exercise, and yoga practice can be addressed sufficiently to enroll a sample of hard-to-reach sedentary older AA women to increase energy expenditure in their everyday activities. To achieve cultural relevance of the study intervention, the authors drew upon traditions originating in West African societies, including movements from cultural dance with its rich symbolism and meaning. The authors of this editorial encourage you to read about this culturally relevant 4-week study that tested the feasibility and acceptability of an Internet-based intervention, yogic dance, using digital videos in a sample of 24 AA women (ages 35-64) at risk for or diagnosed with metabolic syndrome. The study revealed that the majority of the women (79%) found this culturally relevant yoga-related intervention acceptable in getting them involved in a form of exercise. These study participants also shared descriptive data revealing that culture was an important aspect of the yoga-related intervention—one that attracted and engaged them. This particular study clearly demonstrates the effect of culturally relevant yogic dance and how it might influence health behaviors in AA women.

Other research activities currently underway at the University of Virginia bring the potential for adapting yoga poses for those with musculoskeletal limitations. This research combines the knowledge and research skills of two graduate students from different disciplines—one a PhD candidate in nursing (T.G. Fischer-White, who is also a registered yoga teacher with Yoga Alliance) and a biomedical engineering graduate student (K.M. Virgilio)—and their respective faculty advisers (A.G. Taylor and S.S. Blemker) from the two disciplines. This team is bringing a multidisciplinary perspective to the development of

yoga practices for selected populations, including those with chronic illnesses who are seeking complementary life-enhancing modalities that include lifestyle changes such as regular exercise and restorative practices. Given that yoga therapy is being used as a key component of multimodal treatment strategies for symptom management in a number of chronic diseases, this team has engaged in scientific rigor seeking mechanistic understanding of the effects of selected yoga poses. Recognizing that, historically, yoga therapy has been prescribed based on traditional yogic teachings, standard knowledge of anatomy, and intuition, this team is conducting work that involves quantitative data and big data analyses aimed to establish evidence-based practice for prescriptive yoga therapy that treats weakness of the musculoskeletal system associated with chronic diseases. Using open source software for advanced computational modeling, the team is developing a novel framework to validate and optimize current practices used by yoga therapists in the treatment of chronic musculoskeletal disorders.

Because open source software is being used, other researchers interested in the therapeutic application of different yoga styles will be able to base future studies upon the foundation provided by this current work. As clinicians and scientists, we know that (a) the 'one-size-fits-all' approach for recommending yoga does not work; (b) musculoskeletal models provide a paradigm for revealing the biomechanics of complex movements; and (c) model simulations provide data-intensive results requiring big data analytic methods. This current multidisciplinary research project has the potential to provide an opportunity for the continued advancement of the science of yoga research in an exponential fashion heretofore unavailable.

Yoga, like many fables told by storytellers over the ages, is timeless. Both yoga and selected fables have survived because of the application that each has had to life, no matter the era. Writing more than 100 years ago (in 1903), Leo Tolstoy wrote words that readily apply to the journey that our research team is on now with regard to understanding more about yoga practice and yoga therapy. He asked three important questions: When is the best time to do things? Who is the most important one? And what is the right thing to do? Paraphrasing Tolstoy's words, our team members came to grips with the fact that there is only one time that is important—now! It is the most important time because it is the only time when we may have the power (knowledge, skills, and time) and the resources made available through an award from UVA's Jefferson Trust Fund to conduct this work. The most important

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persons are those with whom we share the moment—those with chronic diseases/illnesses needing us to do good for them! Guided by Tolstoy’s philosophy and a fact recently gleaned from a keynote address given by Tom Insel, Director, NIMH, NIH, at the 2014 meeting of the Council for Advancement of Nursing Science, who noted that “chronic non-communicable disease will be in the 21<sup>st</sup> century what infectious

diseases were in the 20<sup>th</sup> century,” our team views now as the opportune time for those interested in advancing yoga in the health care sciences to come together to develop a scholarly perspective on research related to this ancient practice. We invite yoga therapists, yoga practitioners, and scientists to join us in our important efforts to move the science of yoga forward.