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Yoga Practice Associations with Mindfulness, Kundalini, and Mystical Experiences

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Abstract

Yoga practice has profound effects on psychological and biological health and spirituality. In the present study, the amount and pattern of yoga practice was compared for mindfulness, kundalini effects, and mystical experiences. Yoga practice was found to be associated with enhancements of kundalini experiences but only weakly with mindfulness and mystical experiences. The years of practice but not the duration and social conditions were associated with mindfulness, kundalini, and mystical experiences while frequency of yoga practice was associated with kundalini experiences. The results suggest that the primary association of yoga practice is with the real time awareness and appreciation of sensory and perceptual experiences which may in turn affect mindfulness, kundalini effects, and mystical experiences.

Keywords: Meditation; Yoga; Prayer; Mindfulness; Kundalini Effects; Mystical Experiences

Introduction

Yoga has for centuries been recognized to be beneficial for health and well-being. It has been shown to improve mental health [1-3] and relieve stress [3] in normal individuals, in PTSD in adults [4] and children [5], and to be useful in the treatment of mental illnesses [6]. It has also been shown to be beneficial for physical health [7-10], during pregnancy [11-13], improves immune function [14], increases brain volume [15], and for the treatment of a multitude of physical ailments [16-22]. It has even been shown to delay physical and mental decline with aging [23-27]. In addition, yoga has been employed with great benefit in schools [28] and even in prisons [29].

The usefulness of yoga practice for the promotion of human flourishing has spawned scientific activity that has been accelerating over the last couple of decades [30]. Yoga practice has been found to increase mindfulness [23,1,31], which has been defined as paying attention in a particular way: on purpose, in the present moment, and non-judgmentally [32]. Increased mindfulness has been found to produce a myriad of benefits to the psychological and physical health of the individual [33-36]. Yoga may produce many of its benefits by way of increasing mindfulness. If this is so, then the benefits of yoga could be amplified by placing greater stress on mindfulness development during yoga practice.

Yoga practice has also been found to increase physical symptoms and activation, often termed kundalini effects [37]. These involve changes in the energetics of the individual and the production of physical and sensory alterations [38]. Kundalini effects were first described in the yogic traditions going as far back as the Upanishads, commentaries on the Hindu scriptures, the Vedas [39]. Most yoga practitioners are unaware of these potential energetic changes and can easily misinterpret them. If this is so, then this potential troubling consequence of yoga could be mitigated by informing the participant of this potential consequence.

Yoga practice can also induce mystical, spiritual experiences [40,41] that can have powerful effects on the individual [42-45]. Mystical experiences are characterized by an experience of oneness where all things are perceived as one [40,41] They are separated into two categories, extroversive mystical experiences wherein all perceptual phenomena are viewed as coming through the senses as one and introverted mystical experiences where everything is viewed as pure consciousness; devoid of all sensory imagery. "The essential difference between them is that the extroversive experience looks outward through the senses, while the introverted looks inward into the mind" [40]. But, modern western yoga practice is often devoid of spiritual development. If this is so, then the spiritual benefits of yoga could be amplified by placing greater stress on spirituality development during yoga practice.

Unfortunately, there has been little or no systematic research into the pattern of yoga practice that produce and have the greatest impact on mindfulness, kundalini and mystical, spiritual experiences. The present study attempts to fill that gap by investigating the associations of yoga practice with mindfulness, kundalini effects, and mystical experiences. Specifically, this will refer to the relationship of these experiences with years of practice, and amount of daily practice between participants. Yoga practitioners who self-reported their current patterns of practice were compared to individuals who did not engage in any contemplative practice including yoga on their levels of mindfulness Kundalini experiences and the mystical experiences.

The results reported in the present manuscript are based upon the results of a broader study of a variety of contemplative practices and their consequences [46].

Methods

For a detailed presentation of the methods employed see [46].

Participants

There were a total of 247 participants of which 166 participants practiced yoga, 88.0% female, averaging in age 20.8 yrs. (σ = 0.33, range 18-43) and in education 13.7 yrs. (σ = 1.66, range 12-20), and 81

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participants which did not have a contemplative practice, 75.3% female, averaging in age 20.2 yrs. (σ = 2.70, range 18-33) and in education 13.4 yrs. (σ = 1.64, range 12-19).

Measures

Participants completed a demographics questionnaire, requesting age, sex, body size, and years of education. They completed a contemplative practices questionnaire, requesting information on the nature of their current contemplative practice(s), history, amounts and frequency of practice, social conditions, and engagement in practice retreats. They also completed three scales.

Five-Facet Mindfulness Questionnaire, FFMQ [47,48]: The 39-item self-report measure of mindfulness is composed of five subscales: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. Participants responded to questions (e.g. "I watch my feelings without getting lost in them") on a 5-point Likert-type scale, from 1 (never or very rarely true) to 5 (very often or always true).

Kundalini Awakening Scale: [37]. The 76-item self-report measure of kundalini effects is composed of five subscales: changes, involuntary positioning's, physical symptoms, negative experiences, and positive experiences. Participants responded to questions (e.g. "I've been aware of a blissful sensation in all my nerves.") on a 7-point Likert-type scale, from 1 (strongly agree) to 7 (strongly disagree).

Mysticism Scale MYST: [49]. The 32-item self-report measure of mystical experiences is composed of three subscales: introvertive mystical experiences, extrovertive mystical experiences, and interpretation. Participants responded to questions (e.g. "I have had an experience in which I felt everything in the world to be part of the same whole" and "I have had an experience in which everything seemed to disappear from my mind until I was conscious only of a void.") on a 5-point Likert-type scale, from 1 (This description is probably true of my own experience or experiences) to 5 (This description is definitely not true of my own experience or experiences).

Procedure

Participation occurred completely on-line at the Mindfulness and Awakening research Registry (MARR, http://www.contemplative-studies.org/views/MARegistry.php). Participants viewed a statement regarding the rationale for the study and were directed to an informed consent page. After providing informed consent the participants completed the measures. If there were problems with the entries the participants were directed to log into the system again and complete the missing or confusing entries.

Data Analysis

All MARR entries were recorded into a database. Responses on each of the five subscales of the FFMQ, observing, describing, acting with awareness, non-judging, non-reacting were analyzed. In addition, a total FFMQ score was calculated as the average of the five subscale scores and analyzed. Responses on each of the five subscales of the KAS, changes, involuntary positionings, physical symptoms, negative experiences, and positive experiences were analyzed. In addition, a total KAS score was calculated as the average of the five subscale scores and analyzed. Responses on each of the three subscales of the MYST, introvertive mystical experiences, extrovertive mystical experiences, and interpretation were analyzed. In addition, a total MYST score was calculated as the average of the three subscale scores and analyzed. To allow for easy comparisons across scales and subscales, the scores and subscales of the FFMQ, KAS, and MYST were calculated as the average item response for each.

The characteristics of the yoga practice were measured by the participants' self-reports of the number of years and months that they've been practicing, the average number of minutes that they engage in each their practices, how often per day, and how many days per week, and the percentage of their practice sessions that occurred alone or in a group.

Responses were analyzed employing SPSS ver. 20 (IBM Corporation). Groups were compared for their responses on the FFMQ, KAS, and MYST with t tests. Amounts of practice and practice characteristic relationships with the FFMQ, KAS, and MYST scores were analyzed with Multiple Linear Regression.

Results

The mean scores for the total FFMQ, KAS, and MYST scale scores for the yoga and no-practice groups are presented on the left side of Figure 1a. Significant differences were present between the groups for the total

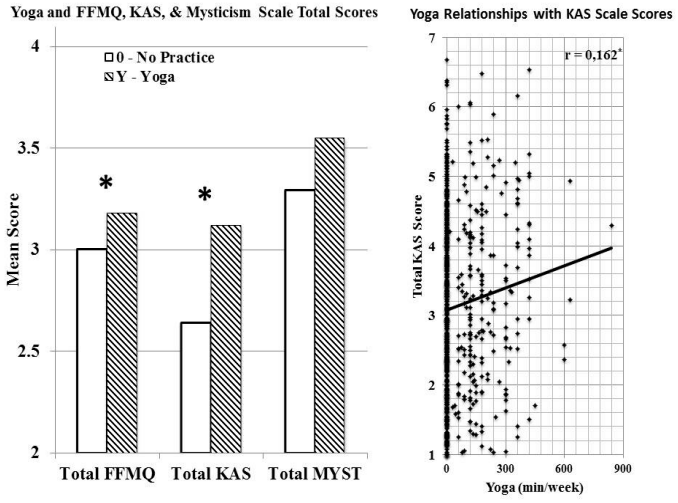

Figure 1: a) Yoga and FFMQ, KAS, & Mysticism Scale Total Scores. **b)** Yoga Relationships with KAS Scale Scores.

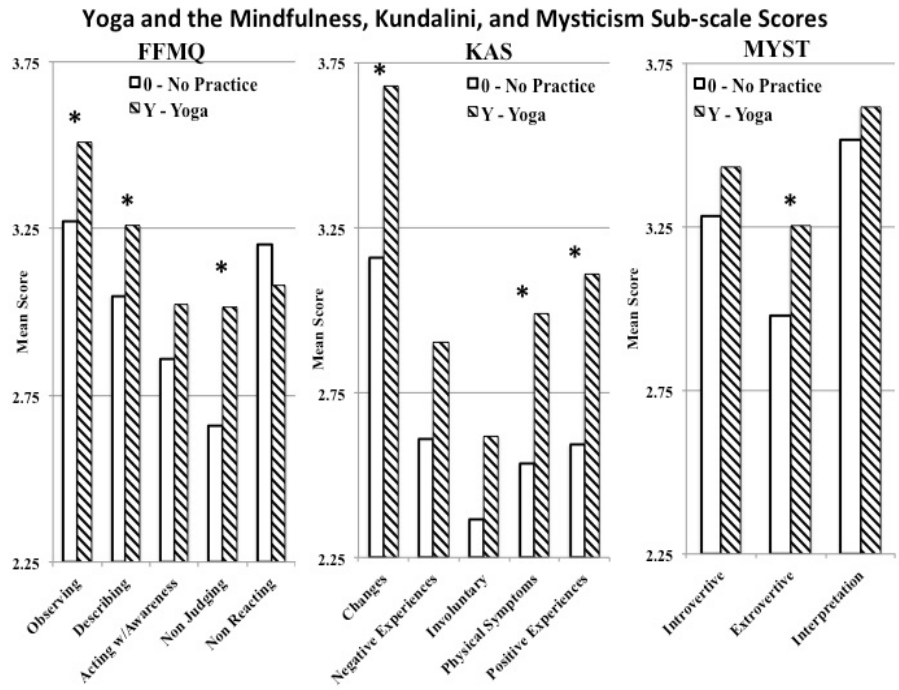

Figure 2: Yoga and the Mindfulness, Kundalini, and Mysticism Sub-scale Scores.

FFMQ, t (245) = 3.58, p < .001, the total KAS, t (245) = 3.14, p < .001, but not total MYST, p > .15. A scatter plot of the modestrelationship (r = .162, p < .05) of yoga practice to the total KAS score is presented on the right side of Figure 1b.

The mean scores for the five FFMQ, KAS, and MYST subscales for the groups are presented in Figure 2. Significant differences were present between the groups for three of the FFMQ subscales, t (245) = 2.47; 2.15; 3.09, p < .05 for the observing, describing, and non-judging subscales respectively. Significant differences were present between the groups for three KAS subscales, t (245) = 3.14; 3.14; 2.98, p < .01 for the changes, physical symptoms, and positive experiences subscales respectively. Significant differences were present between the groups for the extrovertive MYST subscales, t (245) = 2.18, p < .05.

The results of the multiple regression analysis of the participant gender, years of practice, frequency of practice (sessions/week), amount of practice (min/session), and percentage practicing alone and the total FFMQ and five subscales, total KAS and five subscales, and total MYST and three subscales are summarized with standardized regression coefficients (β coefficients) in Table 1. The regressions predicting the total FFMQ and subscale scores were not significant. Only for the observing subscale was the β coefficient for years of practice significant. In contrast, the regressions predicting the total KAS and subscale scores were all significant (p < .05). For the practice characteristics, years of yoga practice was positive and significant for the total, changes, negative experiences, physical symptoms and positive experiences subscales (p < .05). The frequency of practice was significantly positively related to the total and all subscales scores. The regressions predicting the total MYST and subscale scores were not significant (p >.05). For the practice characteristics, only years of practice were significant for the total score and all of the subscales (p < .05).

Discussion

In the present study, yoga practitioners were found to have higher levels of mindfulness as measured on the FFMQ observing, describing, and non-judging subscales in comparison to non-practitioners. Similar differences were observed previously [1]. Additionally [50] using a similar on-line questionnaire technique to the present study, found the observing subscale to be significantly different. These subscales involve noticing and paying attention to sensory information regardless of whether it originates from the outside or the inside of the individual. This is not surprising as these practices focus on present moment awareness that is composed of the full panoply of sensory information.

The present study also revealed significantly different kundalini experiences between yoga and no practice groups. The differences were particularly apparent with the changes, physical symptoms, and positive experiences subscales. These findings are similar to those of Sanches and Daniels [38]. The changes subscale measures "behavioral changes, changes in perception, changes in the modes of mental functioning and changes of consciousness" while the physical symptoms subscale measures "physical sensations and experiences" and the positive experiences subscale measures "experiences felt to be positive or with positive consequences" [37]. Hence, these subscales appear to be measuring a construct similar to the FFMQ subscales associated with yoga practice. In support of this contention the FFMQ observing subscalescore correlates significantly with the KAS changes, physical symptoms, and positive experiences subscales score (r = 0.42, 0.27, 0.30, p < .001, respectively). So, the associations of yoga practice with mindfulness and kundalini experiences may have a common origin.

Of the mysticism subscales the only significant difference between the groups was with the extroceptive mystical experiences. "The extrovertive experience looks outward through the senses" [41] so, like the FFMQ observing subscale and the KAS changes subscales

Gender ♂=1,♀ =2	Practice Yrs.	sessions / wk		min / session	Practice % Alone
Mean	1.88	2.02	4.49	49.84	59.21
Standard Deviation	0.32	2.04	3.04	20.33	40.45

Five Facets of Mindfulness Scale (FFMQ)							
Gender ♂=1,♀ =2	Practice Yrs.	sessions / wk		Min/ session	Practice % Alone	R	F
Total FFMQ	-.132	.135	-.020	.057	-.023	0.184	1.13
Observing	.058	**.182***	.085	-.023	.072	0.239	1.94
Describing	-.112	.145	-.008	.046	-.048	0.184	1.12
Acting with Awareness	-.085	-.027	-.056	.085	.007	0.14	0.64
Non Judging	-.083	.009	-.055	.025	-.149	0.194	1.26
Non Reacting	-.147	.065	-.010	.005	.093	0.177	1.03

Kundalini Awakening Scale (KAS)							
Gender ♂=1,♀ =2	Practice Yrs.	sessions / wk		min /session	Practice % Alone	R	F
Total KAS	.034	**.190***	**.201***	.051	.053	0.29	**2.93***
Changes	.063	**.184***	**.200***	.066	.035	0.285	2.84*
Negative Experiences	.056	**.172***	**.159***	.061	.065	0.256	**2.26***
Involuntary Positioning	.002	.128	**.218***	.026	**.077**	0.277	**2.69***
Physical Symptoms	.046	**.168***	**.179***	.074	.054	0.261	**2.36***
Positive Experiences	.043	**.216****	**.222****	.042	.068	0.329	**3.92****

Mysticism Scale (MYST)							
Gender ♂=1,♀ =2	Practice Yrs.	sessions / wk		min /Ssession	Practice % Alone	R	F
Total MYST	.022	**.202****	.078	-.012	.016	0.226	1.73
Introvertive	-.029	**.193***	.055	.029	.005	0.201	1.35
Extrovertive	.064	**.181***	.101	-.009	.035	0.231	1.81
Interpretation	.045	**.183***	.069	-.055	.008	0.222	1.66

Table 1: Standardized Regression Coefficients (β) from Multiple Linear regression analysis of the relationships between practice characteristics and FFMQ, KAS, and MYST Scale Scores for Yoga practitioners.

the extroceptive subscale focuses on sensory experiences. Indeed, the MYST extroceptive subscale score correlates significantly with both the FFMQ observing and KAS changes subscale scores (r = 0.43; 0.39, p < .001, respectively). This suggests that yoga practice has its greatest associations with the individuals' sensitivity to energies emanating from their internal and external environments and suggests that their primary association is with the real time awareness and appreciation of sensory and perceptual experiences.

There is evidence that yoga practice produces an enhancement of primary sensory and perceptual awareness [51]. Yoga breath awareness practices improve visual shape and size discriminations [52] Also, it appears that yoga practitioners have enhanced proprioceptive and vestibular body signals [53]. Hence, it appears that yoga practice is associated with enhanced sensory and perceptual inputs to awareness. Indeed, a recent model postulates that contemplative practice induces alterations in sensory and perceptual processing [54]. The results then suggest the intriguing hypothesis that yoga practice is associated with heightened mindfulness, kundalini, and mystical experiences as the result of a common mechanism, through the enhancement of sensory and perceptual awareness.

An ambition of the present study was to elucidate the patterns of practice most associated with mindfulness, kundalini effects, and mystical experiences. It is clear from the data that the number of years of practice is the most important contributor to heightened mindfulness, kundalini, and mystical experiences. While the frequency of practice is only associated with kundalini experiences. On the other hand, the duration of yoga sessions and the social conditions of practice were not associated with the scale scores. Hence, it would seem that it's how much in total and how frequently but not how long or socially practice occurs that is associated with mindfulness, kundalini effects and mystical experiences.

It is clear that yoga has its most salient impact on kundalini experiences.

This is an important consideration for yoga teachers and therapists. The energetic states and unusual experiences that are represented in kundalini experiences can be quite troubling for the practitioner [55]. This is exacerbated by the fact that they have not been instructed that these experiences are often linked with practice and so have no frame of reference to interpret these unusual experiences. These physical changes can be misinterpreted and diagnosed as anxiety or panic disorder [38]. So, it is important that information on potential unusual consequences of yoga practice be included in yoga instruction. Foreknowledge can go a long way toward preparing the practitioner to appropriately understand the experiences.

In the present study, it is possible that the relatively weak associations of yoga practice with mindfulness and the very weak association with mystical experiences maybe due to yoga being employed as a fitness practice rather than a contemplative practice. In fact, Texas college students have been found to use yoga primarily as an exercise [56]. In other studies where yoga is taught and treated as a mindfulness skill first and only secondarily as a fitness method, the associations of yoga and meditation with mindfulness are comparable in magnitude [57,23,50]. In addition, when yoga is taught as a contemplative practice it is associated with mystical experiences [44] and increased self-transcendence [53]. Hence, the prior research outcomes may reflect the emphasis on mindfulness while the present outcome might reflect an emphasis on fitness.

The lack of emphasis on mindfulness in the modern western yoga practices may markedly mitigate the benefits of yoga practice. In looking at individuals who are engaged in multiple contemplative practices including combinations of meditation, yoga, and contemplative prayer de Castro (2015a) found that the meditation component of the mixture was by far the most salient influence on mindfulness and kundalini and mystical experiences. Traditional yoga practice as developed in the east emphasized the meditative aspects of yoga practice. This suggests that the positive effects of yoga practice on health and wellbeing could be maximized by returning to yoga's roots and again emphasizing the meditative components of the practice.

The present study suffers from a number of limitations not the least of which was that the study was correlational in nature. Cause and effect or third variable causation cannot be distinguished. The present study utilized on-line survey where participants self-reported their practice and experiences. This assumes that the participants have an accurate memory of practice and experience and that they are completely honest and not falling prey to demand characteristics such as social desirability bias or the good-participant role. Some of the questions on the scales ask about experiences that are generally not discussed openly such as from the KAS "I've experienced feelings of some form of energy stored in the genital region" and from the MYST "I have had an experience in which ultimate reality was revealed to me." It is possible that the participant tempered their responses to be more aligned with socially acceptable norms. Also, the present study participants were either volunteers or students completing a course requirement. This greatly limits the generalizability of the results. Because of the large number of students there was a considerable skewing of the age distribution toward the younger ages. Separate analysis of the data for the students alone revealed essentially the same findings as with the total sample.

In conclusion, the findings suggest that yoga has associations with psychological/attentional changes reflected in mindfulness and also with the physical and sensory alterations as reflected in kundalini and mystical experiences. They further suggest that the total amount of yoga practice over days and years are associated with enhanced mindfulness and possibly mystical experiences, but the pattern and social conditions of practice have little association. Finally, the results support the hypothesis that yoga practice alters mindfulness and kundalini and mystical experiences through heightening the real time awareness and appreciation of sensory and perceptual experiences.

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