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A Qualitative Examination of Yoga for Middle School Adolescents

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Abstract

The present study was part of a group randomized controlled trial in which 7th grade students were assigned to a yoga intervention or physical-education-as-usual. Sixteen students were randomly selected from the yoga condition to participate in one-on-one interviews. Qualitative analyses revealed 13 themes that were organized into two categories: Usability (student perceptions of the usefulness, learnability, and convenience of the yoga intervention) and Effect (student perceptions of the direct results of the yoga intervention). Students reported both positive and negative opinions of yoga, especially when making direct comparisons between yoga and physical education. Students had particularly positive opinions regarding the beneficial effects of yoga on stress, sleep, and relaxation. Student opinions regarding the effects of yoga on self-regulation, social interaction, substance use, and academic performance were also generally positive, although somewhat mixed. Results suggest that qualitative research shows promise for providing an in-depth perspective on the impact of mind-body interventions in schools.

Keywords

Yoga; school; meditation; mindfulness; children

Introduction

According to large-scale epidemiological studies, the majority of serious and persistent adult mental health disorders have child-adolescent onsets (Kessler & Wang, 2008). In addition, the most consistent predictor of these disorders involves stress-related factors (Roberts, Roberts, & Chan, 2009). These issues – such as anxiety disorders, impulse-control disorders, and mood disorders – constitute significant emotional, psychosocial, and economic burden, particularly if left undiagnosed or untreated. Research suggests that implementing preventive, therapeutic programming during childhood and adolescence may have a positive

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impact on the future burden of disease for an individual, as well as their family, friends, and community (Greenberg, Domitrovich, & Bumbarger, 2001; Greenberg et al., 2003). Preliminary studies of mind-body interventions, such as yoga and meditation, suggest that these practices may have beneficial effects on children and adolescents in a variety of clinical and non-clinical settings (Hagen & Nayar, 2014). Yoga for children and adolescents typically involves four primary components: physical postures, breathing exercises, relaxation techniques, and meditation/mindfulness practices (Butzer, Ebert, Telles & Khalsa, 2015). While the majority of studies of yoga for youth are preliminary and suffer from methodological limitations, systematic and general literature reviews suggest that yoga participation is associated with improvements in mental and physical health (Birdee et al., 2009; Galantino, Galbavy, & Quinn, 2008; Hagen & Nayar, 2014; Kaley-Isley, Peterson, Fischer, & Peterson, 2010).

Yoga in Schools

One specific area that has received increasing attention involves examining the effects of mind-body interventions in school settings. Indeed, school-based yoga programs have shown increasing popularity in recent years (Butzer et al., 2015), with several conferences emerging that are devoted specifically to this field, such as the Kripalu Yoga in Schools Symposium and the National Kids Yoga Conference. In addition, several quantitative studies examining the effects of yoga interventions in elementary and high schools have recently emerged (see Khalsa & Butzer, 2016 for a review of this research). Most of these studies suggest positive effects of school-based yoga on student psychosocial outcomes such as self-regulation (Bergen-Cico, Razza, & Timmins, 2015), anxiety (Frank, Bose, & Schrobrenhauser-Clonan, 2014), and mood (Felder, Butzer, Olson, Smith, & Khalsa, 2015). However, this research is similar to studies of yoga for children in other settings in that it is preliminary and has several methodological weaknesses such as small sample sizes and a paucity of rigorous randomized controlled trials (Khalsa & Butzer, 2016). In addition, some quantitative studies have failed to find statistically significant between-group differences when comparing yoga to control groups such as physical education (Haden, Daly, & Hagins, 2014; Hagins, Haden, & Daly, 2013; Telles, Singh, Bhardwaj, Kumar, & Balkrishna, 2013), while other studies have found counterintuitive effects of school-based yoga, such as post-intervention increases in negative affect (Haden et al., 2014) and perceived stress (White, 2012).

Qualitative Research on Mind-Body Interventions for Youth

These inconsistent quantitative findings suggest the need for a more nuanced investigation of the effects of school-based yoga. Qualitative research – which collects data on the lived experiences of participants – is an efficient tool for exploring complex, unique experience (Paterson & Britten, 2004), enriching scientific knowledge beyond what can be gained quantitatively (Verhoef et al., 2005). For example, qualitative research provides a unique opportunity to examine similarities and differences between participants' phenomenological experience versus results that are obtained via quantitative measures. Qualitative methods also have a rich history in health program evaluation as these methods allow researchers to obtain detailed and nuanced opinions regarding intervention feasibility (Thorogood & Coombes, 2010).

Given that schools are multi-faceted social systems that can influence students in a variety of ways, qualitative research is particularly well suited to capture subtle processes of change that students may experience from preventive interventions. Indeed, there has been a call within the school-based yoga and mindfulness literature to collect data via additional methods aside from self-report questionnaires (Felter, Celis-de Hoyos, Tezanos, & Singh, 2016; Khalsa & Butzer, 2016). This call stems largely from the fact that school-based yoga is a nascent field with much that remains to be done in order to fully elucidate the mechanisms and effects of these interventions (Khalsa & Butzer, 2016). Among the many unknowns include students' personal preferences regarding school-based yoga, such as the appropriate duration/frequency of the intervention, potential age, gender, and cultural differences in intervention acceptability and feasibility, and students' personal opinions regarding the psychosocial effects of yoga practice. Qualitative research is well suited to examine these questions based on its ability to assess students' unique phenomenological experiences.

To our knowledge, 14 qualitative studies of youth-based mind-body interventions have been conducted, all of which have generally shown positive participant-reported outcomes for children, adolescents, and young adults (Case-Smith, Shupe Sines, & Klatt, 2010; Conboy, Noggle, Frey, Kudesia, & Khalsa, 2013; Dariotis et al., 2016a; Dariotis et al., 2016b; Dariotis et al., 2017; Finnan, 2015; Miller et al., 2014; Rosaen & Benn, 2006; Sibinga et al., 2011; Sibinga, Perry-Parrish, Thorpe, Mika, & Ellen, 2014; Tharaldsen, 2012; Wall, 2005; Wang & Hagins, 2016; Wisner, 2014). However, it is important to note that only 12 of the 14 aforementioned studies were conducted within school settings, and only eight evaluated yoga interventions. The eight qualitative studies specifically focused on yoga within school settings have generally shown positive self-reported outcomes (Case-Smith et al., 2010; Conboy et al., 2013; Dariotis et al., 2016a; Dariotis et al., 2016b; Dariotis et al., 2017; Finnan, 2015; Miller et al., 2014; Wang & Hagins, 2016).

For example, Conboy et al. (2013) implemented a yoga intervention in a rural public high school (9th and 10th grades) in Western Massachusetts. During the treatment phase, yoga class was held in place of physical education classes for twelve weeks. Qualitative interviews with 27 students who participated in the yoga program revealed that students reported increased kinesthetic sensitivity, self-awareness, self-compassion, and healthy behaviors. However the students also mentioned several issues related to feasibility, such as recommending smaller segments for the intervention, integrating yoga classes into the physical education curriculum as an optional class, and modifying survey lengths for ease of use (Conboy et al., 2013). Similarly, Case-Smith et al. (2010) studied the effects of an eight-week school-based yoga program for third-grade students from a resource-limited neighborhood in a large Midwestern U.S. city. The focus group participants (21 students) described that yoga increased feelings of relaxation, concentration, self-control and emotional regulation via breath-control, positive self-concept, and enhanced interpersonal relationships. Participants also associated yoga with feelings of increased body-awareness, positive self-concept, self-esteem and social participation.

Purpose of the Present Study

In summary, while some studies have used qualitative methods to examine mind-body interventions for youth, very little qualitative research exists on student perceptions of school-based yoga in particular. It is important to specifically investigate student perceptions of school-based yoga given that, in addition to incorporating aspects of mindfulness and/or meditation, yoga differs from conventional mindfulness-based programs in that yoga also includes physical postures and breathing exercises (Butzer, Bury, Telles & Khalsa, 2016). In addition, the majority of qualitative studies of school-based yoga have been conducted on high school students (Conboy et al., 2013; Miller et al., 2014; Wang & Hagins, 2016) and elementary school students (Case-Smith et al., 2010; Dariotis et al., 2016a; Dariotis et al., 2016b; Dariotis et al., 2017; Finnan, 2015). Furthermore, no studies of school-based yoga have directly compared quantitative and qualitative results emerging from the same sample. The current study addresses these limitations by conducting a qualitative assessment of 7th grade students' subjective experience of a school-based yoga program, as well as students' perceptions of the potential effects of the program on psychosocial well-being within the context of a broader quantitative study conducted on the same sample. To our knowledge, this is the first qualitative study of yoga for 7th grade students.

Methods

Overall Quantitative Study

The present qualitative study is part of a larger quantitative study that involved a group-randomized controlled trial conducted in 2013–2014 at a public school in Boston, Massachusetts (Butzer, LoRusso, Shin, & Khalsa, 2016). The school serves grades 7 through 12 and is an exam school requiring students to place above a certain score on the Independent Schools Entrance Exam in order to attend (Boston Public Schools, 2008). Inclusion criteria for the overall quantitative study were registration for seventh grade physical education (PE), written informed consent by a parent, and written child assent. During the 2013–2014 school year, 404 seventh-grade students were enrolled at the school. The graduation rate was 98.9%, and 34.5% of students were considered low income (students eligible for free/reduced price lunch or food stamps, or receiving Transitional Aid to Families benefits). The race and ethnicity demographic during this school year was 9.2% African American, 29.8% Asian, 10.6 % Hispanic, 47.1% White, 0.1% Native Hawaiian, Pacific Islander, and 3.1% Multi-Race, Non-Hispanic. The gender ratio was 54.8 % female and 45.2 % male (MESE, 2015).

Eligible participants were group randomized into the experimental condition (yoga) or active control group (PE-as-usual) by PE class section. The yoga intervention consisted of a 32-class version of the Kripalu Yoga in the Schools (KYIS) curriculum, which focuses on enhancing stress management, emotion regulation, self-appreciation, confidence and strong peer relationships through yoga, mindfulness, and didactic/experiential activities (KYIS, 2015). The KYIS intervention was integrated into the school's PE curriculum for part of the school year and thus replaced students' regularly scheduled PE classes for a period of approximately 6 months. Each yoga session was approximately 35 minutes long and occurred 1 to 2 times per week. A typical yoga session involved centering and breathing

exercises (~5 minutes), warm-ups (~5 minutes), yoga poses (~15 minutes), didactic/experiential content (~5 minutes), and relaxation (~5 minutes). The didactic/experiential content included activities and games aimed at encouraging social interaction (e.g. group discussions, students leading poses) and self-discovery (e.g. holding a posture beyond initial resistance, journaling about ways to de-stress) (see Butzer, LoRusso et al., 2016 for a detailed description of the yoga intervention). The study protocol was reviewed, approved, and overseen by the Brigham and Women's Hospital Institutional Review Board (Partners Human Research Committee).

The Current Qualitative Study

Participants—A subset of the students in the yoga group were randomly selected to participate in post-intervention qualitative interviews. Specifically, a random number generator was used to select three male and three female students from each of the eight PE class sections that were assigned to the yoga group in the overall quantitative study, with the intention of interviewing one male and one female from each class section ($n = 16$ students total). We randomly selected more students than we actually interviewed as a precaution in case a student was absent or verbally declined participation on the actual interview date. The majority of the interviewed students were white, however other racial groups were also represented (Table 1).

A Yoga Evaluation Questionnaire (YEQ) was created by the present researchers and administered to all participants in the larger quantitative study immediately after the yoga intervention was complete. Four items from this questionnaire were used in the present study to examine potential differences between the entire yoga group and the 16 students who were interviewed. The YEQ uses visual analogue scales ranging from 0 ("not at all") to 100 ("very much so") to evaluate the extent to which students enjoy yoga, find it beneficial, whether they would recommend it to friends, and their participation and interest in yoga outside of the study. Independent samples *t*-tests comparing responses on the YEQ between the sub-sample of interviewed students and the students from the yoga group who were not interviewed revealed no significant differences between groups, suggesting that the views of the interviewees were similar to the opinions of the full yoga group (Table 2).

Procedures—An IRB-approved passive consent process was utilized in which all of the yoga-group students from the overall quantitative study were asked to provide their parents with a study information letter explaining that their child may be interviewed as a part of the sub-study. Parents were asked to contact the school or study staff if they did not want their child to participate in the interview. On the interview date, students were given the option to verbally opt out of participating in the interview. Students did not sign an assent form to participate in the interview, as their participation was taken as an indication of their assent. No parents declined to have their child interviewed. On the scheduled interview date, one student verbally declined participation, thus study staff selected the next student from the randomized list for that class. Interviews were conducted post-intervention, 6 weeks after yoga program completion. Each interview was audio-recorded with student permission, and students were compensated with a \$10 iTunes gift card for participating in the interview. The interviews averaged 26 minutes in length (range 14 – 45 minutes).

Four of the authors (LC, BB, AL, SBSK) created the semi-structured interview script, which included questions assessing students' experiences with the yoga classes, experiences with the study procedures, and potential psychosocial changes associated with yoga practice. The overarching goal of the quantitative RCT was to examine the impact of school-based yoga on psychosocial risk factors for substance use, thus several directed questions were included in the script. The directed questions involved asking students about their opinions regarding the potential effects of yoga on stress/mood, self-regulation of behavior, attention, school performance, sleep quality, substance use, health behaviors, and the use of yoga-based skills outside of class. The open-ended questions related primarily to program feasibility and students' experience-narrative of the yoga classes. In other words, the present study employed a hybrid methodology that allowed for both pre-determined and emergent themes (see Appendix A for the interview script). Two interviewers familiar with yoga and meditation were trained to conduct the one-on-one interviews face-to-face (FR, RW). Two additional individuals were also trained to conduct the interviews (BB, AL) in the event of extraneous circumstances that may have prevented either of the two primary interviewers from being available (e.g. being ill). However no such extraneous events occurred thus only two interviewers (FR, RW) conducted the actual interviews.

Analysis—Analysis was directed primarily by a grounded theory approach (Glaser & Strauss, 1967). Potential bias in the data analysis procedures was addressed in several ways. First, before any interviews were conducted, all of the authors who were going to be involved in coding the transcripts participated in an anthropological exercise that involved evaluating and sharing their biases, thus making these biases transparent and allowing them to be part of group discussions throughout the analysis phase. In addition, the audio transcripts were double coded independently by at least two authors (FR, AL, BB, RW, KF). Any disagreements in coding were addressed by discussion. Primary coding consisted of searching for pre-determined themes and emergent themes in each transcript. Occurrence and validity of found themes were validated by at least two coders.

Potential coder and interviewer bias were addressed by having multiple individuals from a variety of backgrounds perform both the coding and the interviews, thus allowing the results to be representative of a wide range of viewpoints. In addition, we protected against biased interview questions by using a semi-structured interview format that primarily requested narratives of experience, and only then were particular focused questions asked. This process allowed participants to share what was important to them (in the narrative) without probes. During analysis, coders were encouraged to code for both positive and negative information to ensure that the analysis did not focus exclusively on seeking evidence in support of school-based yoga. Furthermore, the two authors who conducted all of the interviews (FR, RW) were not involved in the larger quantitative study and were not made aware of any of the study hypotheses before conducting the interviews or coding the transcripts. In addition, in order to ensure consistency in the questions asked across interviews, the interviewers were instructed to carefully follow the semi-structured interview script with very little deviation aside from using pre-determined probes to gather additional information when students gave brief answers such as “yes” or “no”. After thoroughly analyzing the transcripts and finalizing the coding and themes, the coders went back into the

transcripts to collect representative quotes. All authors needed to agree on the use of specific quotes.

Following the recommendations of Price et al. (2006), in most cases terms such as “all,” “most,” “a few,” and “one,” are used to give an approximate indication of the number of students who endorsed each of the themes. However, due to the authors’ particular interest in students’ perceptions of the yoga intervention and its effects on psychosocial well-being (described above), exact response frequencies were calculated for the interview questions addressing the following five topics: experience of the yoga classes, stress-mood, sleep, substance use, and academic performance. These frequencies were calculated by two authors (AL and KF) who coded all 16 transcripts with regard to the valence of each response, specifically whether students had a positive (+), negative (−), mixed (both + and −), or neutral (neither + nor −) opinion regarding each of these five topics. Any discrepancies between codes were discussed until a resolution was achieved. The response frequencies are reported in Figures 1–5. For direct quotes, we provide each student’s gender and classroom, with classrooms numbered 1 through 8 to represent the eight different PE class sections that were assigned to the yoga condition.

Results

The qualitative analysis revealed 13 themes that can be organized into two primary categories: usability and effects (described below). We distinguish between pre-determined (PD) and emergent (E) themes throughout the results section by placing a “PD” or “E” in brackets beside each theme.

1. *Usability*: student perceptions of the usefulness, learnability, and convenience of the yoga intervention. Themes here include:
 - a. *Yoga vs. Physical Education (E)*: Any discussion of similarities, differences, and/or preference between yoga and physical education (PE).
 - b. *Yoga Classes (PD)*: Opinions about yoga class expectations, scheduling, format, and subject matter.
 - c. *Application of Yoga Outside of Class (PD)*: Yoga techniques, philosophy, or theoretical knowledge learned in the yoga program applied outside of the course in daily life; either personally, taught to others, or mentioned as used by other students.
 - d. *Yoga and Athletics (E)*: The application of yoga techniques and/or knowledge to support athletic performance; or opinions about the effects yoga has or could have on athletic performance.
 - e. *Breathing Techniques (PD)*: Any reference to the use, effects, and/or opinions about breathing technique(s) taught during the intervention.
 - f. *Postures (PD)*: Any discussion of yoga postures performed or learned during the intervention.

2. *Effect*: student perceptions of the direct results of the yoga intervention. Specifically, students mentioned effects of yoga on the following factors:
 - a. *Relaxation (E)*: Any reference to the connection between yoga and relaxation (i.e. yoga having a calming effect, inducing a state of relaxation, etc.).
 - b. *Stress-Mood (PD)*: Any reference to the practice of yoga affecting one's stress and/or mood.
 - c. *Social Interaction (E)*: Any reference to the impact of yoga practice on social interaction and social skills in or outside of the yoga intervention.
 - d. *Self-Regulation of Behavior (PD)*: Any reference to the practice of yoga cultivating behavioral self-regulation.
 - e. *Sleep (PD)*: Any discussion, opinion or personal experience of the impact of yoga practice or techniques on sleep.
 - f. *Substance Use (PD)*: Any discussion, opinion or personal experience of the impact of yoga practice on substance use.
 - g. *Academic Performance (PD)*: Any reference to the impact of yoga practice on grades, study habits, homework, test taking, etc.

Usability

Yoga vs. Physical Education (E)—Many students brought up direct comparisons between yoga and PE during their interview. In general, students were mixed with regard to their opinions of yoga as compared to PE, with some students enjoying and appreciating yoga, while others preferred PE. As one female student shared, “Well I liked [yoga] more than gym. Because gym is like, well it’s kind of boring... Yoga was like more entertaining. And we were always laughing and stuff” (class 2). In contrast, another female student stated:

Basically for like an hour we just had to stand there and balance [in] a pose. And I kind of felt, I don’t know, I didn’t like [yoga] because I’d rather be running around and stuff and doing something that’s more physical than doing a balance off the wall (class 3).

The most common criticisms of the yoga intervention were that a) it was too long, and b) that students would have liked to have been able to choose between being in the yoga or PE group. Some students also expressed concern over yoga not providing a rigorous enough workout.

Yoga Classes (PD)—Our valence analyses revealed that 44% of the students ($n = 7$) had a positive opinion of the yoga classes, whereas 25% of students had negative ($n = 4$) or mixed ($n = 4$) opinions (Figure 1). The most commonly mentioned positive component of the classes involved having an opportunity to rest/relax. As one female student shared:

I like the end ‘cause this school can be pretty stressful so, you can like relax even if you have like a test coming up that day. You don’t have to be anywhere you can just

relax. So I like that. It was just a good time to be relaxed and not focus on anything (class 4).

Some students also mentioned enjoying having an opportunity to bond with their peers. For example, "...as seventh graders we are all new from different schools. We all don't...didn't know each other and I think the yoga really helped" (female; class 5).

The most commonly mentioned negative component of the classes involved a desire to engage in more rigorous physical activity. For example, one student suggested improving the yoga classes by making them "...a little bit more active and not us just sitting still. Maybe more moving around" (male; class 6). Some students also mentioned classroom management issues interfering with their enjoyment of the classes. In addition, several students mentioned that they didn't initially think that they would like yoga, but were pleasantly surprised and ended up liking it in the end:

I never thought I would be doing yoga at any point in my life. But I did and I liked it. And once I found that it was challenging, that shocked me. Because I thought [yoga] was just laying down and relaxing the whole time. And I liked some of the more complicated poses. And I thought that was...shocking. I thought they would all just be easy (female, class 8).

Application of Yoga Outside of Class (PD)—Many students mentioned applying techniques learned from yoga outside of the program. For example, several students mentioned using breathing exercises and yoga postures before bed as a sleep aid. As one female student shared, "I think I've been [sleeping] deeper and more comfortably because also, along with the foot on the wall, I also do the three part breathing so that I can relax myself before I try and fall asleep" (class 2). Some students were less specific, in that they mentioned an improvement in sleep as a result of yoga, however they did not explicitly state that they used a particular technique. As described in more detail below, some students also mentioned applying yoga techniques to their sports regimen. In addition, some students mentioned using specific breathing techniques to help prepare for tests, while other students mentioned general improvements in academic performance without explicitly describing the use of a particular technique. As one female student shared, "Well, I've seen lots of my classmates, yoga has allowed them to relax a little bit before they begin tests" (class 7).

Yoga and Athletics (E)—Some students mentioned that yoga enhanced their performance in other sports, particularly with regard to improvements in flexibility and breathing:

I like to run, a lot. And it can usually go better when I feel flexible. And I've been feeling better when I run [since practicing yoga]. I also ski and the balance has helped a lot. I [do] better trails, harder trails now (male; class 6).

Yoga helped with flexibility and the stretches and everything [with regard to skating]. Like before I wasn't even close to being able to do a split. But now, I still can't, but I'm getting closer. So I think if I keep practicing yoga, I'll have the split pretty soon. And a lot of other things I noticed. Like balance. Now I don't fall as much when I do the jumps and stuff... The balance helps (female; class 8).

In addition, one student mentioned directly applying the skills they had learned in yoga to a sport that they were involved in (fencing), and another student described an increased tendency to stretch before sports.

Breathing techniques (PD)—Many students reported using yoga-based breathing techniques in a variety of situations both within and outside of the yoga program. For example, students mentioned using three-part breathing (i.e. diaphragmatic breathing) to manage stress, such as before a test, during a trying social situation, or before bed:

I also liked the breathing exercises cause... when I was feeling stressed it helped doing it at home. I can't breathe sometimes or when it's really humid, I feel like I'm having a panic attack a little bit. So it really helped. And I just am like breathe in, breathe out. And the three part breathing really helped build up muscle and stuff like that (female; class 5).

Despite the fact that breathing techniques were a pre-determined theme (i.e. there was an interview probe regarding breathing techniques), students often brought up their use of breathing techniques without an interview prompt specifically asking about this topic.

Postures (PD)—Most students reported enjoying the yoga postures, particularly the relaxation poses such as lying on the mat at the end of class. As one female student shared, "I liked when we laid down on the mat. Oh my god that was my favorite part. Because then I could just like finally lay down. I was just so tired. But, yeah that was my favorite part" (class 3). Based on previous experience of yoga or athletic ability, students varied with regard to their criticisms of the yoga postures, with some students feeling that the poses were awkward or not challenging enough, while others believed the poses were too challenging/difficult. Several students expressed that the breathing exercises were more adaptable and useable outside of class compared to doing a specific yoga posture during a stressful or difficult situation.

Effect

Relaxation (E)—Many students reported feeling more relaxed since beginning the yoga program, particularly during and immediately after the yoga classes. As one male student shared, "I think if someone were to be stressed I think [yoga] would be a great opportunity to just like give [them] a chance to calm down" (class 1). As mentioned previously, many students seemed to apply this relaxed state into other stressful aspects of their lives, such as before tests and to help with sleep. Some students expressed that many of the benefits achieved from yoga could be narrowed down to stress reduction and relaxation, however a few students reported feeling fatigued (as opposed to relaxed) after the yoga classes. As one female student shared, "In the morning you get like really tired after you do yoga and then you're just going through your classes in a like trance" (class 6).

Stress-Mood (PD)—Our valence analyses revealed that most students (69%; $n = 11$) thought that yoga was helpful for managing stress and could elevate mood (Figure 2). Indeed, many students mentioned that having an opportunity to relax during yoga had beneficial effects on mood and that yoga had a calming effect when they felt stressed. As

one male expressed, “I felt like it was [easier] to calm myself if I was like nervous about something...or just like to deal with my stress” (class 7). Some students (25%; $n = 4$) had mixed views regarding the potential effects of yoga on stress and mood. For example, one male participant felt that yoga could help students manage stress on a short-term basis, but expressed that only practicing twice a week would not solve all of one’s stress:

I think [yoga] does actually calm you down a fair amount if you’re doing it right and trying to calm down. For a short period of time. And if you try to do [yoga] sometimes then it may help. But just doing it once and then not doing it the rest of the week, or maybe just doing it twice a week, doesn’t really help at all the other time[s] (class 3).

Similarly, another male student stated, “I don’t think [yoga] makes people necessarily happy. But I think it puts them in like a, I don’t know how to say this, like just a okay mood. It doesn’t make you happy, but if you’re sad you would, after doing yoga you might be at like a temperate mood maybe” (class 5).

Social Interaction (E)—Several students reported enjoying the social environment of yoga, by expressing an appreciation for the social interactions and skills that were experienced during class. As one female student shared, “It was interesting because we all got to share and sometimes we even got to talk to each other. [...] I like that we got to work together because it’s like we’re a whole group, we’re all family and I like that kind of feeling” (class 7). However, a few students felt uncomfortable performing the yoga poses within the context of a large class that was composed of both males and females with varying levels of ability and interest. As one female student shared, “It’s kind of weird when you’re supposed to do some pose then you go over [to] your mat and you’re next to someone you don’t know who’s a boy” (class 6).

Self-Regulation of Behavior (PD)—When directly asked about the potential effects of yoga on behavior, most students felt that yoga would not directly change or affect a person’s behavior. As one male student shared:

I think [yoga] doesn’t really do anything to help one’s actions. Because after the stretch, you’re still yourself. Nothing really has changed except maybe something, maybe your mood or something. But like besides that I don’t think anything else has really changed (class 5).

However, in response to other interview questions, many students brought up instances where they used techniques, such as the breath, in order to regulate their behavior. For example, some students mentioned that yoga postures and breathing exercises kept them calm when they were angry, and thus helped them avoid lashing out at others during difficult social situations. As one male student shared, “If you had the yoga class earlier and somebody just did something terrible to you [...] you’d just stop and breathe. You’d be like okay. It won’t [...] ruin your day” (class 1). Similarly, a female student shared, “I think [yoga] might have helped me when I was angry at someone. I just breathed through it and try to be not angry anymore” (class 2). In other words, although several students noticed a

positive impact of yoga on their behavior, they sometimes had difficulty making these direct connections when explicitly asked.

Sleep (PD)—Our valence analyses revealed that most students (62%; $n = 10$) had a positive view of yoga's ability to improve sleep (Figure 3). For example, many students noticed that they were falling asleep quicker, staying asleep, and sleeping more soundly, with falling asleep more quickly being the most common improvement students noticed about their sleep. As one male student shared, "Yea, I can sleep a lot better, fall asleep faster" (class 6). Some students did not notice general changes in their sleep from participating in the yoga classes, however they reported using postures and breathing exercises at home to improve their sleep. A few students (19%; $n = 3$) had a neutral view in that they didn't believe that sleep would be affected either positively or negatively by yoga.

Substance Use (PD)—Our valence analyses suggest that the majority of students had either positive (44%; $n = 7$) or neutral (31%; $n = 5$) opinions regarding yoga's potential effects on the use of drugs, alcohol, and cigarettes (Figure 4). In particular, several students felt yoga could have positive, but indirect, effects on substance use, mostly by improving people's ability to think before they act, and therefore make better decisions regarding drugs and alcohol. In addition, some students felt that yoga could be one of many options to prevent or treat substance use, and brought up the complexity of addiction:

[For] addictions, I wouldn't say yoga is the answer, [it] could be one of many answers, but addictions are a terrible thing, you can't just say do yoga and boom you'll be cured, the person has to believe they can change. If yoga can make them believe they can change then maybe the person will strive for that, and change (male; class 1).

Of the students who had neutral (31%; $n = 5$) or mixed (25%; $n = 4$) views regarding whether yoga would have an impact on substance use, some brought up specific aspects of the yoga classes and/or the demographics of their school as contributing factors. For example, one female student shared, "I don't know if [yoga] would really affect the decision [to use drugs/alcohol] because it was never really brought up or anything in any of the [yoga] classes so I guess not" (class 1). Similarly, a male student shared:

The [students] who are [at this school] all have like practically a negative view on alcohol and drugs. Because they're like 'Oh no that's bad for you it's gonna like make you live less long,' so I don't really think yoga will have such a change here maybe because we're already like thinking drugs and alcohol are bad for you. But like maybe in like, somewhere like, in a, I don't want to say this but like a worse school? Like maybe yoga would have more of an impact [there] because, yeah, [students there] don't really have too much of a negative view on drugs and alcohol, per say (class 2).

In summary, some students did not make a direct connection between yoga participation and substance use, however none of the students mentioned that yoga would have negative effects on (i.e. promote) substance use.

Academic Performance (PD)—Our valence analyses revealed that a few students (25%, $n = 4$) felt that yoga had a positive impact on their academic performance. As one male student remarked:

I didn't notice it at first but I noticed since I started yoga in term 2. In term 1 my science grade was like a C but last term in science I got a B and this term I'm pretty sure I have an A average right now. And I sort of feel like that's because of yoga, because I have science immediately after yoga (class 2).

However, in most cases when students were asked directly about whether they felt that yoga helped with grades or the ability to do schoolwork, they often had mixed opinions or replied with “no” or “I don't know” (Figure 5). As one male shared, “I'm not sure about [whether yoga might help with grades] because this is the first year that I've been at a much larger school where [...] the grades aren't inflated...but I don't think [yoga] actually has helped that much with [grades]” (class 3). Interestingly, at other points in the interview, many students would speak about using breathing techniques before tests or that, because yoga helped with nervousness, they were able to perform better with regard to public speaking or homework. Thus it appeared that several students used yoga-based techniques to manage school-related stress, however most students did not feel that there was a direct relationship between yoga and improved academic performance.

As the same male student above expressed, “I think that [yoga] has helped me calm down before tests, in classes where I had a test. If I have yoga and then I know in the next class I'm going to have a test, then it can help me calm down for that test” (class 3). This effect was similar to another male student who explained that yoga may have been the cause of decreased test stress, “...a lot of the times when I'm taking tests, I start running low on time. My hands will start to shake and I won't be able to write straight, but halfway through the yoga I was, it like, stopped feeling that way a lot” (class 6). However, when later asked if yoga had any effect on his grades, he responded, “Um, I can't tell my grades have been the same, pretty much, all of the terms” (class 6).

Discussion

Our analyses revealed 13 themes that can be organized into two general categories relating to *usability* (i.e. student perceptions of the usefulness, learnability, and convenience of the yoga intervention) and *effects* (i.e. student perceptions of the direct results of the yoga intervention). With regard to usability, students learned a variety of yoga-based exercises and skills as a result of the yoga program. For example, students reported that they used many of the skills taught during yoga in a variety of contexts, such as before tests, as a supplement to their athletic regimen, and before going to sleep. Students had both positive and negative opinions of the actual yoga classes, particularly when they made direct comparisons between the yoga intervention and standard PE. With regard to the effects of the yoga program, students reported that yoga may have a number of beneficial effects on factors such as relaxation, stress, mood, self-regulation, social interaction, sleep, substance use, and academic performance. Students had particularly positive opinions with regard to yoga's ability to help with stress and enhance sleep and relaxation, both within and outside of the yoga classes. Student opinions regarding the effects of yoga on self-regulation, social

interaction, substance use, and academic performance were also generally positive, although somewhat mixed.

Comparisons with Previous Research

The results of the present study are, for the most part, consistent with prior qualitative research on yoga in schools (Case-Smith et al., 2010; Conboy et al., 2013; Dariotis et al., 2016a; Dariotis et al., 2016b; Finnan, 2015; Miller et al., 2014; Wang & Hagins, 2016). For example, many students in the present study reported that they found yoga helpful for enhancing relaxation and reducing stress, a finding that is similar to other qualitative studies of school-based yoga (Conboy et al., 2013; Case-Smith et al., 2010; Dariotis et al., 2016a; Dariotis et al., 2016b; Miller et al., 2014; Wang & Hagins, 2016). Several students in the present study also reported that yoga helped foster positive interpersonal relationships, a result that is consistent with the qualitative findings of Conboy et al. (2013) and Finnan (2015). In addition, many students in the present study reported using yoga-based skills in other areas of their lives, a finding that is similar to other qualitative studies showing that students report using the skills learned during yoga in other contexts such as before bed or prior to tests (Dariotis et al., 2016a). Similar to Conboy et al. (2013), students in the present study also had mixed feelings about yoga enjoyment and comparable criticisms of the yoga program (e.g. missing PE class). Finally, students in the present study made frequent reference to the use of breathing techniques, a finding that is similar to Conboy et al. (2013).

In contrast to the current findings, two qualitative studies of yoga in schools found that students reported associations between yoga practice and enhanced academic performance (Conboy et al. 2013; Wang & Hagins, 2016), whereas the current sample mostly felt mixed or unclear about the effects of the yoga program on their grades. Three qualitative studies also found that students reported associations between yoga practice and improvements in self-regulation (Dariotis et al., 2016a; Dariotis et al., 2016b; Wang & Hagins, 2016), whereas the current sample did not often make direct associations when explicitly asked about potential links between yoga and their behavior. It is interesting to note that in some cases when students were directly asked about the effects of yoga on psychosocial and behavioral outcomes, they did not make an immediate association between yoga and other aspects of their lives. However, at other points during the interviews, students would often make comments regarding the beneficial effects of yoga on several outcomes such as academic performance and self-regulation. For example, when some students were asked directly if yoga had affected their grades, they responded that they were unsure or could not tell; however later in the interview they offered evidence of yoga's effect on managing stress related to their coursework.

One possible explanation for this finding is that the students simply did not experience a direct link between reductions in school-related stress and improvements in academic performance. An alternative explanation could be that the participants lacked a certain degree of self-awareness due to their age / developmental level. Indeed, Blakemore and Choudhury (2006) suggest that before and at the onset of puberty, social cognition is impaired, in that functions that facilitate self-awareness, theory of mind, and perspective taking are not fully developed. Thus it is possible that some students did not perceive a

direct correlation between yoga and its effects on cognitive and social tasks due to the developmental level of the adolescent brain. Consistent with this hypothesis, several of the qualitative studies that have found direct associations between yoga, academic performance, and self-regulation were conducted with high school students who may have reached a developmental level that allowed them to be more aware of these changes. These findings highlight the value of conducting qualitative research on a variety of samples in order to examine nuanced differences between participants of different ages, races, and cultures.

The present findings are also consistent with several quantitative studies of school-based yoga. For example, most students in the present study reported that yoga had beneficial effects on stress and mood, a finding that is similar to quantitative studies that measured psychosocial outcomes via self-report questionnaires (e.g., Felver et al., 2015; Frank et al., 2014; Noggle, Steiner, Minami, & Khalsa, 2012). However the present study is also unique in that it provided an opportunity to examine potential similarities and differences between the current qualitative findings and the results of the larger quantitative study within which the current study was embedded (Butzer, LoRusso et al., 2016). The quantitative study found that students in the control condition reported a greater willingness to smoke cigarettes immediately post-intervention than students in the yoga condition, however immediate pre-to post-intervention effects did not emerge for any of the other outcome measures such as mood impairment or perceived stress. In addition, a pattern of sleeper effects emerged in which females in the yoga condition and males in the control condition reported improvements in emotional self-control one year after the intervention had ended. These quantitative findings stand in contrast to the findings of the present study in that qualitatively, most students reported immediate post-intervention effects of the yoga program on outcomes such as stress and mood. In addition, many students reported immediate post-intervention use of yoga-based skills and techniques to help with emotional self-control, such as taking a breath when feeling angry. In other words, it appears that students were able to verbally describe some beneficial effects of yoga that were either not immediately captured by the post-intervention self-report questionnaires or that did not emerge on these questionnaires until one year later. All of the self-report questionnaires that were used in the quantitative study were validated in adolescent populations, however it is possible that the current qualitative research methodology was better suited than the self-report questionnaires to capture immediate and subtle changes in psychosocial outcomes.

Contributions to the Literature

The results of the present study add to the literature on school-based yoga in several ways. First, to our knowledge this is the first qualitative study of school-based yoga for 7th grade students. In addition, the current study provides valuable information above and beyond the data gathered via self-report questionnaires in the larger quantitative study (Butzer, LoRusso et al., 2016). For example, the qualitative interview questions regarding the intervention solicited student experiences on detailed aspects of the intervention such as relative preference for individual components. In addition, the questions related to psychosocial outcomes were able to solicit students' perceptions of the efficacy of the intervention in general, in addition to their personal experience of efficacy.

The questions regarding students' experience of the yoga program also provided information on program feasibility and processes of change that the investigators were unaware of or had not considered, such as some students feeling that the intervention was too long.

Understanding such process variables as well as the lived experience of the participant is particularly relevant for informing program development. For example, some students mentioned enjoying having an opportunity to bond with their peers during yoga, which is something that the investigators did not anticipate and did not query via self-report questionnaires. This information could be applied in future programs by increasing students' opportunities to interact, particularly in cases where students do not share other activities.

Similarly, most students brought up direct comparisons between yoga and PE during their interview. This finding emerged without prompting, which suggests that PE served as an important comparator to yoga for the middle school students in this study. This finding is likely due to the study design given that students in the larger quantitative study were randomly assigned to participate in either yoga or PE, however this result does offer suggestions for implementing future yoga interventions in similarly designed studies. For example, in planning future yoga interventions for this population, program developers could modify the existing KYIS intervention to address factors that students thought were lacking in comparison to PE by, for example, adding additional high-intensity exercises or providing more classroom instruction on the cardiovascular benefits of yoga postures.

Implications

The current study provided a unique opportunity to examine students' personal experience and opinions regarding the psychosocial outcomes of a school-based yoga program as well as program feasibility. With regard to psychosocial outcomes, the current findings suggest that school-based yoga may enhance skills and behaviors that are commonly targeted by social-emotional learning (SEL) programs. There is currently debate in the literature regarding whether school-based yoga and mindfulness should be considered SEL programs in their own right, or whether contemplative practices are better conceptualized as add-ons and/or complements to existing SEL programs (Butzer, Bury et al., 2016). While the KYIS yoga intervention that was used in the present study may not fulfill all of the explicit criteria of an SEL program as outlined by experts in this field (Weissberg, Durlak, Domitrovich, & Gullotta, 2015), students in the present study did report improvements in SEL-based skills such as self-management, self-awareness, and relationship skills. These findings provide partial support for a theoretical model that recently emerged suggesting that school-based yoga may enhance SEL and other positive student outcomes by fostering three key competencies: self-regulation, mind-body awareness, and physical fitness (Butzer, Bury et al., 2016). These findings are particularly important given that the current study was conducted in a middle school setting, where there is often a gap in SEL programming as the majority of research on SEL interventions has been conducted in elementary schools (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). It will be important for future research to more fully examine the potential associations and integrations between school-based yoga, mindfulness, and SEL.

The results of the current study also provide valuable information with regard to the feasibility of school-based yoga. Indeed, the themes of usability and effect carry important implications for implementing school-based yoga, particularly with regard to the sustainability of these programs. For example, it could be argued that if an intervention is usable and has positive effects, then it may show promise with regard to being sustainable in school settings. Sustainability, namely how a system remains diverse, productive, and healthy, is an important consideration with regard to school-based yoga, particularly in light of the fact that educational environments are often constrained with regard to the timing and budgets required to implement interventions (Greenberg et al., 2003). Usability and effect also show promise at the individual level. For example, if a student finds the application of yoga to be easy (usability) and experiences direct positive results (effect), it is possible that the student may be more likely to integrate these techniques into their daily lives (sustainability).

Prior research suggests that program feasibility and acceptability are key factors with regard to the sustainability of yoga and mindfulness/meditation in school settings (Mendelson et al., 2010; Walsh, 2012; Zenner, Herrnleben-Kurz, & Walach, 2014). While a small number of studies have discussed the feasibility, acceptability, and sustainability of school-based yoga and mindfulness programming (Dariotis et al., 2017; Feagans Gould, Dariotis, Greenberg, & Mendelson, 2016; Mendelson et al., 2013; Zenner et al., 2014), these topics are largely absent from the literature. The current study addresses this limitation by examining students' personal perceptions of a school-based yoga program. The results suggest that many students enjoyed yoga and found it beneficial, with several students using yoga-based skills in other areas of their lives such as athletics. However some students felt that the 32-session intervention was too long and wished they had been given the opportunity to choose between being in the yoga or PE group. Some students also worried that yoga would not give them a rigorous enough workout. These findings offer suggestions for future implementations of school-based yoga, such as encouraging students to use yoga-based skills in a variety of contexts, as well as potentially allowing students to self-select into yoga and ensuring that the yoga intervention is not too lengthy.

Limitations & Future Research

It is important to highlight several limitations of the present study. First, it may have been beneficial to include pre-intervention interviews, control group interviews, and/or school staff interviews, which would have provided a more well-rounded examination of student and school staff perceptions of the yoga intervention. In addition, while the current findings suggest that our random assignment procedures were successful at producing a sub-sample of students that were representative based on gender, classroom, and school demographics, and the interviewed students did not differ from the larger sample on their general perceptions of the yoga intervention, it is possible that interviewing a larger number of students may have provided a more balanced evaluation of the intervention. Similarly, while only one student declined to interview, it is possible that students who favored yoga were more willing to participate in the interview during PE versus those who strongly preferred PE class. Indeed, the overall quantitative RCT was designed in such a way that students were randomly assigned to participate in yoga or PE, thus some of the current findings may

be the result of students comparing yoga to PE instead of elucidating how the students felt about yoga in general.

Furthermore, the semi-structured interview script included some direct questions regarding pre-determined topics of interest, such as the potential effects of yoga on stress, mood, and academic performance, which may have influenced the students to discuss these topics in different ways than if their responses had emerged via open-ended questions. In addition, while several procedures were implemented to reduce the potential for bias, such as double-coding transcripts by researchers from a variety of backgrounds and recruiting interviewers who were unfamiliar with the study hypotheses, it is possible that the authors' personal opinions regarding the potential positive effects of yoga may have influenced the themes that were coded from the interviews. This is especially possible given that the authors are all yoga practitioners with an interest in promoting yoga in school settings. However, the fact that the authors include many examples of students' negative and/or mixed opinions regarding the impact of yoga suggests that the authors were open to both positive and negative data in their coding. Future qualitative studies should consider the possibility of recruiting study staff who are unfamiliar with (or have neutral opinions on) yoga. Finally, given that the study took place at an exam school, it is possible that the current results may not generalize to other public school populations. In conclusion, qualitative research shows promise for studying the effects of mind-body practices on adolescent well-being. However, future research should consider the aforementioned weaknesses in order to create a complete body of research. This includes both quantitative and qualitative studies that examine the specific, nuanced effects of yoga in schools.

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Appendix A

Interview Script

Date of interview: _____

Name of Interviewer: _____

Subject Initials: _____

Introduction

- Thank you for coming in for this interview

Purpose

- To explore how you think about yoga. Hear your experiences of the program. Learn more about your experience that we may have missed on the questionnaires

Confidentiality

- Your answers will never be linked to your name. You will remain anonymous. Only study staff will have access to the recordings and transcripts.
- These interviews usually take about 30–45 minutes.
- If there are any questions that you do not want to answer please let me know.
- Do you mind if I record the interview? Yes/No (turn on recorder)

1 Experience-narrative of classes:

- Please tell me how the yoga classes were for you?

Probe:

- Please tell me any stories from the yoga classes.

- What parts of the classes did you like?

Probe:

- Check-in, breathing exercises, warm-ups, games, postures, relaxation/ rest pose.
- Is there anything you would change?
- Did you learn anything new in the yoga classes? Any surprises?
- Is there anything you would like to learn more about?
- If it were possible would you like to continue the yoga classes?

2 **Yoga for mood, stress, self-regulation, and sleep**

- Have you noticed any changes in your life because of the yoga?
- I'm curious about how yoga might affect students' **stress and mood**. What do you think about this?

Probes:

- As you think about your own experience of yoga and how you felt before and after practicing, do you think that yoga might help with **feeling down or sad**? If yes, how?
- Do you think that yoga might help with **feeling stressed**? If yes, how?
- Do you think that yoga might help with **feeling anxious**? If yes, how?
- I'm curious about how yoga might affect students' **behaviors**. What do you think about this?

Probes:

- Do you think yoga might help with **staying calm** during upsetting situations? If yes, how?
- Do you think yoga might help people **stop and think** before they lose their temper or do something that they'll regret later?
- I'm also wondering about how yoga might affect the way that students **pay attention**. What do you think about this?

Probes:

- Do you think that yoga might help people **keep their attention on a project** even if the project is boring? (*Alerting*)
- Do you think that yoga might help people **figure out what to focus on first** when they have a bunch of different tasks to do? (*Orienting*). Example: If a student has several homework assignments, would yoga help them figure out which assignment to focus on first).
- Do you think that yoga might help people **pay less attention to distractions** so that they can focus on what's important? (*Conflict Monitoring*). Example: Choosing to pay attention to a teacher instead of a classmate who is acting out during class)

- Can you think of any situations since the yoga program started in which these types of things happened?
- Do you think yoga has had any effect on your **ability to do schoolwork**? If yes, what types of effects?
- Do you think yoga has had any effect on your **grades**? If yes, what types of effects?
- Have you noticed any **changes in your sleep** since you started yoga? If yes, what types of changes?

Probes:

- Do you think yoga might help you wake up less during the night?
- Do you think yoga might help you sleep better/more deeply?
- Do you think yoga might help you have an easier time falling asleep?
- Do you think yoga might help you be less sleepy and/or more alert during the day?
- Have any of your friends mentioned changes in their sleep since starting yoga?

3 **Yoga for substance use and health behaviors**

- One area that some people think a lot about is **alcohol and drug use**. Do you think that practicing yoga could affect the way that someone thinks about using:
 - Alcohol
 - Cigarettes
 - Drugs
- Have you noticed any changes in your **health** since starting yoga? If nothing has changed or if something has gotten worse, you can talk about that, too.

Probes:

- Have you noticed any changes in **how you eat**? How **much you eat**? Or in the **types of food** you eat?
 - Has the amount of **physical activity** and/or **exercise** that you do changed since you started yoga? If yes, how?
 - Has your participation in sports or your interest in playing **sports** changed since you started yoga?
- Have you noticed any changes in how you **feel about your body** since starting yoga? If yes, what types of changes?

Probes:

- Do you pay more (or less) attention to how your body feels throughout the day?
- Does your body feel better or worse?
- Does your body feel healthier? Or less healthy?

4 Use of yoga in other areas of life.

- I'd be interested to hear about any of the skills that you learned in yoga.
- Have you used these skills in any other areas of your life outside of yoga? Can you tell me an example?
- Have you seen any changes in your friends' behavior that might be due to the yoga? Any examples?
- This year your teachers have been doing a few things to help you stay organized and manage your time (examples: accordion files for class, dayplanner, locker photos). I'd be interested to hear your thoughts about these activities.
 - Did you find the activities helpful? If so, why?
 - Which activities were most helpful? Why?

5 Closure:

- Is there anything else you'd like to say about the yoga classes?
- Do you have any questions?
- How was this interview for you?

6 Observational notes (interviewer: Please record any body language, other cues):

Figure 1.
Overall experience of the yoga program among students interviewed ($n=16$).

Figure 2.
Student opinions on how yoga practice might affect one's stress and/or mood ($n=16$).

Figure 3.
Interviewed students' opinions on the effects of yoga on sleep quality and sleep hygiene
($n=16$).

Figure 4. Interviewed students' perceptions regarding how yoga may affect one's willingness to use cigarettes, drugs, or alcohol ($n=16$).

Figure 5. Interviewed student perceptions regarding how yoga may affect one's academic performance ($n=16$).

Table 1

Demographic Characteristics of Students Who Were Interviewed (n = 16)

Female	8 (50%)
Male	8 (50%)
Age ($\pm$ SD)	13.27($\pm$ 0.42)
Hispanic or Latino	0 (0%)
Not Hispanic or Latino	15 (94%) (1 unknown; 6%)
White	10 (63%)
Asian	3 (19%)
Black or African American	2 (12%)
More Than One Race	1 (6%)

Table 2

Yoga Evaluations Rated on a Visual Analogue Scale ranging from 0 (Not at all) to 100 (Very much so) by Yoga Group Students Who Were Not Interviewed and the Subset of Students Interviewed.

Question	Yoga Group Not Interviewed (<i>n</i> = 98)	Yoga Group Interviewed (<i>n</i> = 16)	<i>t</i> -statistic	<i>p</i> value
How much do you like yoga class?	43.28±33.03	53.67±27.62	-1.15	0.25
Did you find that yoga was helpful for you in general?	43.63±32.03	51.64±24.69	-0.90	0.37
Would you recommend yoga to your friends?	43.48±32.01	48.69±27.55	-0.56	0.58
How much would you like to continue practicing yoga?	38.42±33.08	51.38±22.64	-1.37	0.18

Note: Values are Mean ± Standard Deviation