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The *Yoga 11* Experience: A Case Study of an Alternative Physical Education Course

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Abstract

This article describes a qualitative case study that investigated the experiences of four high school students who recently completed a relatively new high school yoga course (*Yoga 11*). Individual in-depth interviews were conducted so as to enable an understanding of students' perceived benefits from their participation in this "alternative" physical education course. Students shared stories about yoga and about how it impacted their health, particularly with respect to mental and physical wellbeing. This research might be considered by researchers who similarly engage in inquiry related to the benefits of alternative physical education programs in public schools. It might also be used to inform health intervention possibilities within the context of public education.

Key words: yoga, mindfulness, physical education, alternative physical education

Yoga 11 : Étude de cas sur un cours d'éducation physique « nouveau genre »

Résumé

Cet article décrit une étude de cas qualitative portant sur les expériences de quatre élèves du secondaire qui terminaient récemment un cours de yoga relativement nouveau (*Yoga 11*) au niveau secondaire. Des entrevues en profondeur étaient menées pour mieux comprendre les perceptions des élèves quant aux bienfaits de leur participation à cet « autre genre » de cours d'éducation physique. Les élèves ont partagé leurs expériences de yoga et discuté de ses effets sur leur santé, en particulier sur leur bien-être mental et physique. Cette étude pourrait s'avérer utile aux chercheurs qui enquêtent sur les bienfaits de nouvelles formes de programmes d'éducation physique dans des écoles. Elle pourrait aussi aider à définir d'éventuelles interventions axées sur la santé dans des contextes éducatifs.

Mots clés : yoga, pleine conscience, éducation physique, éducation physique « nouveau genre »

Introduction

Within all Canadian provinces other than Manitoba and Québec, physical education becomes an elective course in high school (Hickson, Robinson, Berg, & Hall, 2012). Moreover, the gross majority of students, particularly female students, opt out of these elective physical education courses when they afforded the opportunity to do so (Gibbons, 2009; Robinson, 2012). At the same time, and oftentimes as a "solution" to this very scenario, many provinces and/or schools have developed and offer alternatives to "traditional" physical education. These "alternative" physical education courses include, for example, *Leadership* (Government of Prince Edward Island, 2013), *Outdoor Pursuits* (Government of New Brunswick, 1995), and *Exercise Science* (Government of Ontario, 2000). The introduction of these sorts of alternative physical education courses is an especially popular and recent phenomenon within Nova Scotia. What is more, Nova Scotia's contemporary context and political climate have certainly played a role in the introduction of a number of these alternatives.

Given this current situation, we were motivated to research *Yoga 11*, an especially unique alterative physical education course; it is only offered within Nova Scotia. While the content and pedagogies within *Yoga 11* are admittedly (sometimes) quite different than those within physical education, students within *Yoga 11* might reasonably expect to experience mental and physical health benefits. The need to uncover and understand these potential perceived health benefits provided the primary impetus for this inquiry.

The Local Context and Climate

Research has demonstrated that less than 1% of grade 11 female students within Nova Scotia are getting 60 minutes or more of moderate- to vigorous-intensity physical activity (MVPA) five days a week (Campagna et al., 2005, 2007). To put this statistic into proper perspective, consider that the Canadian Society for Exercise Physiology (CSEP; 2013) recommends 60 minutes of MVPA *daily* for this age group. Additionally, Active Healthy Kids Canada (2013) has recently observed that 32% of Canadian youth are overweight or obese. Within Nova Scotia, research has demonstrated a similar trend, with between 34% and 40% of female youth being overweight or at risk for overweight (Campagna et al., 2007; St. John et al., 2008). Though there is only weak and inconsistent evidence suggesting a correlation between physical activity and overweight in Nova Scotia students (Thompson et al., 2009), these observations, together, often garner public attention and political action.

Within this current milieu, one in which Nova Scotia youth are collectively labelled as inactive and overweight, two Government of Nova Scotia departments have recently published widely-disseminated reports that specifically address the health and wellness of Nova Scotia students. The first report, the Department of Health and Wellness's *Thrive! A Plan for a Healthier Nova Scotia* (Province of Nova Scotia, 2012), calls for increased physical education and improved physical literacy. This document, effectively a policy and environmental approach to improving physical activity and healthy eating, includes an action plan describing the need for the implementation of "30 minutes of quality daily physical education" (Province of Nova Scotia, 2012, p. 37). The second report, the Minister's Panel on Education's *Disrupting the Status Quo: Nova Scotians Demand a Better Future for Every Student* (2014), similarly calls for increased physical activity opportunities within Nova Scotia schools. Recommendations within this report suggest it is important to achieve national guidelines for daily physical activity while also promoting improved health and fitness through curriculum. Additionally—and this is especially

noteworthy—this second report also includes more holistic notions of health and wellness. For example, the report notes, "of all the input received on this topic [health and wellbeing], mental health supports stood out as the most significant issue" (Minister's Panel on Education, 2014, p. 50).

New Nova Scotia Curriculum Possibilities

With the Province of Nova Scotia identifying such goals related to health and wellness, increased attention has been focused upon school-based physical education and physical activity opportunities. Perhaps most significant has been the attention given to the introduction and implementation of a number of *draft* physical education curriculums. In addition to *Physical Education 7-9*, *Physical Education 10*, *Physical Education 11*, and *Physical Education: Leadership 12* (all draft curriculums; Province of Nova Scotia, 2009, 2011, 2013, 2015), high school students in Nova Scotia now have additional physical education-related options. That is, high school students (who must pass a single physical education-related course in order to graduate) may also elect to take *Fitness Leadership 11*, *Physically Active Living 11*, or *Yoga 11* (again, all draft curriculums; Province of Nova Scotia, n.d.a, n.d.b). It ought to also be noted that these courses are not available to all high school students in the province. A number of familiar contextual variables—including teacher expertise, school population, and student interest—influence the availability of these courses within schools. Within Nova Scotia, *Yoga 11* has become an especially popular and common course in high schools while others (e.g., *Fitness Leadership 11*) are less popular and less common.[i]

The *Yoga 11* Curriculum

The intention of the *Yoga 11* curriculum is for students to develop a lifelong personal practice of yoga, to maintain physical health and wellness, and to develop healthy relationships with self and others (Nova Scotia Department of Education, 2010). The *Yoga 11* curriculum is based on three modules of study. The first module, "Proper Breathing and Asana Practice," includes seven learning outcomes and is concerned, primarily, with the demonstration of various physical postures of yoga (*asanas*). The second module, "The Origin and Philosophy of Yoga," includes three learning outcomes based on the history of the practice. Although the ancient tradition of yoga has various forms and styles, *Yoga 11* students are expected to demonstrate an understanding of *Ashtanga* yoga. The third module, "Integrating a Mindful Practice," also has three learning outcomes. Topics related to this module include mindful eating practices, strategies to manage emotions and stress, and the application of yoga principles outside of yoga practice.

Why Teach Yoga in Schools? A Brief Review of Related Literature

Yoga is a comprehensive mind-body practice that involves physical postures and movement, breathing exercises, relaxation, and meditation to develop self-observation without judgment (Conboy, Noggle, Frey, Kudesia, & Khalsa, 2013). Moreover, this practice necessitates focused movement and breathing—with the ultimate goal of unifying the self at physical, emotional, cognitive, spiritual, and social levels (Conboy et al., 2013). Research literature has revealed that there are mental and physical benefits for those (including youth) who practise yoga. Moreover, there are established benefits to providing alternative physical education programs in high schools, particularly for female youth (e.g., see Gibbons, 2009).

Mental Health Benefits of Yoga

Chugh-Gupta, Baldassarre, and Vrkljan (2013) explained that youth anxiety is an emotional state of mind that is characterized by excessive and uncontrollable worry about typical challenges such as writing tests, public speaking, or illness. This anxiety is often linked to these particular obstacles and life situations (Chugh-Gupta et al., 2013). Emerging evidence has suggested yoga is beneficial as a complementary intervention to talk therapy and pharmacological intervention to this state anxiety (Chugh-Gupta et al., 2013).

Sharma and Haider (2013) also explained a traditional yoga practice encourages slow deep breathing techniques that may be used to relax the mind and body. Symptoms associated with anxiety often include short choppy breaths; yoga has been used as a therapy to treat these "warning signs" of anxiety. Yoga has also been used by youth looking for ways to lower their heart rates and blood pressure, without depending upon drug or counselling therapy. Sharma and Haider also found yoga could be an effective alternative for youth suffering from anxiety, as the controlled breathing techniques naturally activate the parasympathetic nervous system.

Noggle, Steiner, Minami, and Khalsa (2012) recently researched yoga practice as it was introduced to grade 11 and 12 physical education students in a rural high school. These students were randomly chosen to participate in 28 yoga sessions over a 10-week period. The students in the yoga group indicated they had less tension and anxiety compared to the control group who had "regular" physical education. The researchers found that yoga included in the school curriculum could "improve overall student well-being by both decreasing negative and increasing positive aspects of mental health" (Noggle et al., 2012, p. 7).

Conboy, Noggle, Frey, Kudesia and Khalsa's (2013) follow-up study provided an assessment of yoga applied to a high school setting. Students noted a number of experienced benefits. These included: improved dedication and work ethic, greater respect for their body and improved self-image, positive changes in diet and food choices, better sleep patterns, less emotionally-reactive, increased ability to relax and breathe deeply, relieved stress before tests, and social benefits related to practising yoga in a group setting.

Research implications. Research literature suggests that youth can enjoy yoga's mental health benefits related to anxiety reduction, relaxation, and stress management. Moreover, Conboy et al.'s (2013) identification of additional mental health benefits (e.g., improved work ethic, self-image, food choices, and social connections) provides other possibilities for consideration. Given these potential mental health benefits (some of which have been found in school-related yoga "interventions"), continued research into *Yoga 11* ought to explore these as possibilities for students enrolled in the course. While it might reasonably be expected for widely found benefits (related, for example, to anxiety, relaxation, and stress) to also be perceived by *Yoga 11* students, there is little reason to suppose additional—and less often identified—benefits (as identified by Conboy et al.) might not similarly be found. A focused inquiry would enable all of these potential mental health benefits, for those enrolled in *Yoga 11*, to be explored.

Physical Health Benefits of Yoga

There is evidence suggesting yoga aids in the management of chronic conditions such as back pain, insulin resistance, and hypertension (Bernstein, Bar, Ehrman, Golubic, & Roizen, 2014). It has also been shown to aid in weight reduction for obese youth. For example, Benavides and Cabalero's (2009) research showed that, among 20 female obese youth, most participants' weight decreased by two kg after 12 weeks of regular practice. Such results are positive, in that

they support the suggestion that yoga might offer weight management-related physical benefits to youth.

Hainsworth, Salamon, Khan, Mascarenhas, Davis, and Weisman (2013) explored the benefits of yoga for 11 to 18 year old youth suffering from chronic headaches and pain. Participants completed a weekly yoga class over an 8-week period. They reported lower pain intensity, lower pain frequency, and improved daily functioning after the yoga intervention. The study sample included seven youths and, although this sample was small, the results were entirely positive.

Schure, Christopher, and Christopher (2008) completed a four-year qualitative study on the effects of mindfulness, yoga, and qigong. Participants were asked about the perceived short-term effects the course had upon their bodies over the semester. Responses included improved or increased balance, leg strength, overall flexibility, and aerobic capacity.

Research implications. Research literature suggests that youth can enjoy yoga's physical health benefits related to pain reduction, weight management, and functional fitness (i.e., balance, strength, flexibility, aerobic capacity). Schure et al.'s (2008) suggestion that yoga can help adults achieve improvements in these functional fitness component areas certainly speaks to the multi-domain claims of the discipline. Still, though these are indeed positive claims, research that focuses upon functional fitness benefits is needed with youths as well. Given the potential physical health benefits (related to functional fitness as well as pain reduction and weight management), continued research into *Yoga 11* ought to explore these as possibilities for students enrolled in the course. While this study did not aim to document changes in students' functional fitness (or pain or weight), it certainly allowed for their perceived changes to be uncovered.

Benefits of Providing Alternative Physical Education Programs in High School

Physical activity levels in Canada are thought to be insufficient to promote noticeable health benefits (Ntoumanis, 2005). Though Canadian Physical Activity Guidelines recommend one hour of physical activity daily, less than thirty percent of students meet this advice (and, additionally, girls are less active than are boys; Kimm et al., 2000). These statistics are somewhat alarming, especially considering that such youth become vulnerable to establishing inactive lifestyles that are connected to health-related challenges later in their lives (Lodewyk & Pybus, 2013). One way of addressing this inactivity is by providing attractive physical activity opportunities within school communities.

There are necessary factors for a physical education program to be an attractive option for some high school students. For instance, in one North American study, female students indicated they want to stay in shape but they are sometimes embarrassed or self-conscious about their appearance while exercising (Grieser, 2006). Such embarrassment and self-consciousness might be addressed by avoiding co-educational classes and/or activities in which students are "put on display."

Understanding that, generally, girls and boys choose to participate in different forms of physical activities (How, Whipp, Dimmock, & Jackson, 2013), offering a variety of physical education classes might also be considered when addressing the physical activity declines among youth. For example, research has found that many girls tend to be more inclined to engage in individual activities (Lodewyk & Pybus, 2013) while most males chose to participate in team sports and games (How et al., 2013). Moreover, Lodewyk and Pybus (2013) found girls in a Canadian school they studied did not like to participate in undesired sports or games and they did not like the competitive setting of traditional physical education.

Other research findings (Ntoumanis, 2005) call for the promotion of self-determined motivation in order to enhance student participation in physical education. Such research suggests that schools' physical education programs should play more of a central role in increasing the physical activity of young people. The reality is that virtually all members of an age group, with their wide variety of physical ability levels, arrive in physical education class. The challenge becomes how to sufficiently motivate all students to participate in physical education. Implementing more student choice in activity can increase this motivation and participation in physical education (Ntoumanis, 2005).

Gibbons (2009) examined the features of high school physical education programs that successfully retained female enrolment. The successful high school courses placed an "emphasis on lifetime physical activities and value-added options" (Gibbons, 2009, p. 228). She noted that value-added options (e.g., certifications and training related to first aid/CPR and fitness leadership) also appealed to female students. Successful programs afforded opportunities for students to be involved in the creation of course development and served to add meaning and ownership for participants.

Research implications. Research literature suggests many students, particularly female students, prefer the environment and activities associated with alternative types of physical education programming. For example, minimizing opportunities for on-display movements has been found to be an especially preferable alternative—something that is clearly much more easily done in individual, rather than team, activities. Relatedly, some students have clearly favoured alternative physical education programs that are characterized by individual, non-competitive activities and, as Ntoumanis (2005) observed, enable students to exercise choice. Students enrolled in *Yoga 11* might similarly identify some of these same attributes as being especially suitable. Other than similar locally developed courses, we believe that this is the only province-wide course of its kind within Canada. Certainly, if *Yoga 11* is to be included as an alterative physical education program that has the sorts of benefits cited in the literature, research supporting this idea is in need.

Researching *Yoga 11*

The cited mental and physical health benefits of yoga practice, for adults and for youth, may or may not be similarly experienced by students enrolled in *Yoga 11*. Quite obviously, results for yoga-practicing *adults* may not also be found by yoga-practicing *youth*. Moreover, results for youth who participate in intervention yoga programs or after-school yoga programs may not also be found in a year-long course-for-credit. The research literature certainly points to mental and physical health benefits that may be experienced for *Yoga 11* participants. Similarly, despite the literature suggesting many (female) youth prefer alternative physical education programs, no research has been found that speaks, specifically, to *Yoga 11* (or a course like it) as an alternative. If this course is to continue to be offered within Nova Scotia (and/or contemplated by others in other provinces), then research into these areas would be helpful.

Given the benefits of yoga, as well as the especially unique nature of *Yoga 11*, the paucity of research related to yoga instruction within schools, and our own interest in teaching (and researching) *Yoga 11*, we have undertaken a qualitative case study with four students who have recently completed the course. We have undertaken this research with a wholehearted belief that despite our own entirely positive beliefs about, experiences with, and observations of *Yoga 11*, focused and structured inquiry can still tell us what we, and others, do not yet know. That is, we

began this research with the goal of attending to students' stories so that we, and others, might learn about the *Yoga 11* experience from the students themselves.

The primary research question guiding this inquiry was, "How is *Yoga 11* experienced by students?" Secondary sub-research questions included:

- What perceived mental health benefits do *Yoga 11* students experience?
- What perceived physical health benefits do *Yoga 11* students experience?

Research Design and Methods

A qualitative case study approach was adopted so as to gather data and develop understanding. Following, then, is a brief overview of the case study methodology as well as a summary of the specific research methods, including ethical considerations, participant selection, interview design, and data analysis procedures.

Qualitative Case Study

Creswell (2012) indicated several characteristics unique to qualitative research. For example, he suggested the purpose of qualitative research is to explore an issue and develop a detailed understanding of a phenomenon. He also emphasized the importance of asking "research questions in a broad way" (p. 16) so that participants' lived experiences may be fully articulated and appreciated. Accordingly, we set out to gather descriptively rich information about students' perceived experiences related to yoga participation through the use of broad open-ended questions. We had hoped that—by collecting and analyzing information surrounding the *Yoga 11* experience—we would be enabled to draw meaningful conclusions that would resonate with the students, others, and ourselves.

The context and nature of our research question positioned this inquiry as a single case study. Stake (1995) believed that a "case study is not a methodological choice but a choice of what is to be studied" (p. 443). Creswell (2003) also suggested, in case studies, researchers explore a bounded "program, an event, an activity, a process, or one or more individuals" (p. 15). The bounded system in the current study was the *Yoga 11* course at one school as well as the students within it.

Though case study research, in many ways, continues to seek legitimacy as a social science research strategy, it has become increasing common within educational contexts. We recognize that outsider resistance to case study is partly influenced by the observation that this methodology lacks well-designed and well-structured protocols—and that research methodologists themselves often lack a consensus about the deign and implementation of case study (Yin, 2002; Yazan, 2015). Still, we aimed to meet one of Creswell's (2003), Stake's (1995), and Yin's (2002) important characteristics of case study research: we collected data from multiple sources. Data were collected from four different students.

Research Methods

Ethical considerations. Stake (1988) suggests, "qualitative researchers are guests in the private spaces of the world. Their manners should be good and their code of ethics strict" (p. 244). In an effort to comply with standards for human research, a number of ethical issues were intentionally addressed. Such issues included the disclosure of the purpose and nature of the research to the research participants and, because of their age, to their parents/guardians as well.

In order to disclose this information to students and their parents/guardians, we met with

former *Yoga 11* students to explain the research project and to invite them to participate in individual interviews. Students who were interested in participating in the study took home consent/assent forms and returned the forms signed by themselves as their parent or legal guardian. Included within this information and consent form was information related to participants' right to opt out of the research study at any time without penalty as well as their right to maintained anonymity and confidentiality in the analysis and reporting of research data.

In addition to the aforementioned ethical considerations, this study met all other requirements of the university's Research Ethics Board (REB) and the local school district's research ethics protocols.

Participants

Participants were chosen through a mixed purposeful sampling strategy (Merriam, 2009; Patton, 2001). More specifically all invited participants were former *Yoga 11* students who were less than one year removed (criterion sampling; Patton, 2001). In response to a morning video announcement at the school site, 26 former students attended an information session about the REB-approved research. Twelve students returned signed consent/assent forms. From these 12 students, three female students and one male student were randomly selected (purposeful random sampling; Patton, 2001) to participate in the research interview as research participants. The 3:1 ratio for female-to-male students was purposeful in that it approximated the higher ratio of females to makes in the course (and in the consenting students). All four participants were former *Yoga 11* students who successfully completed the course in June 2014. Cecelia, Christina, and Sally were in grade 11 while Tommy was in grade 12.[ii]

Interviews

Data were collected through four separate semi-structured in-depth interviews (each participant participated in one interview each). These semi-structured in-depth interviews were approximately 30 to 40-minutes in length. They occurred at the school during the lunch hour or after school, as this was most convenient for the students. Interview questions followed a planned interview guide (with 13 questions) though participants were also asked a number of further probing questions to clarify points that were made or unclear. While some questions certainly pre-supposed students would have viewed their *Yoga 11* experience favourably—and would have consequently elicited positive mental and/or physical benefits gained from their yoga experience—some were also entirely "open ended." For example, asking students to, "tell a story about how yoga made you feel physically or mentally" certainly would allow them to share more critical or resistive experiences. However, all responses were related to the experienced positive features of their *Yoga 11* experience.

Sample interview questions included:

- Has the daily physical practice affected your body or health? If so, provide details.
- What other kinds of things have changed in your life because of your experience of Yoga?
- How do you think Yoga will continue to impact your health?
- Can you tell me a story about when yoga helped you outside of your *Yoga 11* class?

Interviews were audio-recorded and then subsequently transcribed verbatim.

Data Analysis

Merriam (2009) explained that the process of making sense out of data is the most difficult part of the qualitative process. To aid in this process, a matrix was created with the following headings: (a) perceived mental health benefits, (b) perceived physical health benefits, (c) perception of *Yoga 11* as an alternative (to *Physical Education 10*) program, and (d) other notable experiences. Relevant ideas from the participants' responses were grouped into these open codes (Merriam, 2009). Given our initial review of literature, and our expectations related to data collection, these *a priori* categories were deemed to be likely relevant.

Merriam (2009) also suggested that a recurring pattern would emerge that substantiates the story of the research question. This pattern consisted of common experiences in *Yoga 11* across the categories. Interestingly, but not surprisingly, the participants' experiences in *Yoga 11* supported some of the related research literature about the mental health benefits of yoga, the physical health benefits of yoga, and the benefits of providing alternative physical education programs in high schools. Searching for commonalities, original insights, and patterns, participants' responses were read multiple times while response elements were coded into "emerging" themes and placed within the appropriate matrix category.

Limitations

Notwithstanding our shared concluding remarks and future considerations, we also recognize some limitations that must necessarily be considered. We suggest the following limitations ought to be acknowledged: focused inquiry upon positive experiences, limited data sources, perceptions of healthy outcomes, limitations in research literature, and researcher bias.

Focused inquiry upon positive features. Though research questions were meant to be—largely—neutral, all responses from participants were entirely positive. Without an explicit line of questioning meant to elicit negative or resistive comments from participants, it is difficult to make conclusions and/or generalisations about this. Consequently, future similar research might ask participants questions such as, "In what ways was your mental health negatively impacted by your *Yoga 11* experience?"

Limited data sources. This study relied primarily upon the data gathered from four interviews. Researchers' experiences (as a *Yoga 11* teacher), observations, and reflections were relied upon when considering the primary data. Still, this study (and future ones like it) would benefit from additional data sources—so that a more richly detailed account may be achieved. This may be accomplished by including more participants, prioritizing observation as a research method, and/or having participants record daily/weekly journals/reflections.

Perceptions of healthy outcomes. It has not been lost on us that the participants' shared mental and physical health outcomes are perception. Moreover, some of these perceived outcomes can very easily be objectively measured (e.g., flexibility, strength). We recognize that their perceptions so not necessarily equate with measurable differences in these areas. To this, we offer two points. First, future research on yoga in school might actually measure body measurements in these sorts of areas. Second, let us not discount the important of students-perceptions—irrespective of any actual objectively measured changes.

Limitations in research literature. It is notable that most of the research literature included within this paper is not related to yoga instruction *within schools*. While we and others might glean important information from research studies focused upon yoga and youth (or yoga and adults), it is oftentimes a "stretch" to draw transferable conclusions to school contexts. We identify this paucity of related research as a limitation because, without it, framing and discussing our findings is a more difficult—and perhaps less complete—task.

Researcher bias. While we would hope that any reader with a familiarity with qualitative research might recognize that all research is impacted, in some way, by researcher bias, we nonetheless believe it is important to state our biases—that may or may not present a limitation to some. One of us is a *Yoga 11* teacher who has experience and believes in all of the stated positive mental and physical health benefits of yoga—and who also believes that *Yoga 11* should "count" as an alternative to physical education. The other does not teach (nor practice) yoga, believes that there are mental and physical health benefits to yoga participation (as there are to most physical activities), and does not believe that *Yoga 11* should count as an alternative to physical education (but believes it should be offered as an additional elective). Though we share these biases as a potential limitation, we are also hopeful that our differing beliefs suggest that this paper presents a "balanced" perspective.

Results and Discussion

Seven themes—present in all participants' responses and shared stories—related to perceived health benefits (four related to mental health, three related to physical health) were identified (see Figure 1).[iii] These seven themes are detailed below.

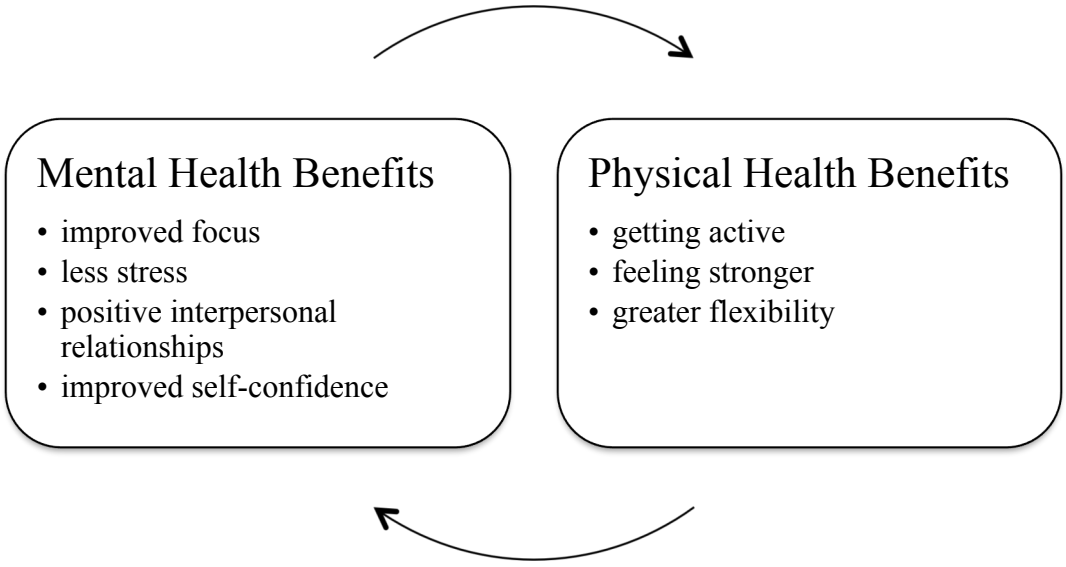

Figure 1. Perceived mental and physical health benefits related to *Yoga 11* participation.

Students' Experiences of the Mental Health Benefits of *Yoga 11*

Four themes related to mental health benefits were identified. These included improved focus, less stress, positive interpersonal relationships, and improved self-confidence.

Improved focus. All participants clearly indicated the yoga practice helped them to focus their attention and minimize distractions. When prompted to clarify what was meant by "improved focus," Cecelia[iv] offered:

> I noticed that I was a lot more focused. I'm, like, kind of a daydreamer so I was focusing on, like, my breath and, like, my next move and everything was—it just made me really focus on what I was doing in the present. (Cecelia, transcript excerpt, October 2014)

Bringing the mind's attention to the present moment is part of the mental discipline of yoga. Indeed, if the practitioner is not paying attention to the postures, an injury is likely to occur. The strategy for keeping the mind present is to be carefully attentive when breathing. This strategy, when applied outside of the yoga practice, has the same benefit. At all times, keeping the mind free of distraction through breath regulation brings the body into a state of ease. Students in *Yoga 11* are taught to do this deep breathing whenever they are faced with a challenging situation.

It is also encouraging that all participants found yoga practice enabled them to experience improved focus. For instance, Christina also noted, "Yoga taught me to calm myself down and everything like that and just focus on one thing" (Christina, transcript excerpt, October 2014) while Sally added:

> Well, then I could take a deep breath and I would try to focus my attention on other things or if I'm worried about the future, like you say, bring yourself to the moment, or to the present, and just try and, like, focus on all the good things that you have to think about and not all the bad things. (Sally, transcript excerpt, October 2014)

An especially notable experience that Christina shared was related to how breathing benefitted her while she was writing a final exam:

> 'Cause I know I did that at exams last year. I was freaking out 'cause I know that one of them I didn't study so much for. I'm freaking out and, you know, I just knew my brain started to shut down and I was just, like, I'm not going to get this done and then I was, like, alright, breath work. And I was breathing. And, you know, everything started to clear up and I was, like, able to pull the answers out of my brain now that I couldn't have before because I was freaking out so bad. (Christina, transcript excerpt, October 2014)

Though the all participants suggested that an improved focus was an outcome of their *Yoga 11* participation, this was not similarly suggested by the cited literature. It is, therefore, promising to find this unique outcome. Without over-speculating, we offer one possible explanation for this unique perceived mental health outcome. While there are undoubtedly commonalities across different yoga instructors, classes, and sub-disciplines, there also, logically, are also differences. It is possible that the students' instruction focused on this outcome in a way not similarly focused upon in other yoga classes.

Stress management. All participants reported that they experienced less stress in their lives as a result of their yoga practice. Given the large number of stressors we know youths live with today, including homework, peer pressure, being teased, receiving poor grades, bullying, standardized testing, and perceived parental pressure (White, 2012), this was especially promising. It certainly appeared that the participants were able to use yoga as an effective stress coping mechanism. For example, Tommy shared, "Well, you always feel great after a yoga practice. I always said, like, I'd be physically and mentally relaxed at home—everything is connected in a way again" (Tommy, transcript excerpt, October 2014).

Similarly, Sally reported yoga made her feel stress-free and less irritable. Prompted to elaborate upon "dealing with feeling stressed-out," Sally explained, "Sometimes if I'm really stressed I get a knot in my stomach but just, in general, I would, like, shorter breath. I'd have my mind on something else, like, it's always off going somewhere else" (Sally, transcript excerpt, October 2014). Clearly, relying upon the breath work taught in yoga allowed her to manage stress outside of school contexts.

Cecelia shared a story about how her experience of a *Yoga 11* yoga retreat made her feel. Her description was as follows:

> I felt a lot more relaxed…. Obviously, it relieves a lot of stress that comes along with school and obviously I would have had to catch up on schoolwork afterwards but it felt really good to be away from work and be away from schoolwork and teachers and deadlines. So, it felt really good and relaxing and stress-free. (Cecelia, transcript excerpt, October 2014)

Christina also expressed how she was able to experience less stress in a specific example that she shared:

> I think it [yoga] has impacted my life a lot. I think I'm able to deal with heated situations much more calmly. I think if I were to walk into a room where two people are just screaming their heads off at each other I think I could mediate that and be, like, okay, calm down, breathe a little bit…. I noticed I had an argument with my mom the other day and I was thinking, you know just breathe a little bit, so I started breathing and that calmed my mind down and I—it actually turned our conversation from a heated argument to an actual conversation with somebody—and I think that was great because before I couldn't do that. (Christina, transcript excerpt, October 2014)

From the participants' stories of experiences, it appears they were using their yoga practice to mediate stressful situations in their lives. The students shared stories about how they were able to experience peaceful moments in relation to their yoga practices:

> I love nature, like just looking out the window right now and seeing all the different colours. Yoga really made me realize to just sit down, breathe, and just look, enjoy, see, instead of just sitting. I could just go sit outside and think about the million things that I'm stressing about or I can just enjoy the moment and look at the beauty that's right in front of me. It took me a long time to realize I have to enjoy simple moments like that but yoga just opened your eyes to it. (Tommy, transcript excerpt, October 2014)

We were deeply moved by the participants' stories of how they were able to use their yoga practice outside of the *Yoga 11* context. For us, this integration of knowledge into the day-to-day functioning of the adolescent experience was where the true value of yoga emerged. Participants were able to connect their mind to their body through the breath, facilitating their ability to self-regulate in stressful situations.

That these participants found yoga's mental health benefits included stress management/reduction is promising. This finding clearly aligns with all of the previous cited literature (Chugh-Gupta et al., 2013; Conboy et al., 2013; Noggle et al., 2012; Sharma & Haider, 2013). This is, in many ways, especially important within educational contexts, where there has been an obvious increasing focus upon students' emotional wellness. Given that this has been found to a commonly experienced (and touted) benefit of yoga participation, it is reaffirming to see it similarly present here.

Positive interpersonal relationships. Others have found yoga intervention strategies can improve interpersonal relationships (e.g., Berger, Silver, & Stein, 2009). Our participants also revealed they experienced positive peer interactions that they attributed in some way to their yoga practice. For example, Cecelia recently transferred to the school and, although she is a kind and friendly student, her peer group was small and she would often arrive to class alone. She was describing her experience at the yoga retreat when she offered a brief insight: "I, um, made a lot of friends at Tim's Camp which was good" (Cecelia, transcript excerpt, October 2014). She valued the opportunity to make new friends who were sharing the experience of the yoga retreat with her (the yoga retreat was an overnight field trip for those within *Yoga 11*). Sally also

attached some importance to the experience of practicing yoga with her friends: "But I think really being around my peers and everything, having that chance, that is really something that is, like, I won't forget it" (Sally, transcript excerpt, October 2014).

Christina was able to express how her yoga practice made her reflect upon how she was treating other people. She held a leadership role in her local cadet corps and she recounted this story about how her yoga learning would influence her interactions with a new recruit:

> I'm gonna treat him with kindness and compassion and I'm actually going to show him, and slow it down to the point where he knows what I'm talking about, and I'm doing it respectively, and I'm doing it politely, and I'm not being mean and aggressive towards him. (Christina, transcript excerpt, October 2014)

Here, Christina was able to give a concrete example of how she understood the yoga principles of kindness, compassion, and discipline. She used her awareness of this philosophy in a difficult interaction with a new young cadet recruit. She used that experience as an example of how to build a positive relationship: "Even though this little kid wasn't treating me with respect, I was still able to treat him with respect and I learned that basically all through yoga and it's, it was great to get that feeling" (Christina, transcript excerpt, October 2014).

Participants clearly valued the positive interpersonal connections they made in yoga class and, especially in Christina's case, were able to apply these standards of positive behaviours to other relationships outside of yoga class. Only Conboy et al. (2013) found somewhat similar results, suggesting that students could experience benefits related to yoga's social setting. Still, and this should be painfully obvious, traditional physical education also occurs in a social setting. What is notable here, however, is that these participants also explained how *Yoga 11* taught them how to (better) socialize with others outside of the class. That is, in addition to enjoying the social benefits of this unique largely female group (similar to that found by Gibbons, 2009), *Yoga 11* graduates clearly suggested that the course taught them how to better socialize in their normal everyday lives.

Improved self-confidence. Although interview questions did not specifically address the often-difficult issues of adolescent self-esteem or self-confidence, participants did share their own stories of personal growth. Tommy was the only male student in his yoga class. When asked how he might encourage more male students to take yoga, he replied:

> I think people just need to, more so, just give it a chance because we just, we listen to people, and you listen to high school people talk, and people do this and that, and you almost just get shut down in a way before you even really give it an opportunity just because people, that's what people think, it's a stereotype. You think, oh that's not something that I can do, that's like a girls' class and you just really need to break out of your shell and give it a shot because you can't really do something before or unless you try. (Tommy, transcript excerpt, October 2014)

From Tommy's experience, it appeared that he may have been swayed by his peers' opinions about yoga in the past but he would now encourage other male students to try yoga. We see Tommy's analogy of breaking out of a shell as a symbol of growth and courage.

Christina also shared an experience that gave insight into her developing self-confidence:

> It's like I was the person before I started yoga and the person after I did yoga. I think that the person that I was, um like, when I took yoga, it was almost, like, my brain kind of opened, and my heart kind of opened into things that you know I normally wouldn't have tried before because (a) I was either too scared or thought I'd get made fun of but it's like I understand everything just completely different. I'm able to do a lot more than I thought I could never do. (Christina, transcript excerpt, October 2014)

Just as Conboy et al. (2013) found that yoga participants experienced a greater respect for their bodies and an improved self-image, this research suggests students gain confidence as a result of their participation in *Yoga 11*. Christina's declaration that, as a result of yoga practice, she was, "able to do a lot more than I thought I could never do" certainly speaks to the power of the practice to impact individuals in this regard. This would, arguably, be more likely to occur in the yoga environment where students are necessarily almost-never on display.

Students' Experiences of the Physical Health Benefits of *Yoga 11*

Three themes related to physical health benefits were identified. These included getting active, feeling stronger, and greater flexibility. We also note that additional themes identified by some of the students included improved lifestyles choices (related, for example, to healthy eating), asthma control, and body weight management.

Getting active. While some participants shared, unprompted, that they were aware of physical activity guidelines for youth in Canada, all also suggested that Yoga 11 enabled them to increase their daily or weekly physical activity. For example, Tommy, familiar with the 60 minutes of MVPA guidelines, specifically expressed that he wanted to be physically active every day:

> I wanted to go in there and work on becoming more fit and exercising and whether you are a boy or a girl, everybody needs to work on exercise. Isn't it like 30 to 60 minutes a day that you need to do? And there we did, we did an hour every day when we came to school. (Tommy, transcript excerpt, October 2014)

Cecelia also referenced her knowledge of the recommended guidelines for daily physical activity in her interview as well as yoga's role in achieving these active minutes:

> Well, it's like important to get your like, 60 minutes a day, or 30 to 60 or whatever and some days I wasn't getting that so it definitely made me feel a lot better going to yoga. Then I didn't have to worry about doing it after school. (Cecelia, transcript excerpt, October 2014)

A common criticism of *Yoga 11* might be the perceived lack of intensity compared to other more traditional physical activities taught within a physical education class (e.g., consider the movement required in soccer, basketball, dance, or gymnastics). However, these participants were aware of national daily physical activity guidelines and they felt that *Yoga 11* allowed them to achieve them. To us, it follows that these students (particularly the female students) would be more inclined to participate more fully due, largely, to the fact that the activity itself was of greater interest. This would certainly agree with the conclusions drawn by both How et al. (2013) and Lodewyk and Pybus (2013). As Gibbons (2009) also noted, affording these students the ability to exercise genuine choice (by allowing them to choose to take this course "instead" of physical education) would have also likely impacted their level of engagement and movement activity within the class.

Feeling stronger. All participants expressed an appreciation for the physical demand of the asana practice. Although a strength test was not a part of this research study, nor a part of a summative assessment in *Yoga 11*, it was interesting that the participants expressed that they felt stronger as a result of their physical practice. The assessment strategies for *Yoga 11* course do include a self-evaluation at the beginning, the middle, and at the end of the course and students are routinely asked to reflect upon how long they can hold certain postures. This knowledge of their own physical progression was certainly expressed in their stories of experience in yoga class. For example, Cecelia noted, "Yoga takes a lot of strength and at the beginning I was struggling a lot with yoga because it was, well, I wasn't struggling a lot but it was definitely a

challenge. It was hard, but it definitely builds muscle and strength" (Cecelia, transcript excerpt, October 2014).

The students were also asked to establish physical asana goals as part of their assessment in *Yoga 11*. Tommy referenced his personal physical asana goals. He physically experienced a sense of greater wellbeing due to his attention to self-study in his asana practice: "Just a few months of doing yoga really helped me reach those goals. And other things, I felt, like, strong almost. I just felt more fit. It really makes you feel good" (Tommy, transcript excerpt, October 2014).

Sally was aware of the connection between the specific asanas and the intended physical benefit of the pose. She recalled how her experiences of practising the postures would also make certain parts of her body feel stronger:

> We would usually do, like, sun salutations and then we would try different ones, like, sometimes we would do mostly sitting postures or mostly standing postures or triangle pose. Just, like, some days we would be working on our leg strength or our core strength and stuff like that. (Sally, transcript excerpt, October 2014)

Christina made an interesting comparison between yoga and "gym" class. She related her own improvements in personal strength to her experiences in yoga class: "It was also building muscle I think way more than gym would 'cause you're actually holding the poses and you know in gym you're just out there running around" (Christina, transcript excerpt, October 2014). Indeed, yoga has been found to improve muscular strength, muscular endurance, and flexibility (Schure et al., 2008). To us, we were especially pleased to learn that participants felt stronger. Connecting "feeling stronger" to "feeling good" was a most welcome comment—suggesting to use that the participants understood that there was a close connection between their physical health and their mental health.

Greater flexibility. All participants also noted the effects of the daily asana practice upon their flexibility. Again, although a flexibility test was not a part of this research process, nor specifically measured as an outcome in the *Yoga 11* course, all participants was able to identify feeling greater flexibility as a result of the physical practice. Tommy shared his experience of reaching a personal flexibility goal: "I've always wanted to be able to, like, touch the ground or touch my toes and I couldn't do that before I started yoga. And there you go, a few months in, I can literally touch the floor" (Tommy, transcript excerpt, October 2014).

Tommy is also a recreational runner. When asked if he found any connections between his running practice and yoga, he offered:

> Connections, well, I found myself, 'cause you have to do your stretches before and after, and I'd find myself doing yoga 'cause like the stretches for the legs, after I realized what I was doing, I was, like, this is exactly what I needed. It really benefitted my running in a way. I don't know if that's really a connection but, without yoga, I don't know, it really furthered my running. (Tommy, transcript excerpt, October 2014)

Tommy shared that he included yoga poses in his warm-up and cool-down of his running practice. Interestingly, he found yoga's attention to flexibility was beneficial to his running.

Sally was a varsity athlete and played on the high school basketball team. In her interview, she shared a specific example of how she experienced the difference between feeling fit and feeling flexible:

> When yoga started I was already, like, physically active with basketball. But basketball ended in February and yoga was starting up in February so I had them both at the same time for about two weeks and then I just started in yoga and basketball ended. So I was already being physically active so it wasn't a strain to do physical activity, maybe the

> flexibility part, I noticed, um, that with every day, especially after a few weeks, you would notice that maybe you could touch your toes a little bit more, bend a little bit farther. (Sally, transcript excerpt, October 2014)

Christina expressed a somewhat similar experience. However, we sensed regret when she shared that her body was no longer as flexible as it was when she was practicing yoga every day: "Well, it actually made me way more flexible than I was. Sitting here now, I can barely bend over and touch my toes, [unlike] like when I was in class, working every day at it" (Christina, transcript excerpt, October 2014).

As was the case with improved strength, virtually all research would suggest that yoga is capable of improving one's flexibility (Schure et al., 2008). We were, consequently, unsurprised to find this result. Still, the participants offered two additional and notable details related to flexibility: 1) that the improved flexibility had the effect of also improving upon one's performance in other athletic pursuits, and 2) that the flexibility was very quickly lost after *Yoga 11* ended. While we are encouraged by the first observation, the second suggests that this year-long yoga-intensive course (*Yoga 11*) may not be that successful in having longer-term consequences upon physical activity practices or behaviours.

Concluding Comments and Future Considerations

When we began this research study, we were curious about what the students would report when they described how yoga impacted their wellbeing. We were also contemplating our own experiences of yoga and wondered if the youth experience would be greatly different than our own. What the students shared with us was personal, reaffirming, and courageous. Indeed, we have changed own understanding of the benefits of yoga practice because of their stories. To these students, *Yoga 11* offers perceived positive benefits that might not necessarily also be realized within a more traditional physical education class. That is, and has been cited by others (Gibbons, 2009; Gibbons & Humbert, 2008; Robinson, 2013), only within a demonstrably safe and alternative physical education environment have many female students been found to be engaged and active.

Although *Yoga 11* is included among the physical education-type course possibilities within Nova Scotia, *Yoga 11* is somewhat unique because it purposely, and very explicitly, is meant to bridge a gap between mental and physical (health). Yoga connects the mind and body through breath. All of the students who were interviewed identified feeling more peaceful, focused, and relaxed after their yoga practices. They were able to manage their own stress through the breath control techniques they were taught as part of the curriculum. Interestingly (but not surprisingly), this student feedback supported previous research that suggested yoga could reduce anxiety (Chugh-Gupta et al., 2013) and stress (White, 2012). We discovered that self-regulation through breath work was such a valued part of the students' experiences of *Yoga 11* that we intend on exploring a larger variety of techniques to students in the future.

The students reported varied physical health benefits of *Yoga 11*. We were reminded that just as each individual student was unique, so was their physical experience of the poses in their own physical bodies. Each of us has strengths and limitations. We enjoyed hearing what the students identified as personal physical practice goals and then having them recount stories of how they felt when they were able, or almost-able, to meet those goals. We noted the students felt more self-confident as they were able to feel stronger, more flexible, manage weight, or make better food choices. They were using the physical asana practice as a metaphor for being strong and balanced on and off the yoga mat.

As we expected, the research expanded our own curiosity and more questions have come to mind. If we were to interview more students, we wonder if we would hear more varied responses or only repetition of these same ones. We wonder about students who did not particularly enjoy *Yoga 11*. How might their perspectives be different? We also wonder if this study has enough potential to encourage other researchers to inquire upon the benefits of yoga for adolescents. We suspect that—though limited to a singular case—these results might resonate with others in similar contexts.

Considering the previously mentioned recent interest from the Province of Nova Scotia regarding mental and physical wellness for students, and the review of the current educational program as outlined in the recent report *Disrupting the Status Quo: Nova Scotians Demand a Better Future for Every Student* (Minister's Panel on Education, 2014), we anticipate that recommendations will be made that will encourage more physical activity in schools. We are hopeful this study, and others like it, might be acknowledged and/or referenced by educational stakeholders to promote the use of yoga in schools, as it clearly explains how students are experiencing mental and physical benefits from the practice.

Although this study focused specifically upon *Yoga 11*, yoga can be easily implemented into all grade levels (and within traditional physical education courses). We would suggest students of all ages would benefit from a regular yoga practice. A future consideration may be to develop a yoga curriculum that would be appropriate for younger students, as well as an advanced continuation of the high school *Yoga 11* program (possibly called *Yoga 12*). School jurisdictions may wish to consider reallocating funding to encourage more professional development to train more yoga teachers or university teacher education programs may wish to offer a yoga methodology course to undergraduate students. Skills related to teaching mindfulness or breath regulation techniques can be learned by teachers and implemented into virtually any classroom setting.

This research has not attempted to answer the question about whether or not *Yoga 11* should be able to take the place of *Physical Education 10* and be accepted as a student's lone physical education credit. Yet, we think we ought to mention it. This research has given us both information from which to draw our individual opinions and conclusions. *Yoga 11* cannot be all things that regular physical education is. Nor does it aim to be. Others might consider this research when they contemplate the place of such programs alongside or instead of traditional physical education. Indeed, within Nova Scotia, these contemplations continue. Despite this being the current model and practice, others (including one of us) suggest that all students in high school should take a much more holistic physical education course—and that *Yoga 11* could be an additional elective. It is in this same spirit that any other physical activity-type course might be available to students after they have first completed a requisite physical education course.

It is our hope that these research results will encourage more educators to consider implementing yoga into their schools and classrooms so more students may benefit from the practice—just as these students have. In closing, we are reminded of an insight shared by an esteemed yoga teacher, T. K. V. Desikachar: "The success of yoga does not lie in the ability to perform postures but in how it positively changes the way we live our life and our relationships." It is our hope that this research can be shared with, and will aid other, educators who are interested in promoting health and wellness for students by using what we now know about yoga and the adolescent experience.

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[i] While we (like others) continue to encourage pre-service and in-service physical education teachers to teach yoga (and/or other Eastern Movement Traditions [EMTs]) within their physical education classes, it is noteworthy that those responsible for accrediting Nova Scotia teachers to teach *Yoga 11* very explicitly denounce such a practice by "unqualified" instructors.

[ii] Pseudonyms are used for all participants.

[iii] Though these are listed in these two separate categories—largely for ease of data analysis and data reporting—we do not view these as unconnected and separate constructs. Rather, recognizing the monist conception of a mind-body, we do view these as being very intimately connected (as represented by the figure's two connecting arrows).