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College students report poor physical and mental wellbeing. Mindful physical activity has shown promising results as adjunctive and alternative methods for contending with such issues. Students ( $n= 7$ ) registered in a semester long yoga class designed to promote mindfulness and well-being completed pre and post surveys of perceived mood (POMS-SF), quality of life (QoL), stress (PSS) and mindfulness (FFMQ and SMS-PA). "Check-in" reports on state mindfulness, mood, quality of life and perceived stress were done weekly. Open-ended questions regarding most and least beneficial aspects of the weekly yoga sessions were part of these "check-ins." Paired t-tests revealed significant improvements in QoL on the spiritual, emotional, cognitive, physical, and integrated subscales. The POMS-SF vigor score improved, as did the FFMQ subscale non-reactivity, feeling less reactive to emotions and difficult situations. Although not significant, positive trends on the FMMQ suggested students felt better able to observe and describe their surroundings, emotions, and thoughts, and improved their non-judgmental self-reflection. No change in "acting with awareness" was uncovered, indicating students' ability to maintain focus stayed consistent. State mindfulness for PA showed no significant changes. Moderate stress levels as reported by PSS, stayed consistent over the intervention as well. Nine distinct themes regarding the benefits of the weekly sessions were revealed: methods/content, stretch/strength, stress release, breathing, self-awareness, self-care, being present/mindful, safety/alignment and peer interaction. Findings, although limited by small sample size, suggest participating in a yoga course may encourage mindfulness, improve mood and perceived quality of life, and may buffer stress during challenging times.

YOGA: MINDFUL PHYSICAL ACTIVITY TO ENHANCE  
COLLEGE STUDENTS' WELL-BEING

by

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Approved by

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## DEDICATION

*This dissertation is dedicated to my parents James and Patricia Almedina. They started me on the path to enjoying learning. My father was the first in his family to seek a degree and my mom stood by him while he did so, endless hours of her peeking at the typewriter assisting him with papers. My mom's one desire in life was for me to get an education. She was always there for me when I got home from school to help with homework. She worked endless hours to assist me financially with my undergraduate and master's degrees. Sadly, my dad passed away, but thankfully my mom is here to witness the realization of a lifetime goal. Thanks mom, for always being there even when life was tough, I love you!*

APPROVAL PAGE

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## CHAPTER I: PROJECT OVERVIEW

As college students report increased levels of distress and poor mental health, institutions of higher education need programs that address these issues (ACHA, 2017; Auerbach et al., 2018). College students contending with mental health issues are at a higher risk of dropping out of college, taking an incomplete grade or failing a course (Morgan, 2017). Individuals with a history of anxiety and/or depression are more likely to have recurring episodes while under stress (O'Hara et al., 2014). Physical Activity (PA) and exercise have shown promising results as adjunctive and alternative methods for contending with such issues. Several longitudinal studies and meta-analyses have concluded that physically active individuals are better able to manage their mental and physical wellbeing (Conney et al., 2013; Stephens, 1988; Strine et al., 2006; Wunsch et al., 2019). Research suggests that mindful PA courses may have added benefits for college students when compared to general physical education (Schneider et al., 2019).

Yoga is a mind-body practice that has been shown to improve anxiety and depressive symptomatology as well as mindfulness, non-judgmental attitude and self-compassion (Cramer et al., 2013; Cramer et al., 2018; Riley & Park, 2015; Uebelacker et al., 2017). As institutions of higher education seek ways to assist students with mental health issues, mindfulness practices, and specifically yoga, have the potential of decreasing stress, and may thus improve quality of life and assist with student success.

### **Background Rationale**

College students are facing quality of life challenges; 80% of them feel overwhelmed by their responsibilities as a student, 50% rated their mental health as below average or poor, and 50% struggled greatly with anxiety that resulted in school struggles; while 45% of college students report feeling stressed (APA, 2019, NAH, 2012). Exercise and physical activity (PA) assist in reducing stress levels and overall feelings of well-being and can buffer the negative effects of stress (Berent et al., 2014; Wunsch et al., 2019). Despite this, ongoing stressors are more often associated with poor coping mechanisms and decreased perceived ability to partake in PA wellbeing (Dalton & Hammen, 2018; Lederer et al., 2013). Additionally, challenges associated with various therapeutic options for treating mental illness include prohibitive costs,

unwanted drug-induced side effects, and/or lack of therapeutic adherence (ADAA, 2018; Chen, 2012; NAMI, 2019, Schwartz, 2018).

### **Mindful Physical Activity**

Mindfulness practices such as yoga can improve mental health and quality of life and address therapeutic challenges (Josefsson et al., 2014; Schneider et al., 2019). Mindful PA may encourage student participation in PA and improve quality of life by cultivating reliance by buffering stress (Wunsch et al., 2019). Such programming on college campuses can address stress and mental health issues currently overwhelming college students encouraging physical/mental wellbeing as well as potential academic success. This investigation could have a significant influence on the formalization of higher educational practices that improve college students' quality of life.

Despite the clear relationship between mindful PA and wellbeing, it has only been in the past two decades that mindful PA has been accepted as a method of managing stress and enhancing well-being. As college students report increased mental health issues that affect their ability to manage their course loads, colleges are seeking out new ways to assist (NAMI, 2012). Several key organizations concerned with mental health recommend mindfulness practices such as yoga and meditation, including Anxiety and Depression Association of America (2018); National Alliance on Mental Illness (2019); and the World Health Organization (2019). Research supports the mental health benefits of exercise (Annesis et al., 2017; Strine et al., 2008; Stephens, 1988, Wunsch et al., 2019). Evidence supports yoga's ability to reduce stress, decrease depression and anxiety symptomology (Cramer et al., 2018, Cramer et al., 2013). Additionally, yoga has been found to improve mood and mindfulness (Butzer et al., 2016; Butzer et al., 2016a; Corey et al., 2014; Flever et al., 2015; Kim et al., 2012; Kropp & Sedlmeier, 2019).

Numerous studies have investigated yoga as a mindfulness intervention and have had positive outcomes with regards to improved mood and mindfulness. Mindfulness practices are best defined as "paying attention on purpose to unfolding moment-by-moment experience with an open, non-judging and accepting attitude" and non-reactivity (Schneider et al., 2019, p. 2). Yoga practice includes physical postures, breathing techniques and ethical principles. These studies have investigated the integrated approach of yoga verses general physical education, seated meditation, and body scan techniques and found differences in participants' outcomes.

Yoga increased self-compassion, emotional regulation skills, and non-judgmental self-reflection (Felver et al., 2014; Sauer-Zavala et al., 2012)

Schneider et al. (2019) conducted a systematic review of mindfulness practices of 40 cross-sectional studies, 14 of which were random control trials (RCT) and one was longitudinal. Studies that were included had a quantitative measure of mindfulness or were intervention studies that contained mindful based interventions (MBI) with or without PA. Studies with MBI-PA were required to have a PA control group in order to isolate the effects of the MBI. Based on their findings, they suggest that adding mindfulness components to standard PA interventions may improve psychological factors related to PA such as negative and uncomfortable thoughts and sensations that revolve around PA. They evaluated studies where PA was combined with dispositional mindfulness, mindfulness skills, and mindfulness meditation. Five of these studies demonstrated that mindful PA mitigated stress, increased psychological flexibility, and decreased negative affect. In seven of these studies dispositional mindfulness was correlated positively with PA, decreased stress and negative affect, and improved life satisfaction. In particular, the Ruffault et al., (2016) cross-sectional study found dispositional mindfulness correlated negatively with mental illness, specifically anxiety and depression, in 100 non-clinical participants. Dispositional mindfulness in college women was positively correlated with health behaviors such as leisure time exercise, and positive attitudes about sleep and diet in a study by Murphy et al., (2012).

Schneider et al. (2019) include one study which they considered to be of “strong quality,” based on the Effective Public Health Practice Project tool conducted by Gotink et al., (2017). Gotink and colleagues (2017) studied an online mindfulness training program designed to improve exercise for cardiac patients. This RCT was a 12-week intervention incorporating different meditations, self-reflection and yoga. The control group received usual cardiac outpatient care. The study included a 12-month follow-up. Although their findings were not statistically significant, they did see improved exercise capacity, mental functioning and improved mood. Overall, they concluded that an online mindfulness program may assist with favorable, albeit small, long-term effects on these measures.

Kim et al. (2013) conducted a study of interest in which they found that college students’ trait anxiety and depression were significantly reduced due to a 4-week mindful intervention called Kouk Sun Do (KSD). Kim et al., (2013) found trait anxiety and depression were

significantly reduced due to a 4-week mindful intervention called Kouk Sun Do (KSD). KSD combines yoga, meditation, Tai-Chi, Zen and martial arts. 10 KSD sessions were implemented, 1 introductory session and 9 training sessions lasting 70 minutes each. This study was a RCT-mixed method design of 30 college students with self-reports of medium to high levels of anxiety symptoms. Eleven of the 12 participants attributed the intervention to improved relaxation and reduction in anxiety, and seven of the 12 found the breathing and stretching techniques to be beneficial to their daily lives. Schneider's et al. (2019) review suggests that several types of mindfully PA interventions are more likely to be successful when psychological factors are integrated into the program.

### **Yoga: A Mindful Practice**

More specific to yoga, Sauer-Zavala Walsh et al.(2012) investigated a mindful yoga intervention with 141 college students assigned to one of the following interventions: sitting meditation, body scan or yoga. The intervention was done over 3-weeks, and sessions were 3 times per week for 1-hour. Sessions included 35 minutes of assigned activity and 25 minutes of discussion. This study suggests that the yoga group, compared to sitting mediation and body scan groups, increased students' self-compassion, emotional regulation skills, and non-judgmental self-reflection. Another study by Felver et al. (2014) compared the effects of participating in a single Kripalu Yoga class versus a single standard physical education (PE) class in high school students. Immediately following the yoga session, significant differences in anger, depression, confusion, tension, and fatigue; as well as lower negative affect, were found, favoring yoga as an mind-body practice. An RCT was performed by Uebelacker et al. (2017) of a 10-week yoga program versus a Health Education class for individuals diagnosed with depression. They found that yoga, compared to Health Education, improved health perceptions, social, work, and role functioning and decreased depression. These yoga participants were also more likely to show a treatment response after the 3-month and 6-month follow up. These studies suggest that yoga may have additional benefits beyond standard physical or health education.

Cox et al. (2020) explored trait and state mindfulness as aspects of facilitating autonomous PA motivation by the instructors. Over a two-year period, they surveyed participants and instructors of 16-week yoga courses . They deduced that yoga instructors who emphasized body awareness and relinquishing self-judgment cultivated an atmosphere of mindful physical activity for their students. Further, they found that the teachers who emphasized these aspects

where more likely to have students' demonstrate significant increases in state of mindfulness and feelings of autonomous regulation of PA.

A few studies have used qualitative methods to investigate participant perceptions of the benefits of yoga with varied styles of yoga. These studies found improvements in self-regulation, mindfulness, self-esteem, confidence, psycho-spirituality, social relatedness, physical conditioning, and academic performance (Dariotis, et al., 2016; Keosaian, et al., 2016; Selman, et al., 2012; Wang & Hagins 2016; West, Liang, & Spinazzola, 2017). Students expressed that yoga breathing assisted them with test-taking, and anxiety, and helped them reframe their life circumstances. These studies add to the body of knowledge of how yoga might regulate behavioral responses to stress, anxiety, and depressive symptomatology.

### **Yoga to Assist College Students**

Full course loads and competing responsibilities are stressful for college students and can affect mood states and quality of life. Ongoing stressors are associated with poor coping mechanisms such as unhealthy eating, insufficient sleep, substance abuse, sedentary behavior, and decreased perceived ability to partake in PA (Dalton & Hammen, 2018; Lederer et al., 2013). These coping mechanisms can make it difficult for students to adjust and function well and many are seeking guidance from higher education institutions to address these issues. It's been found that stressful situations are mitigated when positive affect remains high; this might also decrease negative affect (O'Hara et al., 2014). Additionally, individuals with a history of anxiety and/or depression are at higher risk of recurring episodes while under stress; therefore, preservation of positive affect may have a protective effect for these individuals (O'Hara et al., 2014). Mindful PA's ability to buffer the negative effects of stress during academic stress periods for students leads to the conclusion that yoga can be helpful in contending with life challenges (Wunsch et al., 2019). College students contending with mental health issues might include mindful exercise into their daily routine and in so doing improve their quality of life and success in college.

### **Purpose and Aims**

Research suggests that mindful exercise can improve mood state, promote mental and physical wellbeing, and assist students with their stressful lives. The gap in the research appears to be little attention to the inclusive quality of life aspects which are addressed with the Quality

of Life Inventory for PA. Specifically, this inventory includes a spiritual aspect, as well as social, emotional, cognitive, physical, activities of daily living and integrated subscales. Further, little research has explored mindfulness in college students as a result of a full semester course in yoga. The purpose of this research was to determine the influence of participation in a yoga course on students' mood, stress, mindfulness, and quality of life. This was accomplished through the following specific aims:

**Specific Aim 1:** Determine the influence of a college-level yoga course on students' mood, stress, mindfulness, and quality of life.

**Specific Aim 2:** Explore students' perceptions of the course including its effects and suggestions for improving the course.

## **Methods**

A Mixed Methods-Convergent Design was informed by surveys with established measures as well as open-ended questions that were administered pre- and post-intervention. Surveys administered via Qualtrics (2020) assessed students' perceptions of their mood, stress, mindfulness and quality of life before and after a one-credit-hour yoga course. Weekly student check-ins were also completed via Qualtrics (2020) to assess the most and least beneficial aspects of the weekly sessions, and state mindfulness.

## **Participants**

Community college students were recruited from a one-credit, 48-contact hour, beginning yoga course from a United States southwestern community college (SCC). Institutional Review Board (IRB) approval from both UNCG and SCC was obtained. Opting to take the survey was considered informed consent and participants (n= 7) were able to remove themselves from the study through a third-party while maintaining confidentiality. The number of class participants was 11; 8 volunteered for the study, and 1 didn't complete the post-survey. Live attendance ranged from 4-9 participants (of 11 possible, average of 6.3). Four participants had done yoga a few times, while the other 3 had never done yoga prior to the course. Five were full-time and two were part-time students. Most students described their mental health as average (n=3) with a few citing below average or poor (n=3) and a one above average ( n=1). Students described their physical health, based on Godin (2011) scale, as participating in strenuous PA (n=5), 3-4 days per week, while a few reported moderate to light PA (n=2), 2-5 days per week. The top three

reasons participants stated for signing up for the course included curiosity about the subject matter, having heard about the benefits of yoga, and seeking to deal with stress. Additional reasons included wanting to improve flexibility and needing Physical Education credit.

## **Measures**

The pre-post surveys included established measures of mood state, perceived stress mindfulness and quality of life. Weekly check-in surveys included an established measure of state mindfulness as well as open-ended questions. See Appendix A for survey questions.

### ***Pre-Post Surveys***

**The Profile of Mood States–Short Form (POMS-SF)** assesses transient feelings and mood. It contains 37 items with six subscales including Anger, Confusion, Depression, Fatigue, Tension and Vigor. Also, a Total Mood Disturbance (TMD) score can be calculated as the sum of the 5 negative subscales minus “Vigor” (Lin, Hsiao, & Wang, 2014). Scores for each item are recorded as 1 for 'Not at all' up to 5 for 'extremely'. The POMS-SF has established reliability and validity (Curran et al., 1995, Shacham,1983)

**The Five Facets Mindfulness of Questionnaire (FFMQ)** was designed for the non-clinical population, and experienced meditators (Christopher et al., 2012). The 39-item FFMQ has five subscales: Observe (noticing internal and external experiences), Describe (being able to express thoughts about internal experiences), Act with Awareness (being able to act in the present moment with total awareness,) Non-judge (accepting one’s thoughts in a non-evaluative manner), and Non-react, (allowing thoughts to pass through one’s mind without having an emotional reaction to them) (Baer, 2006). Items are rated on a 5-point Likert-type scale, ranging from 1 (never or very rarely true) to 5 (very often or always true). Christopher (2012) found internal consistency as excellent to good for all five subscales (.84-.93).

**The Quality of Life Inventory (QoL)** is a 32-item measure with social, spiritual, emotional, cognitive, physical, activities of daily living/functional and integrated quality of life scales (Gill et al., 2011, Gill et al., 2015). Each item is on a scale from 1 (poor) to 5 ((excellent). The QoL survey has established internal consistency and reliability (Gill et al., 2015)

**The Perceived Stress Scale (PSS-10)** is a 10-item survey and asks about one’s feelings and thoughts during the last month (Lee, 2012). It has 5 positive items and 5-negative items rated on a 5-point Likert scale from 0 (never) to 4 very often. The PSS-10 has established internal consistency and reliability (Cohen et al., 1983).

**Open-ended questions.** These questions allowed participants to describe their perceptions of and experiences with yoga.

### ***Weekly Surveys***

Weekly check-in surveys included the state mindfulness measure and open-ended questions asking participants to freely and anonymously write about what they found to be most and least beneficial about the sessions. These were blinded to the instructor during the semester, so as not to influence class progress.

**The State Mindfulness Scale for PA (SMS-PA)** was part of the weekly check-in. It has 6 subscales that assess both physical and mental awareness as well as the qualities of mindfulness, which include attention, awareness and openness (Cox, et al., 2016). Responses are on a 5-point Likert scale from 0 (not at all) to 4 (very much) and totaled for an overall score. Cox and colleagues (2016) report acceptable internal consistency and construct validity in adult populations.

Finally, participants were asked to rate their overall perceptions of mindfulness, mood, quality of life, physical health, mental health and feelings of stress using a Likert scale of 1 (poor) to 5 (excellent).

### **Procedures**

The IRB information form (Appendix B) and the pre intervention survey link were distributed via students' e-mail (see Appendix C for the script) within the first week of the course, and then post surveys were distributed following the final week. Weekly check-in surveys were embedded within the student learning portal on the weekly checklists (see Appendix D for a sample checklist). Data collected from pre-post surveys, weekly check-ins and open-ended questions were analyzed separately.

### **Intervention/Program**

The intervention was a Beginning Yoga level 1, course, worth 1 credit (48 contact hours). As this research was done during the 2020 COVID-19 Pandemic, the course was offered in an online format. Although online classes were slated to be asynchronous, this course offered regular class meetings via Live WebEx sessions twice a week for 75-minutes each. All WebEx meetings were recorded for students unable to attend the live sessions. Attendance was required and was recorded by attending the live sessions or through student portal analytics. The primary investigator was also the instructor for the course. She has 18 years of college instructional

experience and is a 500-hour Experienced Registered Yoga Alliance certified teacher. This course was taught based on Kripalu Yoga methodology which emphasizes the integration of philosophical principles, breathing techniques, body scanning, and physical postures. See Appendix E for course syllabus and Appendix F for a detailed lesson plan.

### **Data Analyses**

Descriptive statistics were calculated for all measures. Paired t-tests were used to compare pre- and post- survey responses. ATLAS.ti software (2018) and consensus coding were used to uncover themes in the qualitative data. Researcher bias was controlled by having an experienced coder, who also had yoga experience, counter-checking the coding of open-ended questions (Creswell, 2013). Both coders reviewed hard copies of the participants' responses to identify initial codes. This was followed by consensus coding whereby the coders agreed on how best code each response line by line for each of the open ended-responses. ATLAS.ti (2018) was then used to organize these findings and revealed a Holsti Index reliability of: 96.4% (Creswell, 2013). Member checking was attempted three times via two emails and GroupMe App link; however, students did not respond (Birt et al., 2016).

### **Results**

Results of t-test analysis for Quality of Life (QoL) showed significant differences pre to post on all domains except Social and Activities of Daily Living including: Spiritual, Emotional, Cognitive, Physical, and Integrated. See Table 1 for pre and post means and standard deviations and the large effect size,  $d > 0.5$ , for all categories. Additionally, post intervention, students were asked if yoga affected these various aspects of their quality of life in questions requiring a yes/no response. Of the 7 students, most reported that yoga had positively affected their emotional (n=6), social (n=5), spiritual (n=5) and mental health (n=7).

Profile of Mood States-Short Form (POMS-SF) revealed significant differences pre to post in Vigor,  $t(6) = -5.24$ ,  $p = .002$ . No significant differences on Tension, Anger, Fatigue, Confusion, Depression or Total Mood Disturbance were noted. See Table 2 for pre verses post profiles Means and Standard Deviations for POMS-SF.

**Table 1. Quality of Life (QoL) Pre-Post Comparisons**

<u>QoL Category</u>	<u>Pre <math>M \pm SD</math></u>	<u>Post <math>M \pm SD</math></u>	<u><math>t</math></u>	<u><math>p</math></u>	<u><math>d</math></u>
Social	16.00± 4.32	18.14 ± 2.27	-1.32	.235	0.50**
Spiritual	12.57 ± 4.47	15.86± 3.02	-2.81	.031*	0.76**
Emotional	11.71 ±4.23	16.57± 3.99	-3.59	.011*	1.15**
Cognitive	16.43± 3.45	18.14± 3.02	-2.52	.045*	0.50**
Physical	13.57± 3.40	15.57± 3.26	-2.89	.027*	0.57**
ADL/functional	10.14 ±1.86	11.14± 1.67	-2.29	.062	0.54**
Integrated	11.86 ± 3.24	13.86± 2.30	-2.54	.044*	0.62**

df = 6, n= 7, \*p < .05, \*\*d >0.5, large effect

**Table 2. Profile of Mood State-SF (POMS-SF) Pre-Post Comparisons**

<u>POMS Category</u>	<u>Pre <math>M \pm SD</math></u>	<u>Post <math>M \pm SD</math></u>	<u><math>t</math></u>	<u><math>p</math></u>	<u><math>d</math></u>
Anger	11.42 ± 4.72	12.28 ± 4.15	-0.71	.503	0.18
Confusion	9.0 ± 2.58	11.71± 1.98	-2.03	.089	1.05**
Depression	5.29± 3.59	5.57± 3.82	-0.311	.766	0.08
Tension	13.57 ± 5.90	12.43 ± 3.31	-0.42	.540	0.31
Fatigue	10.15±4.26	12.28± 4.15	-1.12	.300	0.51**
Vigor	8.71± 2.29	14.71 ± 2.29	-5.24	.002*	3.52**
TMD	47.71 ± 11.99	46.57 ± 12.69	0.20	.845	0.10

n= 7, \*p < .05, \*\*d >0.5, large effect

Results of t-test analysis of the Five Facets of Mindfulness Questionnaire revealed a significant difference in Non-Reactivity,  $t(6) = -3.11, p = .021$  pre to post course participation. An increased score signifies improvement on all measures except for non-reactivity and non-judgment where a decrease score shows improvement. No significant differences pre to post on Observing, Describing, Acting with Awareness, and Non-Judgement were found. Although no significant differences were found for observing, describing, and non-judgement there appeared to be a slight improvement on these subscales (See  $d$  in Table 3). Acting with awareness showed no change over time. See Table 3 for means, standard deviations, and effect size for FFMQ.

**Table 3. Five Facets of Mindfulness Questionnaire (FFMQ) Pre-Post Comparisons**

<u>FFMQ Category</u>	<u>Pre <math>M \pm SD</math></u>	<u>Post <math>M \pm SD</math></u>	<u><math>t</math></u>	<u><math>p</math></u>	<u><math>d</math></u>
Observing	24.86± 6.23	30.00± 3.47	-1.99	0.09	0.83**
Describing	22.71± 2.43	25.43 ±5.06	-1.59	0.16	1.13**
Acting-with Awareness	23.29± 6.58	23.29± 7.16	0.00	1.00	0.00
Non-Judgment	27.00 ±6.78	25.86 ±6.57	0.43	0.68	0.17
Non-Reactivity	20.14 ±4.10	23.29 ±4.03	-3.11	0.02*	0.77**

df = 6, n= 7, \*  $p < .05$ , \*\* $d > 0.5$ , large effect

For Non-judgement and Non-reactivity – lower scores are better

No significant pre to post differences on perceived stress (PSS) were found. Scores between 14-26 are indicative of moderate stress levels. Pre-  $M = 19.29 \pm 5.05$ , Post- $M = 20.43 \pm 5.88$ ,  $t(6) = -.33$ ,  $p = .503$ ,  $d=0.23$  (small effect), indicating that students mostly described themselves as having moderate stress.

### **Weekly Check-in Surveys**

The small sample size and intermittent participation in weekly surveys made it unrealistic to perform repeated ANOVA analysis on the SMS-PA or ratings. Trends show little change in students' perceptions of overall mindfulness, mood, quality of life, physical or mental health and stress over the semester. Most scores were in mid-range, with mindfulness higher and stress lower, and scores didn't change much over weeks. State mindfulness based on the SMS-PA also showed little change over the semester. Means and standard deviations are found in Appendix G.

The weekly survey open-ended questions addressed what students found to be most and least beneficial in the weekly sessions. Few negative aspects were mentioned. These included limitations due to the course being offered online and technology issues.

Analysis using Atlas.ti (2018) helped to organize 9722 responses into 9 distinct themes regarding the benefits of the weekly sessions: methods/content, safety/alignment, peer interaction, stress release, stretch/strength, breathing, being present/mindful, self-awareness and self-care. Note some responses had multiple coding. See Table 4 for a summary of the findings.

**Table 4. Summary of Themes with Frequencies and Examples**

<b>THEMES</b> <i>n/% of the total            9722 coded            responses</i>	<b>EXAMPLES OF BENEFITS STATED</b>
<b>METHODS/            CONTENT</b> <i>2706/26.6%</i>	<ul style="list-style-type: none"> <li>▪ I enjoyed reading module 4 and the videos attached about the anatomy of the body. I love the crash anatomy course videos.</li> <li>▪ I really enjoy how Professor takes things slow for us and makes sure we're never uncomfortable.</li> <li>▪ I enjoyed when we thought about intentions, we wanted to carry with us throughout our lives.</li> </ul>
<b>STRETCH/            STRENGTH</b> <i>2431/25.0%</i>	<ul style="list-style-type: none"> <li>▪ Stretching, my calves were tight, after the session they felt better.</li> <li>▪ The postures helped re-strengthen my body</li> <li>▪ The stretching has helped me relax away tension and calm myself.</li> </ul>
<b>STRESS RELIEF</b> <i>2100/21.6%</i>	<ul style="list-style-type: none"> <li>▪ It was beneficial as soon as we started the yoga. I automatically began to feel a sense of relief.</li> <li>▪ stay still and relax</li> <li>▪ The sessions aimed towards relaxing which was helpful because I had a stressful week.</li> </ul>
<b>BREATHING</b> <i>1074/11.0%</i>	<ul style="list-style-type: none"> <li>▪ Breathing, this was the most important part for me this week.</li> <li>▪ Breathing because I struggle with regulating my breathing.</li> <li>▪ Open my lungs more and relax more.</li> </ul>
<b>SELF-            AWARENESS</b> <i>1046/10.8%</i>	<ul style="list-style-type: none"> <li>▪ Patience</li> <li>▪ Being able to reflect.</li> </ul>
<b>SELF-CARE</b> <i>696/7.1%</i>	<ul style="list-style-type: none"> <li>▪ Being able to try and connect with myself and put myself first.</li> <li>▪ Focusing on myself and my body.</li> </ul>
<b>BEING            PRESENT/            MINDFUL</b> <i>603/6.1%</i>	<ul style="list-style-type: none"> <li>▪ The ability to be present.</li> <li>▪ It helped me feel centered.</li> </ul>
<b>PEER            INTERACTION</b> <i>522/5.4%</i>	<ul style="list-style-type: none"> <li>▪ Focusing on our habitual patterns and being aware of classmate's patterns as well.</li> <li>▪ Interactive session where we all did one pose with a prop to help each other if that was our pose or a possible counter.</li> </ul>
<b>SAFETY &amp;            ALIGNMENT</b> <i>547/5.6%</i>	<ul style="list-style-type: none"> <li>▪ Focusing on my body and practicing safety.</li> <li>▪ Practicing safe spinal movements was helpful because I wasn't aware that I was doing it wrong.</li> </ul>

**Methods/Content** was the most prominent theme reported in the weekly surveys and was defined as the teacher's approach to the course material and course content. Students reported that they'd benefited from course topics, which included the anatomy of yoga, the chakra system, alternative postures, the use of props and the 8 Limbs of Yoga. One student summarized several students' experiences as:

*The professor reading small articles and sharing personal experiences with us benefited me because I was able to relate, while also getting information from the textbook and actually use this. Additionally, the session format, the benefits of the developmental warm-up done at the beginning of the sessions and the meditation and breath work at the end of the sessions.*

**Stretch/Strength** was the second most prominent theme that was stated as being beneficial. The balance between these components was a major emphasis of the course. Students learned to find balance strength and stretch. One stated, "*The stretching has helped me relax away tension and calm myself.*" Another student stated, "*The postures helped re-strengthen my body.*" Stress relief was the third most prominent theme with statements such as, "...*as soon as we started the yoga, I automatically began to feel a sense of relief,*" as benefits touted by in the weekly surveys.

**Breathing** was a theme mentioned by several students, as was Self-Care. Breathing included statements about the effects of breathing techniques used, versus the instruction of how to do them, which was coded as **Methods/Content**. One student stated, "*Breathing because I struggle with regulating my breathing.*" Self-care emerged with statements such as, "*focusing on myself and my body,*" revealing a sense of being allowed to care for oneself.

**Safety and Alignment** distinguished themselves from **Method/Content** when the student included statements about considering safety and alignment in their practice, verses being instructed about safety. For example, "*Focusing on my body and practicing safety...*" **Being Present/Mindful** was distinguished from **Self-Awareness** in that self-awareness was considered as gaining an understanding of oneself. **Self-Care** could be an awareness of the need to be kind to one's self by not overextended in a posture or the awareness that they needed to take time out for them-selves. Table 4 shows provides examples of students' statements with the themes from the analysis of open-ended responses.

## Discussion

Research suggests that mindful exercise can improve mood state, promote mental and physical wellbeing. The specific aims of this study were to a) determine the influence of a college-level yoga course on students' mood, stress, mindfulness, and quality of life and b) evaluate college students' experience in a yoga class. Overall, the results were informative and promising. The Quality of Life Inventory is comprehensive, including a spiritual aspect, as well as social, emotional, cognitive, physical, activities of daily living and integrated subscales. This study further explored college students' mindfulness, mood, and stress, which have previously been found to improve with mindful PA (Dalton & Hammen, 2018; Felver et al., 2014; Lederer et al., 2013; Sauer-Zavala Walsh et al. 2012; Schneider et al., 2019; Uebelacker et al., 2017). Weekly check-in surveys assisted in evaluating students' experiences by identifying the most and least beneficial aspects of the yoga sessions.

Inventories and open-ended responses suggest that students showed positive changes in mood, QoL and wellness. QoL improved pre to post for all domains except social and activities of daily living. Improvements in their perceptions of their spirituality, physical fitness, ability to concentrate, positive emotions, and general wellbeing were reported. These changes were consistent with students' weekly check-in responses indicating that yoga was helpful in improving students' quality of life.

Students' overall mood profile improved as reflected by the POMS-SF. This change was due to reported increased vigor, as other mood states did not show significant changes. Improved energy level was a theme that emerged in a study by Wang and Hagins (2016) where participants reported feeling more energized after the sessions. In the current study, the improvements in vigor may have countered the effects of tension, depression, anger fatigue and confusion for these students. Perceived stress, as reported by the PSS, showed little change pre to post and the students described their levels of stress as moderate. Perhaps as in the Wunsch et al, (2017) findings, maintaining activity levels helped to buffer the negative effects of stress on health and wellbeing. This yoga course may have assisted in diminishing stress by providing tools such as breathing techniques and cultivating aspects of mindfulness.

Although mindfulness, assessed with the FMMQ, only revealed non-reactivity to be significantly different pre to post, the trends were generally positive on all subscales except "acting with awareness". Acting with awareness measured their perceptions of focus, which

showed little change. On the other subscales students reported feeling slightly better at being able to observe and describe their surroundings, emotions and thoughts. They described feeling less judgmental about themselves and less reactive to emotions and difficult situations, the latter being a significant finding. These results are consistent with previous research indicating that mindful PA may mitigate stress, and increase self-compassion, emotional regulation, and non-judgmental attitude, and improve life satisfaction (Felver et al., 2017; Sauer-Zavala, 2012; Schneider et al., 2019; Wunsch et al., 2019).

The results suggest that this Beginning Yoga course had benefits for the students that participated. Students post survey open-ended responses showed that they had learned ways to manage their emotions and gained tools to help them relax. The way the course was taught - methods and course content - was described as the most beneficial aspect based on the weekly surveys. This may indicate that the instructor's approach was supportive of students' learning. These results are consistent with Cox et al. (2020) finding that the instructor's approach to mindful PA is important in creating an atmosphere that affects the students' experience. Several students reported that the professor "shared insight," "helped with confusion," and that specific content was enjoyable in the course.

The weekly-check in survey identified stretch/strength, stress relief, breathing, self-awareness and self-care as themes that were beneficial to the students' experience. This is similar to previous research findings where college students reported mindful PA assisted with relaxation, improved mood, breathing, self-regulation, and stretching techniques as beneficial to daily life (Kim et al., 2012; Wang & Hagins, 2016). Furthermore, allowing students to freely and anonymously write about the positive and negative aspects of a course was beneficial. This was done weekly, which allowed the student to reflect on the week's session. Although these were not graded, these are a type of formative assessment that may have allowed the students to reflect on and reinforce course content. These surveys gave the instructor more insight about the course than standard evaluations done online during the final week of the course. Additionally, weekly surveys can pinpoint areas that are working and areas to improve upon.

Although the findings are promising in that students had improvements in quality of life and developed tools to help to modulate their mood, there were several limitations to the study. Most importantly, the small sample (n=7), and the inconsistencies in completion of the weekly surveys were major limitations. Confounding factors such as COVID-19, work/school schedule

and internet issues may have influenced the results as well. Participation in live WebEx sessions was the only contact some students had during the Pandemic, and some students only viewed recorded video sessions, whereby they missed peer interaction. As stated on the post survey written responses, a face-to-face format may have been a better experience. Additionally, improvements in the technology of WebEx quality may have been helpful. More broadly, the generalizability of the findings is limited due to the individualized instructional approach that each teacher has to yoga, even among similar traditions. The findings of this study only describe this limited population, in this setting and time. Although the measurements for mood, mindfulness, quality of life and stress were informed by the written responses, survey responses are limited to the perceptions of the individual responding to them. Finally, changes in mood, mindfulness, perceived stress and quality of life may require longer than a 16-week semester course to cultivate. Further study with similar measures, using a control group and a larger sample size would be more revealing with regards yoga's potential to counter the negative effects of stress. Further, research might explore the influence of weekly self-reflection surveys by comparing a mindful yoga program to a mindful yoga program with weekly self-reflection included. Finally, research might explore a longitudinal study, or maintenance changes over time and the relationships between consistent practice and continued shifts in mood, stress, mindfulness, and quality of life.

## **Conclusion**

The current findings suggest that yoga has the potential to positively affect mental and physical wellbeing. Most importantly, yoga promoted improved quality of life, improved vigor and feeling less reactive in difficult situations. Improvements in quality of life, based on QoL, included spiritual, physical, emotional, cognitive and integrated subscales. The lack of changes in the social and activity of daily living subscales may have been influenced by isolation due to the pandemic. Mood state, as reported by the POMS-SF showed no significant changes pre to post intervention in tension, depression, anger or confusion, while vigor significantly increased. Improved mood in conjunction with consistent moderate stress levels, may indicate the sessions assisting students in buffering their stress. Although significant changes were not found for most FFMQ subscales, positive trends did appear. Students' perceptions of focus showed little change, yet they tended to feel slightly better able to observe and describe their surroundings, emotions

and thoughts. They also felt less judgmental about themselves. Non-reactivity, being less reactive to emotions and difficult situations on FFMQ showed a significant beneficial shift. Finally, 9 themes were identified from the weekly check-in surveys related to benefits of the course. Methods and content were cited most often, and additional benefits were improved stretch/strength, stress relief, breathing techniques, self-awareness, safety and alignment, peer interaction, self-care and being present/mindfulness. Yoga may assist students' mood, stress levels, mindfulness and overall quality of life. However, this project has limited generalizability to other colleges, samples, and semesters not impacted by the COVID-19 pandemic. Additionally, a control group would have been helpful for comparison. Future study will be necessary to establish the extent to which college courses in physical education and yoga can have a significant impact on students' well-being.

## CHAPTER II: DISSEMINATION

The initial dissemination of this project will be in the form of a PowerPoint presentation via a WebEx Session that will be recorded. The report will be provided to the South Western community college where this research occurred, through the professional development office for faculty. This is where it can make the most immediate impact. The focus will be on the issues that students currently are contending with, considering the Pandemic, and the findings from this research will be used to stimulate discussion. Faculty will be asked to explore how we might encourage good health and wellbeing and a high quality of life on our own campus. The dissertation abstract and a report of the faculty's recommendations will be sent to the campus President as well as the Director of Instruction to assist student success. The following is the narrative of the presentation; the full presentation can be found in Appendix H.

### **Slide 1: UNCG LOGO**

**Slide 2: Presentation Title:** Hello my name is Lisa McQuade and I'm full-time faculty in the Kinesiology Dept. Today's presentation is a report based on my dissertation for EdD degree in Kinesiology from the University of North Carolina Greensboro. Thank you for participating.

**Slide 3 Improving Students' Quality of Life:** At our institution we strive to help students "achieving exceptional levels of success in student learning, student completion, gainful employment..." One of the ways we currently support this is by requiring physical education as part of the core curriculum and by offering elective courses within the discipline that count towards graduation. This presentation is meant to draw attention to how these courses can improve students quality of life and how we might extrapolate some of these findings into student life and learning. First, we'll explore my project's most important findings. Then we'll wrap up with ways that faculty may enhance their own courses with yogic techniques and with the use of surveys embedded into their course offerings.

**Slide 4: Presentation Path:** We'll explore scholarly research which guided my research, review important findings of my project and explore the implications and insights that might assist our institution.

**Slide 5: Background and Scholarly Research:** Even prior to the 2020 pandemic, we as faculty and staff have seen that students at our institution face challenges to degree or certificate

completion. Research supports our observations as 80% of students report feeling overwhelmed by their responsibilities, 50% rated their mental health as below average or poor and 50% struggle greatly with anxiety relating to school struggles and that 45% of students report feeling stressed (NAH, 2012). As a community college we serve students from all walks of life, former veterans, students who failed to thrive in high school or are first generation students. Some students are raising families while working full-time and in school full to part-time. Some may not have academic, family or financial challenges; however, they may suffer from anxiety or other mental health issues.

**Slides 6 & 7 Solutions:** Research supports the link between exercise and physical activity as means of reducing stress (Wunsch, Kasten & Fuchs, 2019). Despite these findings, ongoing stressors are more likely to be associated with poor coping mechanisms such as overeating, poor sleep hygiene, lack of exercise and poor stress management skills. Recent research supports that mindfulness practices such as yoga may help students overcome poor coping mechanisms and improve mental health and quality of life (Josefsson, Lindwall & Archer; Schneider, Malinowski, Watson, & Lattimore, 2019). Mindfulness PA may encourage student participation in PA and improve quality of life by cultivating resilience during stressful times (Wunsch, Kasten & Fuchs, 2019).

**Slide 8: Project Aims:** The project aims were to a) determine the influence of a college-level yoga course on students' mood, stress, mindfulness, and quality of life and b) to evaluate college students' experience in a yoga class. Overall, the results were informative and promising.

**Slide 9: Project: Fall 2020 ONLINE Yoga Course.** Following IRB Approval and Informed consent, online surveys were distributed at the beginning and end of the semester which inquired about their mood, mindfulness, quality of life and stress levels. Students also completed weekly surveys in which they wrote their intentions for the sessions, what they felt were the most and least beneficial aspects of the sessions. Live WebEx Sessions were recorded for students to view who were not in attendance of the live sessions. The yoga course was taught based on Kripalu Yoga methodology which emphasizes the integration of philosophical principles, breathing techniques, body scanning, and the physical postures.

**Slide 10: Participant Demographics:** 11 students initially registered for the course and 3 dropped; 8 participated, 1 did not complete post-surveys. The top three reasons participants stated for signing up for the course included curiosity about the subject matter, having heard

about the benefits of yoga and seeking a means to deal with stress. Additional reasons included wanting to improve flexibility and needing a Physical Education credit.

**Slide 11: Notable Findings**

**Slide 12:** The Quality of Life survey was developed to target the well-established relationship between physical activity and quality of life (Gill et al.,2011). The survey's development established seven components of which 5 of the 7 subscales were found to have improved significantly on Quality of Life measures in this current study. Improvements were found on the spiritual, emotional, cognitive, physical and integrative components. No improvements were noted for social and activities of daily living. There was a large effect size for all subscales, meaning that QoL improved over the course.

**Slide 13:** The study also evaluated Mood using the Profile of Mood State-SF (POMS-SF), which is used to assess transient feelings and mood. Of the six subscales for the POMS-SF only Vigor-Activity was found to have a significant improvement. Interestingly, the "Total Mood Disturbance", which is a calculation of the positive scale, "Vigor-Activity" minus the 5 negative scales, "Anger-Hostility, Confusion-Bewilderment, Depression-Dejection and Fatigue-Inertia, and Tension-Anxiety," did not show significant improvement, most probably due to small increases in the negative subscales.

**Slide 14:** Mindfulness was evaluated using the Five-Facets of Mindfulness Questionnaire (FFMQ) during the pre and post surveys. The only significant finding was "Non-reactivity," whereby students felt they were less reactive to their emotions or thoughts. Although no significant differences were found for observing, describing, and non-judgement there appeared to be a slight improvement on these subscales. The trend was that students reported feeling slightly better at being able to observe and describe their surroundings, emotions and thoughts. They described feeling less judgmental about themselves and less reactive to emotions and difficult situations, the latter being a significant finding.

**Slides 15-17: Organized Themes:** Weekly surveys invited students to freely respond to the prompts asking about the most beneficial and less beneficial aspects of the week's yoga sessions. Few negative aspects were mentioned. Those that were stated included limitations due to the course being offered online and technology issues.

Atlas.ti (2018) software was used to organize responses into 9 distinct themes regarding the benefits of the weekly sessions. These included: methods/content, stretch/strength, stress

release, breathing, self-awareness, self-care, being present/mindful, safety/alignment, and peer interaction. Examples of each theme will be used to clarify and distinguish the themes.

**Slide 18: Student Discoveries about yoga-** Students stated that they felt they could enter a relaxed state easier, more aware of their emotions and less reactive.

**Slide 19- Conclusions & Limitations-** Influences of A College-level Yoga Course include 1-Positive improvements in quality of life, improved vigor and feeling less reactive in difficult situations, 2-Mindfulness TRENDS- They felt slightly better able to observe and describe their surroundings, emotions and thoughts, and less judgmental about themselves. 3-Stress as assessed by PSS showed little change pre to post, yet students still showed these improvements. Perhaps yoga mitigated stress levels.

**Slide 20- Implications-** The results suggest that this course had positive effects for the students that participated. It may have improved quality of life for these students during the pandemic. Finally, the course methodology and content seem to be helpful to the students' wellbeing. More interactive student engagement may be beneficial. As a side note, reminding students to be mindful while learning may be beneficial for any subject.

**Slide 21** Future research may include a larger sample size, a control group or be a longitudinal study. It may also explore maintenance of changes following a yoga course.

**Slide 22** Faculty may incorporate mindfulness practices such as setting an intention into your course offerings. They may model and encourage wellness practices. Check-in surveys might be added to course offerings to promote mindfulness. Finally, the NAMI has a peer run mental health organizations they might be part of our student life programming. When faculty are examples of wellness this models it for our students.

**Slide 23-** Benefits of "check-in" surveys. These may be more insightful than online-end-of-course evaluations. They can help you pin-point areas to improve, re-iterate points, and clarify information. And finally, they can act as a means for students to reflect and reinforce course content.

**Slide 24 Namaste & Slide 25 Q & A:** Thank you for your patience and now does anyone have any questions about this project? I'll do my best to answer.

**Slides 26-28** References

## CHAPTER III: ACTION PLAN

This research will be presented through the faculty continuing education department at the college where this research was done. The focus will be on the findings, and how mindful physical activity may assist with student success. An additional point that will be discussed is the use of surveys embedded in the learning portal of courses that may provide insightful feedback for instructors to improve their instruction. Personally, I have already implemented bi-weekly check-in surveys in my courses

### **Local/Campus Plans**

Going beyond the research findings to continue to engage in college community wellness, I plan to make connections with the National Alliance on Mental Illness (NAMI) to help bring resources to students on my campus. This organization provides peer-run mental health organizations on campus that support fellow students, raise mental health awareness and promote services. Additionally, I will be connecting with the Student Activities department offering mindful physical activities for the Student Wellness Fair and workshops during stressful times for students that teach yogic techniques to regulate mood. I will continue to provide yoga for weekly yoga sessions to faculty and staff.

### **Professional/Research Plans**

Additionally, I plan to continue with my research interests of yoga to improve quality of life, mood and mindfulness for college students. Looking beyond the pandemic and a return to normalcy, will provide opportunities to investigate a face-to face course offering and compare findings to this current project. An additional layer might explore weekly surveys verses no surveys. Additionally, I hope to investigate potential long-term effects of yoga on students in a semester course versus seasoned practitioners by connecting with a local yoga center.

I plan to make connections to further assist educators on other campuses nationwide by presenting at a Higher Ed conference such as Texas Association for Health, Physical Education, Recreation & Dance conference. The format would be a yoga workshop that incorporates the relevant findings of this study. This presentation will also be incorporated into the Yoga Alliance Continuing Education workshops that I lead called Safe Yoga Alignment & Assists for Discovery Yoga.

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## APPENDIX A: Qualtrics Survey

### **Pre-Intervention: PHED 1128-Week 1-2-YOGA Survey- Fall 2020**

Thank you for considering helping me with my dissertation survey. Please review the IRB-approved consent form sent via email for details of the study and participant criteria. Then, if you agree to participate, please click the "I agree to participate" option below to provide informed consent and continue to the survey. I hope you help by completing the surveys. If you choose not to do so, that's fine. Contact Lisa Almedina-McQuade if you have questions regarding the study. Thank you!

**In the following survey, you will be able to describe your previous experience with and current interest in yoga. You will also be asked about your mood, mindfulness, stress levels, and quality of life.** You are not required to answer all the questions. Your survey responses will not affect your class participation or grade in any way. **You may choose to opt-out at any time by simply closing your web browser from the survey. No partially completed surveys will be recorded.**

- Please enter the last **four (4) numbers** of your College ID code. (This ID is only used to match surveys from the beginning of the course.)
- What is your student status? Full-Time, Part-Time, Non-degree seeking
- Have you participated in yoga? No, not at all, yes, a few times, yes, in regular class or using video/App for 6 months or more.
- How would you describe your overall health?
  - Poor, below average, average, above average, excellent
- How would you describe your overall mental health?
  - Poor, below average, average, above average, excellent
- Godin-Shephard (2011) leisure-time physical activity questionnaire
- Experience
  - Why did you sign up for this yoga course?
  - Please comment on ways you feel yoga might carry over into your life: Academics, personal and/or work life.
  - In the future how do you see yoga assisting you in your life?
  - How do you describe mindfulness practice?
- Surveys:
  - Profile of Mood States-SF
  - Five Facets of Mindfulness Questionnaire
  - Quality of Life
  - Perceived Stress Scale

### **Post-Intervention: PHED 1128-Week 15-16-YOGA Survey- Fall 2020**

Recall that participation in this study is voluntary. If you have any questions regarding the study, please contact Lisa Almedina-McQuade at Lisa.McQuade@xxxx.edu. In the following survey, you will be able to describe your experiences with yoga over this past semester. You will also be asked about your mood, mindfulness, stress levels, and quality of life. You are not required to answer all the questions. Your survey responses will not affect your class participation or grade in any way.

- Please enter the last **four (4) numbers** of your College ID code. (This ID is only used to match surveys from the beginning of the course.)
- Surveys used
  - Profile of Mood States-SF
  - Five Facets of Mindfulness Questionnaire
  - Quality of Life
  - Perceived Stress Scale
- Did yoga affect your physical well-being? No, Yes, please comment on how.
- Did yoga affect your emotional well-being? No, Yes, please comment on how.
- Did yoga affect your social well-being. No, Yes, please comment on how.
- Did yoga affect your spiritual well-being? No, Yes, please comment on how.
- Did yoga affect your mental well-being? No, Yes, please comment on how.
- What aspects of the course did you find most helpful? Why?
- Which aspects of the course did you find the least helpful and Why?
- What aspects of the course could be improved to create a better experience?
- Please comment on how, if at all, yoga has carried over into your life: Academics, personal and/or work life.
- Please comment on how, if at all, you see yoga assisting you in your future life?
- How would you describe your overall health? Poor-Excellent (1-5)
- How would you describe your mental health? Poor-Excellent (1-5)
- Do you intend to continue your yoga practice? Yes, No or Maybe

**Weekly Check-In Survey:**

Each week you will be asked to complete this survey. It will only take about 3 to 5 minutes to do. It asks you about your intention, about your yoga class experience and your overall quality of life.

1. Today's date
2. Please enter the last four (4) numbers of your XXXX College ID code.
3. What has been your intention for class this week? This may be more than one intention.
4. What aspects in this week's yoga sessions were beneficial to you? Why?
5. What aspects in this week's yoga sessions were NOT helpful? Why?
6. State Mindfulness Survey for Physical Activity.

## APPENDIX B: IRB Information Sheet

**Project Title:** Yoga: Mindful Physical Activity to Enhance College Students' Mental Health and Well-being **Principal Investigator:** Lisa Almedina-McQuade **Faculty Advisor:** Dr. Diane Gill **What are some general things you should know about research studies?** You are being asked to take part in a research study. Your participation in the study is voluntary. You may choose not to join, or you may withdraw your consent to be in the study, for any reason, without penalty. Research studies are designed to obtain new knowledge. This new information may help people in the future. There may not be any direct benefit to you for being in the research study. There also may be risks to being in research studies. If you choose not to be in the study or leave the study before it is done, it will not affect your relationship with the researcher. Details about this study are discussed in this consent form. It is important that you understand this information so that you can make an informed choice about being in this research study. **What is this all about?** I am asking you to participate in this research study to determine the influence of participation in a yoga course on student's mood, stress, mindfulness, and quality of life. This research project will only take about 15-20 minutes and will involve you taking two surveys, one at the beginning of the course and one at the end. Additionally, weekly surveys that take 5-8 minutes each will be done to which ask about your intention, your yoga class experience, your overall quality of life and perceptions of mindfulness. Your participation in this research project is voluntary. You can choose to be in the study or not. Choosing not to participate or withdrawing from the study will have no effect on your grade. I will not know who agreed to participate in the study until after final grades have been submitted a link to the surveys will be sent to your email, if you'd like to participate just click on the link. **How will this negatively affect me?** The surveys ask about mood, stress, and quality of life and your responses are confidential. Should the questions raise any emotional issues you may contact Lone Star College's Counseling Services at 281-655-3753 or <http://www.lonestar.edu/counseling-services.htm>. Otherwise, nothing other than the time you spend on this project there are no known or foreseeable risks involved with this study. **What do I get out of this research project?** The results of this study may suggest a complementary or alternative approach to managing mood, stress and improve quality of life. It may also suggest how mindful exercise affects these areas as well as stimulate additional research. **Will I get paid for participating?** You will not be compensated for your time. **What about my confidentiality?** Absolute confidentiality of data provided through the Internet cannot be guaranteed due to the limited protections of Internet access. Please be sure to close your browser when finished so no one will be able to see what you have been doing. Surveys will be given using Qualtrics via a secured server. All information obtained in this study is strictly confidential unless disclosure is required by law. We will not ask for any names or identifying information and all data will be coded with a study ID number and remain on secured servers.

8/26/20

## **APPENDIX C: Email Recruitment Script**

Hello, my name is Professor McQuade and I am currently doing my dissertation through University of North Carolina Greensboro. My study has to do with yoga, mood, stress, mindfulness and quality of life in college students and I'd be grateful if you'd assist me with my research. You're eligible to be in this study because you are taking this yoga course.

I am asking you to participate in this research study to determine the influence of participation in a yoga course on student's mood, stress, mindfulness, and quality of life. If you decide to participate in this study, you will be taking several online surveys. The surveys ask about mood, stress, mindfulness and quality of life. This research project will only take about 15-20 minutes and will involve you taking two surveys, one at the beginning of the course and one at the end. Additionally, weekly surveys that take 5-8 minutes each, which ask about your intention, your yoga class experience, your overall quality of life and perceived mindfulness.

Your participation in this research project is voluntary. You can choose to be in the study or not. Choosing not to participate or withdrawing from the study will have no effect on your grade. I will not know who agreed to participate in the study until after final grades have been submitted a link to the surveys will be sent to your email, if you'd like to participate just click on the link.

## APPENDIX D: Sample Weekly Checklists

The student learning portal included weekly checklists which prompted them to take the weekly survey.

<input type="checkbox"/>	WEEK 3: Sept 7-13	▼
<input type="checkbox"/>	CONTENT	▼
<input type="checkbox"/>	POST to Discussion Board	🔔 ▼
<input type="checkbox"/>	RESPOND to Discussion Board	🔔 ▼
<input type="checkbox"/>	Journal WebEx/Video Sessions 5 & 6	🔔 ▼
<input type="checkbox"/>	Weekly Check-in Survey	🔔 ▼

✓ COMPLETE WEEKLY SURVEY

×

Add Due Date

Please go to this link to complete the survey: [PHED 1128 Weekly- Check-in Survey](#)

*These surveys will also be part of the dissertation project unless you have opted out, please see email regarding the project for more details. However, these surveys are used to inform the instructor of how the students are doing in the course, so are helpful. Please complete them. Namaste!*

## APPENDIX E: Intervention: Course Syllabus

**Course Overview-Catalog Description:** This introductory course offers practice in basic Yoga. Students study history and basic terms along with philosophical and physiological principles and the movements of Yoga.

**Student Learning Outcomes:**

1. Demonstrate basic skills of Yoga posture, breathing, and relaxation, and the ways in which it differs from other physical activities.
2. Discuss the physiological and psychological benefits that can emerge from the practice of Yoga.
3. Explore the principles of movement that underlie many forms of Yoga.
4. Identify the benefits of health-related fitness.

**Instructor's Intention:** After completion the student will have basic knowledge and skills that will allow him/her to practice yoga in a mindful and safe way. The instructor's goal is to empower the students with the understanding of their bodies and to trust their own inner knowing so that they can apply yoga in their everyday lives.

**Required Textbook:** *Kripalu Yoga: A Guide to Practice on and Off the Mat* by Richard Faulds ISBN 10:0553380974

**Course Topics/Interventions**

- History
  - Types of Yoga
  - Kripalu Yoga Stages
    1. Body & Breath Awareness
    2. Holding the Postures & Attuning to Prana
    3. Meditation-in-Motion:
- Breath
  - Mechanics of breathing
  - Dirgha pranayama: The Complete Breath
  - Ujjayi: Sounding Breath
  - Nadi Shodhana: Alternate Nostril Breath
  - Kapalabhati: Skull Shining- Also known as breath of fire
  - Bhastrika- Bellows Breath
  - Philosophy
    - The Eight Limbs of Yoga
      - Yama- Social Ethics
      - Niyama- Personal Practices
      - Asana - physical postures
      - Pranayama- breath & life-force control
      - Pratyahara- internalizing sensual perception
      - Dharana- concentration
      - Dhyana- meditation
      - Samadhi- union
    - Energy Anatomy
    - Nadis
    - Chakra System

- The Five Sheaths- The Koshas
  - Bandhas
  - Mudras
- The Practice
  - Developmental Warm-up
  - Sun-Salute- Surya Namaskar
  - Anatomy to Consider for Safety
  - Movements of the Spine
  - Core Engagement
  - The Nature of Joints
  - The Physics of Yoga- Lever Lengths
  - Press Points for Alignment
  - Awareness of habitual patterns
  - Basic Postures
    - Standing, Seated & Supine
    - Backbends, Forward Folds, Spinal Twists, Lateral Flexion, Inversions, Lunges, Squats, Balances, Hip Openers.

*Mountain, Half-Moon, Standing Backbend, Standing forward fold, Triangle, Warrior I, II & III, Dancer, Tree, Standing Spinal twist, Prone-Boat, Child's Pose, Downward Dog, Half and Full Locust, Cobra, Symbol of Yoga, Bound Angle, Pigeon, Head to Knee, Seated Spinal Twist, Posterior Stretch, Bridge, Half and Full- Knee to Chest, Half- Shoulder Stand, Fish, Supine Spinal Twist and Corpse*

- Health Benefits
  - Special Populations: Pregnancy, Life-Span, Chronic Disease
  - Stress Response
  - Relaxation, and Meditation
  - Yoga Nidra- Twilight Sleep
  - Continuing Practice

### **Grades:**

- 4 Online Quizzes, and Online Final Exam
- Practicum at Mid-term and Final on the postures and breath- Video/PowerPoint Projects
- 4 WebEx Session Journals
- Discussion Boards-
  - Personal History with Yoga
  - Yogin Video on Pranayama
  - Pranayama- Breath
  - Does Yoga make you a Hindu?
  - The 8 Limbs of Yoga
  - Anatomy to Consider- 3 awakenings about one's personal practice.
  - Yoga Nidra
  - TedTalk by Kelly McGonigal on Stress
- Self-Reflection Paper
- Attendance and Participation- WebEx-participation/ TechSmith-video viewing and Journaling experience.

**APPENDIX F: Fall 2021 Yoga Session Plan**

<b>WEEK</b>	<b>SESSION 1</b>	<b>SESSION 2</b>
Week 1 August 24- 30 WebEx Sessions1 & 2	Meet & Greet Review Syllabus Developmental Warm-up and Experience  1.1 Now is set forth authoritative teaching on yoga	<b>Context:</b> Setting an Intention Intro to Warm-ups Check in chat: Name & intention <b>Teach</b> Pranayama: Complete Breath/Dirgha <b>Foundations:</b> Sun salute- low lunge. Mountain, Half-Moon, Boat, Child Relaxation -contract & release. Breath: Alternate Nostril .
CONTENT	Textbook Welcome to Kripalu Yoga pages 1-7, Chapter 7 pages 73-79 <b>ALL Semester: Refer to Asana PowerPoint on D2L</b> <b>Review: Silent &amp; Teaching Videos</b>	
YOGA I Assignments/ Discussion Boards (DB)	Syllabus quiz to enter course modules due 8/26 Find Sun Salute practice sheet & Video on D2L- Module 5 Postures/Asana-Intention assignment DB: history, 1.11 Memory retains living experience- P-8/25 R-8/30 <i>P= initial post R= respond to 2 posts</i> Create and write in WebEx Journal, Journal about sessions 1 & 2. Sessions must complete by Sunday 11:30 pm of the week that the session took place.	
Week 2 August 31- Sept 6 WebEx Sessions 3 & 4	<b>Context:</b> <i>Creating Safety</i> <b>Self-Awareness:</b> <i>Going at your own pace.</i> <b>Check in chat:</b> Name & intention Intro to Warm-ups <b>Teach</b> <b>Pranayama:</b> Complete Breath/Dirgha <b>Foundations:</b> Standing-Backbend, Standing S-Twist, Standing F-Fold, Sun Salute- high lunge <b>Relaxation</b> <b>Breath:</b> Alternate Nostril .	<b>Context:</b> The Practice of Being Present <b>Self-Awareness:</b> Here & Now <b>Check in chat:</b> Name & intention. Developmental Warm-up <b>Teach:</b> Warrior I & II Review <b>Relaxation:</b> demonstrate Corpse/Savasana <b>Breath:</b> Alternate Nostril
CONTENT	Chapter 1: The Practice of Being Present <b>Webpage-</b> Module 1- History	
YOGA I Assignments/DB	DB: Module 3A: Philosophy- Yoga & Hinduism? P-9/2 R- 9/6 -Journal WebEx Sessions 3 & 4 -Please find email with fact sheet about my study (also found on D2L) and take UNCG Survey,	

	-Do Weekly check-in (if you decide not to be part of the research project, this data will not be included, however you still do the survey because it provides information to me about the week)	
Week 3 Sept 7-13 WebEx Sessions 5 & 6	<b>Context:</b> Self-acceptance/ Individual differences Self-Awareness: I'm perfect just as I am. <b>Check in chat:</b> Name & intention Developmental Warm-up <b>Teach:</b> Triangle, Cobra & Downward Dog Review Relaxation -contract & release <b>Breath:</b> Alternate Nostril	<b>Context:</b> Breath Awareness <b>Self-Awareness:</b> Breathing life into Your Practice <b>Check in chat:</b> Name & intention <b>Breath awareness</b> from back w/ hands on side bell, ribs & clavicles. <b>Benefits &amp; Contraindications</b> <b>Connect</b> Ujjayi w/ Practice <b>Teach</b> what comes up for students.
CONTENT	<b>Chapter 2</b> Breathing Life, into your practice <b>Chapter 12-</b> Prana & Life Force, <b>Chapter 13-</b> Pathways to Energy <b>Module 2- Breath- Webpage-Pranayama</b> <b>Pranayama handouts</b>	
YOGA I Assignments/ DB	Journal WebEx/Video Sessions 5 & 6 DB: Module 2A- Yogin Video P- 9/8 R-9/13 DO: Weekly check-in survey	
Week 4 Sept 14-20 WebEx Sessions 7 & 8	<b>Context:</b> <i>A Marriage of Stretch &amp; Strength</i> <b>Self-Awareness:</b> <i>Do I need more flexibility or more stability?</i> <b>Check in chat:</b> Name & intention <b>Warm-ups:</b> spine focus <b>Teach:</b> Joint types, movement & segment. <b>Teach:</b> ½ Locust, Locust & Bound Angle Relaxation <b>Breath:</b> Alternate Nostril .	<b>Context:</b> Awareness Through Alignment <b>Self-Awareness:</b> Listening to the body's messages <b>Check in chat:</b> Name & intention Teach: Seated Posterior stretch, Incline-plane Fish & Supine-Spinal Twist
CONTENT	<b>Chapter 3-</b> Stretch & Strength <b>Chapter 7</b> The Art of Practice <b>Part Two:</b> Practice Sessions p. 83-166 <b>Module 2- Breath- Webpage-Pranayama</b>	
YOGA I Assignments/DB	DB Module 2B: Pranayama- Breath 1.2 <i>Yoga citta-vrtti-nirodhah</i> “-Yoga occurs when the mind chatter stops.” P- 9/15 R-9/20 WebEx Session Journal-1 DUE- MONDAY- 9/14 Journal WebEx Sessions 7 & 8 Quiz 1 due 9/20	
Week 5 Sept 21-27 WebEx Sessions 9 & 10	<b>Context:</b> Spinal Movements & Safety <b>Self-Awareness:</b> How is my posture?	<b>Context:</b> <i>A Marriage of Stretch &amp; Strength</i> <b>Self-Awareness:</b> <i>Do I need more flexibility or more stability?</i>

	<p><b>Check in chat:</b> Name &amp; intention  <b>Teach:</b> Movements of the Spine  Seated spinal twist, Head to Knee  Review  II.46 sthira-sukham-asanam  “the posture is firm &amp; soft  Relaxation  <b>Breath:</b> Alternate Nostril</p>	<p><b>Check in chat:</b> Name &amp; intention  <b>Warm-ups:</b> spine focus  <b>Teach:</b> Joint types  <b>Teach:</b> ½ Locust, Locust &amp;  Bound Angle  Relaxation  <b>Breath:</b> Alternate Nostril</p>
CONTENT	<p><b>Chapter 7</b> The Art of Practice  <b>Part Two:</b> Practice Sessions p. 83-166</p>	
YOGA I Assignments/DB	<p>DB: Module 4A Practice- Paul Grilley- P- 9/22 R-9/27  Journal WebEx Sessions</p>	
Week 6 Sept 28-Oct 4 WebEx Sessions 11 & 12	<p><b>Context:</b> <i>Practicing at the Edge</i>  <b>Self-Awareness:</b> <i>Listening to the body’s messages</i>  <b>Check in chat:</b> Name &amp; intention  <b>Review</b> Ujjayi in Centering  <b>Review</b> Spinal Movements w/  postures  <b>Teach:</b>  Symbol of Yoga, Bridge, ½-knee-to-  chest, Knees-to- chest</p>	<p><b>Context:</b> <i>Balance &amp; Concentration</i>  <b>Self-Awareness:</b> <i>Am I breathing?</i>  <b>Check in chat:</b> Name &amp; intention  <b>Teach:</b> : Dancer</p>
CONTENT	<p><b>Chapter 4 Practicing at the Edge</b>  <b>Chapter 7</b> The Art of Practice  <b>Part Two:</b> Practice Sessions p. 83-166  <b>Module 4:</b> Practice- <b>Webpage</b> Anatomy to Consider</p>	
YOGA I Assignments/DB	<p>DB: Assigned posture- demonstrate alignment, what are the benefits &amp; contraindications and demonstrate a counter posture. P- 9/30- R- 10/4  Journal WebEx Sessions  Practicum groups will be assigned on Oct 4.</p>	
Week 7 Oct 5-11 WebEx Sessions 13 & 14	<p><b>Context:</b> Benefits of Inversions  <b>Self-Awareness:</b> <i>What benefits me today?</i>  <b>Check in chat:</b> Name &amp; intention  <b>Teach:</b> ½ Shoulder Stand  Review Postures  Relaxation  Pranayama: Dirgha</p>	<p><b>Context:</b> Working with Problem Areas  Review how we’ve been using of PROPS  <b>Check in chat:</b> Name &amp; intention  Centering: Ujjayi &amp; Dirgha  Warm-ups: Spine,  Abdominals &amp; legs</p>
CONTENT	<p><b>Chapter 10:</b> Working with Problem Areas  <b>Module 4:</b> Practice- <b>Webpage</b> Anatomy to Consider</p>	
YOGA I Assignments/DB	<p>Group DB for practicum  WebEx Sessions Journal -2 DUE 10/5  Journal WebEx Sessions</p>	
Week 8 Oct 12-18 WebEx	<p><b>Context:</b> <i>Trust Yourself</i>  <b>Check in chat:</b> Name &amp; intention  <b>REVIEW</b> for Practicum</p>	<p><b>Practicum</b> - create your video of Sun Salute &amp; 5-Postures- insert into PowerPoint, photos of your 5</p>

Sessions 15 & 16	<i>1.33 The mind. Becomes quiet when it cultivates friendliness in the presence of happiness, active compassion in the presence of unhappiness, joy in the presence of virtue and indifference toward error</i>	postures. These will be distributed to you by the professor. DUE SUNDAY 10/18
CONTENT	Chapter 7-10 and Module 4	
YOGA I Assignments/DB	DB: Module 4B: Practice- Practicum- P- 10/14,- R-10/18 Journal WebEx Sessions	
Week 9 Oct 19-25 WebEx Sessions 17& 18	<b>Context:</b> Building Character Facing your Fears <b>Teach;</b> 8 Limbs of Yoga <b>Warm-ups:</b> Hips, Spine, Shoulders Pranayama: Kapalabhati, Nadi Shodhana	<b>Context:</b> Meditation in Motion Three Stages of Kripalu Yoga Stage 3 video
CONTENT	Chapter 16: Building Character Module 3: Philosophy-Webpage Philosophy	
YOGA I Assignments/DB	DB: Yoga vs Morality p. 260-262 in text - P- 10/21 R-10/25 Journal WebEx Sessions	
Week 10 Oct 26-Nov 1 WebEx Sessions 19 & 20	<b>Context:</b> Yamas-Restraints <b>Self-Awareness:</b> Ahimsa, nonviolence	<b>Context:</b> Niyama-Observances Self-Awareness: Santosha-contentment & Tapas- to generate heat
CONTENT	Chapter 16: Building Character Module 3: Philosophy-Webpage Philosophy	
YOGA I Assignments/DB	DB: Module 3B: The 8 Limbs of YOGA- P- 10/28- R- 11/1 WebEx Sessions Journal 3 due 10/26 Quiz 2- Philosophy 11/1 Journal WebEx Sessions	
Week 11 Nov 2-8 WebEx Sessions 21 & 22	Context: Awareness of habitual patterns Self-Awareness:-Are my thoughts also habitual?	
CONTENT	<b>Chapter 15</b> Experiences and Awakenings	
YOGA I Assignments/DB	DB: Habitual patterns of movement, posture, thought, etc? P- 11/4 R-11/8 Journal WebEx Sessions	
Week 12 Nov 9-15 WebEx Sessions 23 & 24	<b>Context:</b> Empowerment <b>Self-Awareness:</b> Accessing Body Wisdom <b>Warm-ups:</b> Legs, Hips, Shoulders	<b>Context: Stress Response &amp; Yoga</b> <b>Emphasis on Pranayama &amp; stress:</b> Nadi Shodhana
CONTENT	<b>Chapter 8</b> Nurturing the Roots of Health <b>Chapter 9:</b> Accessing Body Wisdom <b>Module 5-</b> Health-Webpage-Relaxation, Meditation & Stress Response	
YOGA I Assignments/DB	DB: Module 5B: Health P- 11/11 R-11/15 Quiz 3: The Practice due 11/9 Journal WebEx Sessions	

Week 13 Nov 16-22 WebEx Sessions 25 & 26	Context: Pathways of Energy Self-Awareness: How is your energy?	Context: Riding the Wave of Sensation
CONTENT	<b>Chapter 13</b> Pathways of Energy <b>Chapter 14</b> Purifying Body and Mind Chapter 18 Riding the Wave of Sensation <b>Module 5</b> -Health-Webpage-Relaxation, Meditation & Stress Response	
YOGA I Assignments/DB	DB: Module 5A Chakras-p. 256- P-11/18 R-11/22 Journal WebEx Sessions WebEx Sessions Journal 4 due 11/16	
Week 14 Nov 23-29 Thanksgiving Week-WebEx Session27	<b>Context:</b> Rejuvenation Through Relaxation Teach Moon Salute Yoga Nidra	NO SESSION Happy Holiday!
CONTENT	<b>Module 5</b> -Health-Webpage-Relaxation, Meditation & Stress Response	
YOGA I Assignments/DB	<b>DB:</b> Module 5B: Yoga Nidra- P- 11/25 R-11/29 Quiz 4: Yoga for Health due 11/29 Journal WebEx Sessions	
Week 15 Nov 30-Dec 6 WebEx Sessions 28 & 29	Context: Clearing the Mind	Context: Mediation in Motion
CONTENT	Chapter 19 Clearing the Mind Chapter 20- Mediation in Motion	
YOGA I Assignments/DB	DB: Check-in with practicum group Journal WebEx Sessions	
Week 16 Dec 6-13 No WebEx sessions	<b>Do Your Practicum</b> <b>Yoga I</b> Practicum- create your video of Sun Salute- insert into PowerPoint, photos of your 5 postures. DUE 7/6 DUE WED 12/9 @ 11:30 pm	FINAL EXAM online\ -Was open for a week-closes today
CONTENT	Check announcement for review notes for final exam	
YOGA I Assignments/DB	WebEx Sessions Journal 5- due 12/7 Reflection Paper Due 12/7 (Drop Box opens 11/26) Practicum due WED FINAL DUE THUR- it will be open for 1-week Thur-Thur	

**APPENDIX G: Weekly Survey Means and Standard Deviations**

**Table G. Weekly Survey Means and Standard deviations for State Mindfulness-PA (SMS-PA) and rating of overall Mindfulness, Mood, Quality of Life (QoL), Physical Health, Mental Health and Stress**

WEEK	n	SMS-PA	Mindful	Mood	Quality of Life 1-5 scale	Physical Health	Mental Health	Feeling of Stress
<i>Week 2</i>	6	43.00 ±6.99	3.83 ± 0.41	2.83 ± 0.75	3.00 ±0.00	3.43 ±0.54	3.14 ±0.69	2.29 ±0.84
<i>Week 3</i>	7	42.29 ±4.23	3.86 ±0.38	3.00 ± 0.82	3.00 ±0.58	3.14 ±0.69	2.57 ±0.54	2.26 ±0.49
<i>Week 4</i>	6	44.67 ±4.18	3.86 ±0.38	3.17± 0.75	3.50 ±0.55	3.14 ±0.38	2.86 ±0.38	1.86 ±0.90
<i>Week 5</i>	7	45.43 ± 6.63	3.86 ±0.38	3.29 ±0.49	3.43 ±0.55	3.29 ±0.76	2.86 ±0.90	2.57 ±0.54
<i>Week 6</i>	7	44.00 ± 5.66	3.86 ±0.38	3.14 ±0.69	3.33 ±0.52	3.43 ±0.54	3.43 ±0.78	2.14 ±0.69
<i>Week 7</i>	7	44.71 ± 4.65	3.86 ±0.38	3.14 ± 0.69	3.00 ±0.58	3.29 ±0.95	2.86 ±0.69	2.71 ±0.76
<i>Week 8</i>	5	44.67 ±9.09	4.00 ±0.00	3.60 ±0.89	3.33 ±0.82	3.67 ±1.03	3.50 ±1.23	2.67 ±0.82
<i>Week 9</i>	7	46.33 ±7.42	3.83 ±0.41	3.29 ±0.76	3.17 ±0.41	3.67 ±0.52	3.17 ±0.75	2.17 ±0.75
<i>Week 10</i>	6	47.67 ±8.14	4.00 ±0.00	3.00 ±0.89	3.17 ±0.75	3.67 ±1.37	3.83 ±0.75	2.83 ±0.98
<i>Week 11</i>	6	50.67 ±7.12	4.00 ±0.00	3.00 ±0.89	3.33 ±0.51	3.50 ±0.55	3.00 ±1.41	2.67 ±1.03
Week 12	7	43.29 ± 6.68	4.00 ±0.00	3.14 ± 0.90	3.14 ±0.90	3.17 ±0.75	3.17 ±0.75	2.33 ±0.52
Week 13	7	45.57 ±6.95	4.00 ±0.00	2.86 ±0.90	3.17 ±0.74	3.33 ±0.52	2.83 ±0.98	2.83 ±0.98
Week 14	5	52.00 ±7.75	4.00 ±0.00	3.67 ± 1.03	3.83 ±0.74	3.50 ±1.05	2.67 ±1.03	2.83 ±0.41

# APPENDIX H: PowerPoint Presentation

6/8/2021



1

**YOGA: MINDFUL PHYSICAL ACTIVITY TO ENHANCE COLLEGE STUDENTS WELL-BEING**

Primary Investigator  
Lisa Almedina-McQuade,  
MA, ACE-PY, E-RYT-500+

Directed by Dr. Diana Gill, PhD,  
University of North Carolina  
Greensboro

A small photograph of a person sitting at a desk, looking at a laptop screen.

2

Improving Students Quality of Life

- Our Mission- We strive to help students achieving exceptional levels of success by:
  - Student learning
  - Student completion
  - Student engagement
- Three ways we already do this:
  - Register PHED: Health & Physical Fitness
  - Student activities on campus: yoga, strength training, etc.
  - Student activities

3

Prevention Path

- Explain Scholarly Research
- Review most important findings
- Explain implications and insights

A photograph of a paved path winding through a wooded area with trees and sunlight filtering through the leaves.

4

Background: Scholarly Research

- Student Challenges:
  - 85% of them feel overwhelmed by their campus activities and studies
  - 85% rated their mental health as fair average or poor
  - 85% struggled greatly with anxiety that resulted in school struggles
  - 85% of college students report feeling stressed
  - APA, 2019, 2018, 2017

A cartoon illustration of a young man with brown hair, wearing a patterned shirt, sitting at a desk with books and looking stressed.

5

Solutions

- Exercise and physical activity
  - reduce stress
  - improve feelings of well-being

(Wenrich, Gaten & Park, 2017)

An illustration of a person in a blue tank top and black leggings performing a yoga pose (Cobra) on a mat.

6

### Solutions cont.

- Mindful Exercise
  - Encourages participation
  - Improves Mental Health
  - Cultivates Resilience
  - Improves Quality of Life

Source: Institute of Health Economics and Statistics (2019)  
 URL: <https://www.ihes.gov.sg/>

7

### Project aims were to:

- 1) determine the influence of a college-level yoga course on students' mood, stress, mindfulness, and quality of life
- 2) evaluate college students' experience in a yoga class. Overall, the results were informative and promising.

8

### Project: Fall-2020 ONLINE Yoga Course

- **Research Objectives**
  - Measure the impact of the course on students' mood, stress, mindfulness, and quality of life.
  - Measure the impact of the course on students' experience in a yoga class.
- **Methodology**
  - Pre-test/post-test design
  - Pre-test: Pre-Course Survey
  - Post-test: Post-Course Survey
- **Results**
  - Significant improvements in mood, stress, mindfulness, and quality of life.
  - Positive feedback on the course and the instructor.

9

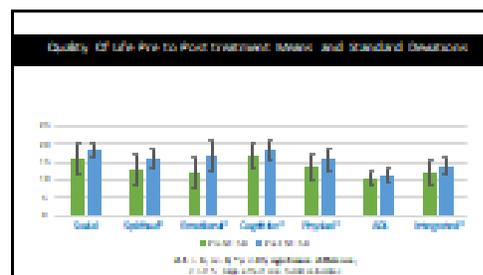
### NOTABLE FINDINGS

- Significant improvements in mood, stress, mindfulness, and quality of life.
- Positive feedback on the course and the instructor.

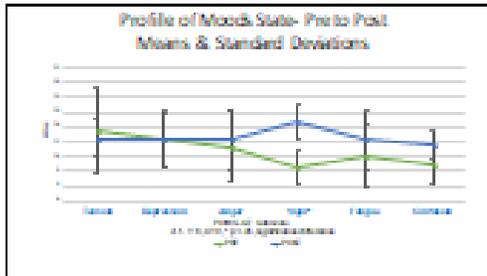
10

### NOTABLE FINDINGS

11



12



13



14

**Themes & Percentages for Students Perceived Benefits**

- IMPROVED COORDINATION (27.0%)**
  - I enjoyed feeling grounded and the effects obtained about the anatomy of the body. I love the one hand/one foot balance.
  - I really enjoy how Professor takes things back to fundamentals so we're never overwhelmed.
- STRENGTH/STABILITY (25.0%)**
  - Stretching, my calves were tight after the one hand/foot balance.
  - The postures helped to strengthen my body.
- STRESS RELIEF (21.0%)**
  - It was a really nice exercise that helped to get a lot of energy to feel a sense of relief.
  - My cell and info.
  - The combination towards integrating anatomy/balances I had a stressful week.

15

**Themes & Percentages for Students Perceived Benefits cont.**

- BREATHING (11.0%)**
  - Breathing, this was deemed important just for mental work.
  - Breathing because I struggle with regulating my breathing.
  - Open my lungs, relax and release.
- SELF-MOTIVATION (10.7%)**
  - Patiently.
  - Being able to reflect.
- SELF-CARE (7.1%)**
  - Being able to try and connect with myself and just myself that.
  - Focus on myself and my body.

16

**Themes & Percentages for Students Perceived Benefits cont.**

- MENTAL FOCUS/PRODUCTIVITY (6.2%)**
  - The ability to be present.
  - It helped me feel centered.
- GROWTH & RESILIENCE (4.4%)**
  - Focus on my body and productivity.
  - Posturing such as movements are helpful because I wasn't aware that I was doing it wrong.
- POSTURE/ALIGNMENT (4.4%)**
  - Focus on our bodily patterns and the impact of the mind's systems are well.
  - Instructional content where would help anyone with a way to help each other if that was not your responsible matter.

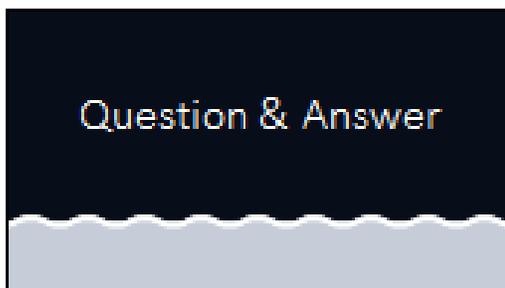
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**Students Discoveries about Yoga**

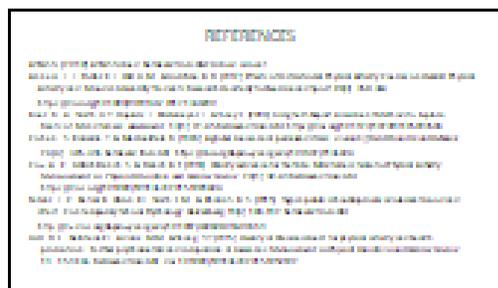
- "able to enter a state of relaxation faster than a whole day of being working?"
- "Yoga had helped them to become more aware of what I was, feeling, more aware of how?"
- "It's okay to feel negative emotions, sometimes and it helped me understand my feelings better?"
- "Yoga made me learn to not be so quick to judge on a matter and take a step back sometimes."

18

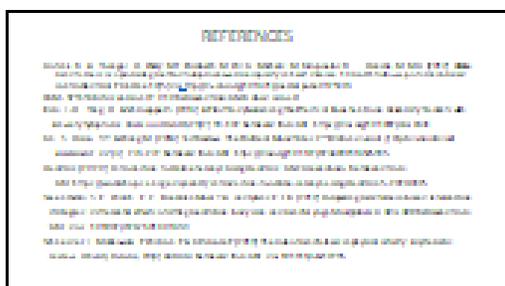




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26



27



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