

THE DEVELOPMENT, IMPLEMENTATION, AND EVALUATION  
OF A YOGA, MEDITATION, AND GRATITUDE PRACTICE HEALTH  
PROMOTION EFFORT TO ENHANCE WELL-BEING IN WOMEN

by

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## ABSTRACT

### THE DEVELOPMENT, IMPLEMENTATION, AND EVALUATION OF A YOGA, MEDITATION AND GRATITUDE PRACTICE HEALTH PROMOTION EFFORT TO ENHANCE WELL-BEING IN WOMEN

Carolyn Frost

Well-being is critical to fostering improved physical, mental, and emotional health among women. Regular physical activity also has significant implications for women's health. Addressing the barriers that women experience to exercise may help improve exercise adherence and—ultimately—help to promote well-being in women.

Mind-body therapies (e.g., yoga and meditation) have long been considered health promoting efforts with a well-being emphasis. Research confirms that these therapies are generally beneficial, safe, flexible, cost-effective and accessible. In addition, gratitude has strong links to mental health and life satisfaction, and has been shown to enhance well-being and facilitate goal attainment.

There is an abundance of research on yoga, meditation and gratitude practices, though there is no program that effectively combines all three. This dissertation therefore developed, implemented, and evaluated the feasibility and effectiveness of a health promotion effort that integrates elements of yoga, meditation, and gratitude practice.

One-hundred and eleven women participated in the study ( $n_{\text{experimental}} = 56$  and  $n_{\text{control}} = 55$ ). Data on adherence and feasibility were collected throughout the program. Data on study outcomes (including well-being) were collected at baseline and again following completion of the program from both groups. Qualitative data were also collected to help contextualize participant experiences in the program.

The participants adhered to the yoga component of the program exceptionally well. The average participant completed 125% of the yoga classes, 86.58% of the meditations and 88.24% of the gratitude practices. Paired sample *t*-tests were conducted to examine pre- and post-intervention changes in well-being between and within groups. Despite the popularity and positive response to the program - 93.10% of participants in the yoga, meditation and gratitude group (YMG; n=54) reported a perceived improvement in well-being - many of the well-being findings were statistically insignificant. However, significant improvements on disposition and positive relationships were observed among the YMG group; suggesting the intervention had a significant impact on experiencing gratitude in everyday life, as well as on one's positive assessment of personal relationships.

This study lays important groundwork for future and larger scale research to create and subsequently implement successful mind-body health promotion programs for women.

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## Chapter I

### INTRODUCTION

#### **Study Rationale**

Well-being is of paramount importance to overall and mental health in women; it is most simply described as “judging life positively and feeling good” (Veenhoven, 2008, p. 2). Yet, despite this simple definition, the implications of well-being are enormous: indeed, well-being is associated with self-perceived health, longevity, healthy behaviors, decreased mental and physical illness, improved social connectedness and productivity (Centers for Disease Control and Prevention [CDC], 2016). Broadly speaking, research indicates that in addition to investing in efforts that promote well-being, evaluating such promotion efforts are needed to ultimately and more effectively prevent disease.

Mind-body therapies such as yoga and meditation have long been considered health promoting efforts with a well-being emphasis. These mind-body therapies have become increasingly popular in the United States, with some estimates reporting that almost 20% of the US adult population has practiced a form of mind-body therapy in the past 12 months (Buttle, 2015). Furthermore, research confirms that these therapies are flexible, non-invasive, associated with very few adverse events, exceptionally cost-effective (indeed, often free), accessible to a wide variety of people in many different circumstances and environments, do not require any equipment or a lot of space, and can be done at any time of day or night. In addition, yoga and meditation practices, both Complementary Alternative Medicine (CAM) options according to the National Institutes

of Health (NIH) (Williams, Steinberg, & Petronis, 2003), have been extensively studied and found to have a variety of self-reported and observed benefits such as reducing stress, anxiety and tension; enhanced well-being, sleep quality, energy levels, self-confidence, and a quieting effect on the HPA axis (i.e., Fight or Flight syndrome) have also been reported (Cramer, Hall, et al., 2016; Ross & Thomas, 2010; Sharma, Gupta, & Bijlani, 2008).

Yoga is an embodying activity that can provide women with the opportunity to cultivate a favorable relationship with their body (Mahlo & Tiggemann, 2016). An estimated 20.96 million Americans participated in yoga at least once in the past year (Cramer, Ward, et al., 2016). While this statistic shows great promise, there is still a long way to go before the benefits of yoga are realized broadly and in a more consistent among US women. Meditation is also popular among American women, though to a lesser extent, and can be effectively done even with limited time and resources. Roughly 9.3 million Americans meditated in the last 12 months, showing another opportunity for great growth in this realm.

At the same time, the concept of gratitude, “an acknowledgment that we have received something of value from others” (Emmons & Mishra, 2011, p. 248) has one of the strongest links to mental health and life satisfaction of all the personality traits. Research confirms that expressing gratitude can have dramatic and long-lasting benefits in a person’s life (Emmons & Stern, 2013). Gratitude practice has been shown to improve and enhance well-being in a variety of ways including helping people cope with both acute and chronic stressors, boosting self-esteem, facilitating goal attainment and enhancing physical health (Emmons & Mishra, 2011). A simple daily gratitude practice known as “three good things” where one reflects and writes three things down in a journal for which they feel grateful each day has been shown to have a positive effect on well-being (Lai & O’Carroll, 2017).

While we know that participating in a physical activity program has well documented health benefits such as reduced risk of disease and enhanced well-being (Huberty et al., 2008), there are mixed findings when it comes to understanding what helps people, and in particular women, stay engaged with and adhere to an exercise program. Some researchers assert that motivation plays an important role (Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997). Intrinsic motivation is self-determined and elicits personal satisfaction from engaging in the behavior itself; through competence (engaging in challenges and broadening skill sets), and enjoyment (interest in having fun and pursuing stimulating activities). Alternatively, extrinsic motivation is driven by external rewards (i.e., improving appearance) (Ryan et al., 1997). Many researchers note that regardless of initial exercise motives, it is intrinsic motivation that is responsible for long term adherence (Ryan et al., 1997).

Participants were likely to approach the current study with both intrinsic and extrinsic motivations, though it was hypothesized that the personal enjoyment and satisfaction derived from participating would serve to improve adherence to all aspects of the study as it has done in other studies (Huberty et al., 2008). Yoga, meditation, and gratitude practices are, by definition, more internal and elemental in nature, save the physical component of a vigorous asana practice. Similarly, including meditative practices in yoga interventions seems to be critical for obtaining significant psychological symptom benefits (Holger Cramer, Lauche, Langhorst, & Dobos, 2013). The current proposal aims to multiply the benefits of these three practices; we hypothesized that the combination of a consistent yoga, meditation and gratitude practice would enhance well-being in adult women ages 18-65.

The World Health Organization (WHO, 2014) notes that mental health is one of the Top Ten concerns for women. Helping women understand and address mental health issues is vital (Bustreo, 2015). Additionally, nurturing self-compassion may encourage positive health behaviors, partly due to a link to adaptive emotions (Sirois, Kitner, &

Hirsch, 2015). Self-compassion is an integral piece of well-being, consisting of three principal elements: self-judgment versus self-kindness, isolation versus common humanity and over-identification versus mindfulness (Hall, Row, Wuensch, & Godley, 2013). People experiencing high self-compassion, describe lower levels of psychological suffering including anxiety, depression, and stress (MacBeth & Gumley, 2012), in addition to beneficial qualities such as sensed competence, intrinsic motivation and life satisfaction (Neff, 2003).

The current research field includes an abundance of research on yoga, meditation and gratitude practices, though there is no program that effectively combines all three. In this dissertation, an integrated, multi-intervention approach was proposed to promote and enhance well-being among women (McGuire, 2012). Specifically, this study developed, implemented, and evaluated a comprehensive health promotion effort for women that integrated elements of yoga, meditation, and gratitude practice, and that facilitated adherence to this physical activity program in an effort to ultimately and effectively promote well-being.

### **Specific Aims**

1. Develop a yoga, meditation, and gratitude intervention designed to enhance well-being in women.
2. Assess feasibility of the yoga, meditation, and gratitude intervention, as well as participants' adherence to each program component.
3. Assess changes in well-being from pre- to post-intervention, as captured by responses to the Ryff Scale of Psychological Well-Being (Medium Form), Personal Wellbeing Index and the Self-Compassion Scale–Short Form (SCS-SF); draw comparisons to the control group.



4. Report on qualitative data describing characteristics of the target population including their interests, behaviors and needs regarding well-being.

This document provides a thorough overview of issues surrounding women's health including the need for enhancing well-being in women, the critical importance of health promotion and preventative health, the myriad benefits of yoga, meditation and gratitude practices, as well as a discussion about their relationship to and implications for women's health. An in-depth review of the current literature base as it pertains to interactions between yoga, meditation and gratitude, and the effects of these practices on well-being is also included. A thorough description of a proposed research study follows, which is designed to examine a yoga, meditation and gratitude intervention to enhance well-being in women; this includes study design, measurements and a full data management and analysis plan. Comprehensive results and an in-depth discussion follow. There is also a complete list of references and several appendices.

## Chapter II

### LITERATURE REVIEW

#### **Women's Health and Mental Health**

Women accounted for 50.7 percent of the 307 million people living in the United States in 2009 (U.S. Department of Health and Human Services [DHHS], 2011). The benefits of consistent physical activity are numerous, and include prevention of obesity and chronic diseases, and promotion of psychological well-being (DHHS, 2011). We know that women are not as likely as men to engage in regular physical activity, and the portion of women that do exercise drops with age from 38% of women age 18-25 exercising to only 12% of women 75 and older. Women of color, low income and low education are more likely to report low levels of physical activity (DHHS, 2011). Low activity levels can lead to an array of health problems for this population.

On average, women live five years longer than men, yet they report more physically and mentally unwell days than men. In 2007–2009, an average of 4.0 days per month for unwell physical health and 3.9 days per month for unwell mental health were reported for women, in contrast to men reporting 3.2 physically unhealthy days and 2.9 mentally unhealthy days (DHHS, 2011).

The World Health Organization (WHO) defines health as “a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity (WHO, 2014, p. 2). Facilitating the adoption of healthy lifestyles early on is essential to a long and healthy life (Bustreo, 2015). Mental health; defined as a “state of

well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community” (WHO, 2014, p. 1), is one of the Top Ten concerns for women as defined by WHO. Helping women understand and address mental health issues is vital (Bustreo, 2015). Psychological health is more than the absence of psychological troubles; it should instead include favorable traits such as positive affect, life purpose and social contribution (Sheeran, Conner, & Norman, 2001). Indeed, eliminating negative qualities, but not adding positive ones, will often create, at best, intermediate health (Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). These are important factors to consider when developing programs to enrich mental health in women.

WHO (2018) suggests that all healthy adults (age 18-65) participate in moderate-intensity aerobic activity (e.g., brisk walking) five days a week for 30 minutes per day, or vigorous aerobic physical activity (e.g., jogging) three days a week for 20 minutes per day. Doing just two yoga classes each week amounts to somewhere between 120 and 180 minutes of activity depending on the class length (60 or 90 minutes); thereby satisfying (or almost satisfying) the physical activity requirements each week.

An improvement in women’s health status calls for better use of preventive health care services and behaviors; improved understanding of current issues facing modern women can help those in the health care field expand the use of preventative services and empower women to make educated choices concerning their health (Kushner & Ange, 2005). Integrated mind body practices such as yoga, meditation and gratitude have myriad benefits for women of all ages and are discussed in great detail in the pages that follow.

## **Conceptual Framework; Health Promotion**

Health promotion is a way for people to increase control over their own health and well-being through programs and initiatives designed to address and prevent the underlying causes of poor health, rather than simply focusing on treatments and cures (WHO, 2018). Health promotion strategies within public health differ from the medical paradigm approach as there is a goal of disease prevention and promotion of positive health (not treatment of illness), emphasis on the community (not individual patients) and an approach to encourage the environmental and behavioral changes needed to promote community health (Kar, Pascual, & Chickering, 1999). Addressing the barriers that women experience to exercise—lack of time, monetary costs, limited access to facilities, child care, and safe spaces (Kushner & Ange, 2005) —may further help improve exercise adherence and health outcomes for this population.

There are three key elements of health promotion: health must be central in government policy; people need to have knowledge, skills and opportunities to make healthy choices, and there must be a strong leadership presence at the city and community level (WHO, 2018). Programs that begin on a small scale can have a positive widespread impact; from “healthy cities evolve healthy countries and, ultimately, a healthier world” (p. 5).

Empowerment, or gaining control over issues and problems that affect women most, takes place at three different levels, psychological, community and organizational. The goal of an empowerment movement is to enable the powerless to take proactive action to prevent threats and promote positive aspects of their lives (Kar et al., 1999). “Community empowerment, especially the empowerment of women”, is critical to successful health promotion programs that affect quality of life and health, especially in poor communities (p. 1433).

The federal and state governments, academia, private sector, and communities have all implemented a variety of programs to enhance health promotion and prevent disease for women. Use of such preventive health services is critical to improving women's long-term health status (Kushner & Ange, 2005). Mind-body fitness programs combine physical activity and mindful awareness of self, breath, energy and self to promote health and may result in therapeutic effects distinct from traditional fitness programs (Collins, 1998). Empowering women with knowledge, access to health programs and a deeper and more complete understanding of their bodies, along with improving well-being and promoting overall health may lead to preventative health advances, and has the potential to proactively and dramatically change women's lives.

## **Yoga, the Practice**

### **Background of Yoga**

Yoga is an ancient discipline that is often referred to as a moving meditation; with the ultimate goal of achieving union, and balance of mind, body and spirit (Iyengar, 1979). Yoga, Sanskrit for *union* (Khalsa, Shorter, Cope, Wyshak, & Sklar, 2009), is comprised of eight features called limbs: *yama* (universal ethics), *niyama* (individual ethics), *asana* (physical postures), *pranayama* (breath control), *pratyahara* (control of the senses), *dharana* (concentration), *dhyana* (meditation), and *Samadhi* (bliss) (Iyengar, 1979). Yoga has been a popular practice in India for thousands of years, and is now becoming increasingly more prevalent in the Western world (Iyengar, 1979). In the West, *yoga* typically refers to the physical *asana* practice and sometimes the inclusion of *pranayama* and meditation; the other five limbs are often neglected.

There are many different forms of yoga, each with unique approaches and philosophies which vary widely according to the postures, room temperature, *pranayama* practices, class sequencing and difficulty level (see Appendix A). Yoga often includes

some combination of breath awareness, relaxation methods, meditation, music, calm atmosphere and/or dim lighting, which are used to achieve balance, well-being and ultimately, mind-body union (Bryan, Pinto Zipp, & Parasher, 2012).

Yoga has been extensively studied and reported on in the literature for women's health issues and a variety of psychiatric disorders such as depression, anxiety and schizophrenia, cancer, obesity, pre and post-partum health, multiple sclerosis and asthma. The practice of yoga is cost efficient and non-invasive, there are few adverse events associated with the practice, high adherence rates and the potential for a positive synergistic effect on mind and body well-being (Cramer, Ward, et al., 2016). Further, yoga is considered a Complementary and Alternative Medicine (CAM) practice; in 2007, approximately 38% of American adults used some form of CAM, and 97.6% of them reported these therapies as helpful. Yoga is among the most widely utilized form of CAM, along with herbal supplement, manipulation and massage (Evans et al., 2018).

### **Practitioners of Yoga**

Cross-sectional data from the 2012 National Health Interview Survey Family Core, Sample Adult Core, and Adult Complementary and Alternative Medicine (NHIS) questionnaires (N=34,525) were used to study the frequency and predictors of yoga use in a nationally representative sample of the U.S. population (Cramer, Ward, et al., 2016).

The NHIS study showed that 13.2% of the sample (representing 31 million US adults) had ever practiced yoga in their lifetime; of these, 67.3% had practiced within the past 12 months (~ 20.96 million U.S. adults). Lifetime yoga practitioners were more likely younger, non-Hispanic White females that were college educated, higher earners and in better health than their counterparts who had never practiced yoga. Those who practiced in the last 12 months, attended yoga classes (51.2%), used breathing exercises (89.9%) and meditation (54.9%) (Cramer, Ward, et al., 2016).

Findings from the 2012 NHIS indicate that the prevalence of yoga use among the U.S. general population has increased markedly over previous decades. We know that yoga use is on the rise, with an estimated 13.2% of U.S. adults having ever practiced in 2012, versus 7.5% in 1998 (Cramer, Ward, et al., 2016). As such, there is an enormous opportunity to further and more efficiently promote both the overall and mental health benefits of a yoga practice, especially to women who are already interested in and in many cases, practicing yoga already.

Many studies note that people are using the practice to benefit their general health and well-being; this group subsequently has more positive assessments of these outcomes. In the 2012 study by Cramer et al. (Cramer, Ward, et al., 2016), yoga was practiced primarily to benefit general wellness, disease prevention, boost energy and/or immune function, and to relieve health problems associated with back pain, stress and arthritis. In a study by Birdee and colleagues (2008), yoga practitioners were significantly ( $p = .005$ ) more likely to report their health as good, very good or excellent (95%), than those who did not practice in the past year (87%). Further, Sibbritt, Adams, and van der Riet (2011) found that women who often used yoga reported better general health than their counterparts who rarely did. More women need to know about the powerful implications a consistent yoga practice can have on their lives. There are many ways to accomplish getting the word out in a more widespread manner, though additional research needs to be done to determine best practices. Encouraging word of mouth from friends and relatives, and educating those in clinical settings so that practitioners suggest yoga as a preventative health and an alternative/concomitant treatment can be especially helpful.

### **Medical Benefits of Yoga**

When comparing the effects of yoga and exercise in both healthy and unhealthy populations, studies show that yoga may be as successful as or even better than exercise

at improving several health-related outcome measures. In a thorough review by Ross and Thomas (2010), many of the studies found that yoga was as effective as, or superior to exercise on many outcomes.

There are several theories regarding how and why yoga has a positive therapeutic effect on such a wide variety of conditions. A mounting body of research suggests that some yoga practices may improve physical and mental health through a quieting effect on the hypothalamic–pituitary–adrenal (HPA) axis and the sympathetic nervous system (SNS). The HPA axis and SNS are triggered in response to a stressor (physical or psychological) that precipitates a cascade of behavioral, psychological and physiological responses, primarily as a direct result of epinephrine and norepinephrine flooding the system. Often referred to as the classic fight or flight syndrome, this response mobilizes energy needed to fight the stressor. With time, repeated firing of the HPA axis and the SNS produce an ever-present state of hypervigilance; resulting in dysregulation of the system and a host of diseases such as autoimmune disorders, cardiovascular disease, depression and obesity (Ross & Thomas, 2010).

Certain yogic exercises are thought to create a shift toward parasympathetic nervous system dominance, possibly via direct vagal stimulation. Yoga may correct a sluggish parasympathetic nervous system (PNS) and gamma amino-butyric acid (GABA) system. Further, allostatic load may be minimized along with any potential damage from an overtaxed and poorly functioning HPA-SNS stress response (Ross & Thomas, 2010). Irrespective of the specific pathophysiologic pathway, yoga has been shown to have immediate positive effects such as reducing anxiety and improving social, emotional and spiritual well-being (Ross & Thomas, 2010).

Studies also indicate that yoga lowers plasma rennin, salivary cortisol, and norepinephrine and epinephrine. Yoga decreases inflammation markers such as high sensitivity C-reactive protein, interleukin-6<sup>14</sup> and lymphocyte-1B (Ross & Thomas, 2010). Yoga has a significant impact on lowering heart rate and reducing both systolic



and diastolic blood pressure. Yoga may reverse the deleterious influence of immune system stress by increasing levels of immunoglobulin A and natural killer cells. Yoga improves immune system function and decreases inflammation; there are also benefits for improving mental health and reducing depression and anxiety. Yoga improves symptoms related to chronic health conditions including type 2 diabetes, cardiovascular disease, metabolic syndrome and cancer (Ross, Friedmann, Bevens, & Thomas, 2013).

Qualitative data suggest that yoga enhances physical confidence, improves self-care and increases energy. Some studies have found that those with a regular yoga practice of 4+ years had less weight gain and increased output of energy through non-yoga physical activity in comparison to those with no yoga practice (Bryan et al., 2012).

Heated styles of yoga, such as Bikram yoga and hot vinyasa, boast some impressive benefits (Mace & Eggleston, 2016). Among the most common health benefits of hot yoga reported in Mace's sample were improved flexibility (63%), enhanced mood (58%), increased fitness levels (43%), and increased stamina (42%). Notably, a little over half of the participants reported adverse events including dizziness (60%), light headed (61%), nausea (35%), and dehydration (34%) (Mace & Eggleston, 2016), indicating that some might want to take caution when beginning a hot yoga program.

### **Emotional and Spiritual Benefits of Yoga**

Mental health is a critical component of women's overall health, indeed concerns surrounding mental health rate among the top ten health concerns for women according to WHO (2014). The existing literature base suggests that psychological problems including stress, anxiety and depression can benefit from a yoga practice (Kuntsevich, Bushell, & Theise, 2010). Improvements in overall well-being, happiness and life satisfaction can be seen as well (Woodyard, 2011).

There are known neurochemical differences between anxiety and depression; though recent studies suggest they exist on a continuum and are overlapping conditions

(Hranov, 2007). Current treatment methods including selective serotonin reuptake inhibitors (SSRI) are not beneficial for all individuals (Howland, 2006); these medications have been linked to harmful side effects such as diabetes and other metabolic disorders which can reduce quality of life and medication compliance (McIntyre et al., 2010). Safer and more effective treatments are needed to address mood disorders. Additional research is called for to assess the feasibility of yoga and other mindfulness-based practices in the prevention and treatment of these psychological disturbances, both in conjunction with and replacing prescribed medications.

Approximately 350 million people are estimated to suffer from depression (WHO, 2014). Stress related disorders including anxiety and depression are a top source of disability worldwide; antidepressants and other current treatment modalities are not always effective for everyone. Evidence suggests that yoga's mood-enhancing properties may be related to a calming effect on physiological stress and inflammation as discussed above, and which are often associated with psychological and emotional disorders (Pascoe & Bauer, 2015).

Anxiety is known to be the single most predictor of depression onset (Hranov, 2007; Mathew, Pettit, Lewinsohn, Seeley, & Roberts, 2011). Amazingly, meta-analyses and other review literature indicates that yoga and meditation therapies are *as effective as* classical antidepressants in the treatment of depressive and anxious disorders (D'Silva, Poscablo, Habousha, Kogan, & Kligler, 2012). Other research suggests that yoga can be beneficial for mental health and can improve somatization; even potentially preventing the occurrence of psychosomatic symptoms in healthy women (Yoshihara, Hiramoto, Oka, Kubo, & Sudo, 2014). Additionally, in a study by Rocha et al. (2012), yoga practitioners showed enhanced memory performance, as well as psychophysiological improvements; suggesting that a regular yoga practice can have a beneficial effect on quality of life and cognition in health individuals.

## **Yoga as an Agent of Health Promotion and Health Maintenance**

Yoga can be an effective tool to use as a health promotion strategy in the prevention and management of chronic disease, as suggested by Alexander, Innes, Selfe, and Brown (2013), with study results indicating that a yoga practice leads to improved physical function, enhanced mental and emotional states, better quality sleep and other lifestyle improvements. Mind-body fitness programs may be effective in the battle against physical inactivity (Bryan et al., 2012).

Modern yoga often seamlessly fuses postures, breathing techniques, ethics, and meditation. This creates a uniquely distinctive practice with a variety of tools offered for practitioners to increase self-regulation; i.e., efforts to monitor and/or manage one's responses and impulses in the pursuit of a specific goal (Baumeister, Vohs, & Tice, 2007). This enhanced 'tool kit' for modern day women to utilize in the face of daily stress and anxiety could be very beneficial specifically in improving mental health and well-being.

## **Meditation, the Practice**

### **Background of Meditation**

Meditation is the "art of being serene and alert in the present moment, instead of constantly struggling to change or to become" (Deshmukh, 2006, p. 2239); this mind-body practice originated in the ancient Vedic times of India, dating back more than 3,000 years. The term 'meditation' is used to describe a wide variety of distinct techniques and intentional practices which ideally lead to heightened awareness and a more deeply connected sense of self (Sharma et al., 2008). Meditation is one of the top five most frequently used CAM practices in the US according to the 2002, 2007, and 2012 NHIS surveys (Cramer, Hall, et al., 2016) it is also one of the healing modalities in the Ayurveda (Science of Life) tradition (Sharma et al., 2008).

Mindfulness, a term well known in the Buddhist tradition where it is an integral part of the eightfold noble path, is a mind-body practice developed by Jon Kabat-Zinn in the 1970s (Buttle, 2015). The current working definition is “paying attention in a particular way: on purpose, in the present moment, and non-judgmentally” (Kabat-Zinn, 1994, p. 22). A popular form of meditation, mindfulness employs deliberate intention to clearly focus on and notice each individual experience, a noticeable distinction from usual levels of consciousness, and an attitude of kindness, curiosity, patience and openness (Grossman, Niemann, Schmidt, & Walach, 2004; Hofmann, Grossman, & Hinton, 2011).

A mindfulness practice typically consists of focused attention on an object such as the breath. Simultaneously, one monitors their thoughts to detect and bring awareness to a wandering mind, and repeatedly brings it back to the object (breath) without judgment. The practitioner eventually develops the skill and ability to observe fluctuations of the mind in a calm and open manner, and in this way, may have insights into the causes of behaviors and potential suffering (Davidson, 2010; Gunaratana & Gunaratana, 2011).

Mindfulness-based intervention studies (e.g., mindfulness based stress reduction—MBSR, and mindfulness based cognitive therapy—MBCT), have become increasingly popular, and have led researchers to question the intellectual processes that trigger the physical and mental health benefits of mindfulness practices. Recent studies include inquiries on attention, memory and regulation of emotion, behavior and psychology, and also studies designed to better understand secular and spiritual forms of mindfulness/meditation (Buttle, 2015; Hofmann et al., 2011).

MBSR is a specific, eight-week training system which centers on mindfulness meditation; it is a secular program that teaches people how to use their resources to skillfully respond to stress, pain, and illness (Davidson, 2010; Kabat-Zinn, 1994).

There are many types of meditations to practice including mindfulness, loving kindness or metta meditations, compassion meditations, body scans, meditations using imagery, sound, scents, guided meditations and so forth.

### **Practitioners of Meditation**

In addition to studying the yoga habits of Americans, Cramer also published information on the meditative behaviors for the same group in the 2012 NHIS survey (n = 34,525). Five and two-tenths percent of respondents had ever meditated, and 4.1% (representing 9.3 million U.S adults) had done so in the past 12 months. In comparison to non-meditators, those who meditated at least once in the past 12 months were more likely to be White non-Hispanic females living in the West, between the ages of 40-64 years and at least college-educated. They are more likely single, smoking, consuming alcohol, physically active and diagnosed with at least one chronic illness. Mental health problems topped the list as the most important reason for meditating, specifically to reduce stress and/or relax (89.4%), to benefit their emotional health (86.9%), enrich overall wellness (76.2%), improve sleep (69.3%), boost energy (60.0%), and enhance memory or concentration (50.0%). The top health problems for which people used meditation were anxiety (29.2%), stress (21.6%), and depression (17.8%), with 63.6% reporting that meditation helped a great deal with their health issues (Cramer, Hall, et al., 2016).

While it is encouraging to see over  $\frac{3}{4}$  of respondents indicating that they meditated to improve general well-being, the overall percent of the population is very small at just 4.1% having meditated in the past year (Cramer, Hall, et al., 2016). This gap indicates enormous potential to get more US adults, and women in particular as they are more likely to engage in this behavior in the first place, to establish and reap the benefits of a meditative practice. The self-reported benefits of meditation from those with a practice in the past 12 months are very positive, with almost 64% of respondents indicating that meditating ameliorated their medical issues a great deal (Cramer, Hall, et al., 2016).

Cramer et al note that only 34.8% of respondents stated discussing their meditation practices with a physician; with the majority of respondents (63.8%) noting that they omitted this information because their provider did not explicitly ask about it (Cramer, Hall, et al., 2016). Health professionals can encourage this type of self-care and affirm their commitment to this holistic practice by asking patients about their meditation usage (Bonadonna, 2003; Kemper, Powell, Helms, & Kim-Shapiro, 2015).

Researchers can build on the momentum that women have with meditation, and educate and encourage more women to develop a meditative practice. As more meditators reside on the West coast, there is a real opportunity to make meditation more mainstream on the East coast. The literature indicates a great need for women to proactively utilize meditation as a form of health promotion and/or maintenance. Interestingly, only 7.9% of respondents reported that associated costs were covered by health insurance (Cramer, Hall, et al., 2016), suggesting a need for this to be further reviewed in light of the potential for positive, medication-free outcomes. Information and instruction was most likely to be obtained from books, magazines and newspapers (41.7%) and the internet (30.6%) (Cramer, Hall, et al., 2016).

### **Benefits of Meditation**

Meditation is known to be a generally safe practice with very few reports of adverse outcomes from engaging in the practice. Generally speaking, meditation is known to release accumulated stress, improves energy and positively affects overall health (Cramer, Hall, et al., 2016).

To date, many studies have found a positive effect of meditation on a variety of conditions including stress, anxiety, depression, hypertension, pain (both physical and psychological), memory, insomnia, autoimmune disorders, irritable bowel syndrome and symptoms related to epilepsy, premenstrual syndrome and menopause (Cramer, Hall, et al., 2016; Sharma et al., 2008), many of which directly, and importantly negatively, affect

women ages 18-65. Physiological benefits such as lower blood pressure, heart rate, cortisol, and epinephrine have also been confirmed by research (Cramer, Hall, et al., 2016; Sharma et al., 2008). Meditation practices can have a positive effect on chronic illness, and can act as a primary, secondary, and/or tertiary prevention strategy.

Meditation may combat the aging process by increasing the gray matter in the brain which is known to decrease with age. Meditators were found in one study to be faster at completing all tasks; this was hypothesized to be related to meditation's effect on the executive attentional network. Sympathetic nervous system overstimulation has been found to decrease with meditation, referring back to the HPA axis and SNS involvement in 'fight or flight.' Meditation has been shown to reduce cholesterol levels and aid in smoking cessation. A randomized controlled trial conducted by Chan and Woollacott (2007) studied meditation vs health education on 201 African-American men and women with coronary heart disease; at 5 years follow-up, deaths, heart attacks and stroke were reduced by 48% in the meditation group, along with a significant decrease in blood pressure and psychosocial stressors.

Meditation is also known to turn on the relaxation response (RR); a term coined by Harvard Medical School researcher Herbert Benson in the 1970s. RR is a counterpart to the stress response (SR). Benson's method to turn on the RR is straightforward; one sits comfortably and quietly with eyes closed and breathing through the nose and becoming aware of the breath for about 10-20 minutes—without judgment. This simple practice seemed to reverse the physical reactions typically seen in response to stress stimuli (Buttle, 2015). Further research is needed to more fully understand the myriad means by which meditation works to provide physiological and psychological benefits.

## Gratitude

### Background of Gratitude

Gratitude is “an acknowledgment that we have received something of value from others” (Emmons & Mishra, 2011, p. 248); a perception that one is the recipient of a personal benefit that was not “intentionally sought after, deserved, or earned but rather because of the good intentions of another person” (Emmons & McCullough, 2003, p. 847). The word gratitude comes from the Latin *gratia* (favor), and *gratus* (pleasing) (Emmons & McCullough, 2003). Gratitude is well known as a universal human quality, a common thread of human nature experienced and conveyed by nearly all people and cultures across the world (Emmons & Stern, 2013).

Gratitude may be felt during interpersonal exchanges when one acknowledges receiving something of value from another, an appreciation for the beauty of nature, or perhaps an awareness and appreciation for the gifts in one’s own life (Emmons & Stern, 2013). Gratitude has one of the strongest associations to mental health and life satisfaction of any personality trait, even more so than hope, compassion and positivity. Positive emotions such as happiness, love, positivity and joy are experienced on higher level by grateful people. The practice of gratitude protects people from the negative consequences of greed, envy and resentment. Indeed, grateful people are better equipped to cope with stress, recover more quickly from illness and have enhanced physical health; gratitude is “incompatible with negative emotions and pathological conditions” (Emmons & McCullough, 2003, p. 848).

One’s capacity to notice, appreciate and relish one’s life is a critical determinant of well-being. The consistent practice of gratefulness may lead to improved psychological and social function (Emmons & McCullough, 2003).



## **The Gratitude Practice**

Gratitude has been scientifically studied as an emotion through asking people to cultivate gratitude through journaling exercises (Emmons & McCullough, 2003). These interventions have focused primarily on having people recall and record events for which they feel grateful; important health benefits and improved mood were found to follow grateful thinking in this way. A daily gratitude journal has been shown to be an effective tool for people to focus on and experience gratitude in a variety of research studies; prompting such beneficial outcomes as improved alertness and energy, enthusiasm and determination. Others have reported improved sleep quality and increased exercise time (Emmons & McCullough, 2003). Research shows that those randomly assigned to maintain a weekly gratitude journal felt better about their lives, experienced less physical discomfort, and were more optimistic about the days to come than those who recalled and recorded hassles or neutral events upcoming week compared with those who recorded hassles or neutral life events (Emmons & McCullough, 2003; Emmons & Stern, 2013). Further, the act of writing serves to translate thoughts into words, which is advantageous over simply thinking the thoughts (Seligman, 2012).

An initial step of a gratitude practice is attention, an awareness of the good that one might normally take for granted; the tuning in to the many reasons to be grateful that already exist. Directing attention in this manner is helpful for blocking out thoughts and emotions that are incompatible with a gratitude practice. Mindful meditations can be an effective means to focus on the desired emotions and sense of appreciation (Emmons & Stern, 2013).

## **Benefits of Gratitude**

Many rigorous and controlled studies have investigated the benefits of gratitude (Emmons & Stern, 2013). These trials have found that a gratitude practice can have dramatic and long lasting favorable effects on a person's life. Lowered blood pressure, better immune function, enhanced happiness and well-being have been detected, as have

increased incidence of helpfulness, philanthropy and collaboration. Gratitude has been shown to reduce risk of depression and anxiety, and lower incidences of substance abuse (Emmons & Stern, 2013).

### **Combination of Yoga, Meditation, and Gratitude**

In 2012, approximately 21 million US adults practiced yoga and over 9 million US adults meditated in the past year; and the numbers are only on the rise today. Yoga, meditation and gratitude are all associated with very few if any contraindications and adverse events, and the potential for physiological, mental, emotional, psychological and spiritual benefit is vast.

Holistic care should integrate mind (thought, perception, will and emotion), body (physical health), and spirit (quest for the divine); further research is needed to fully reveal the dynamics between these relational components (Ng, Yau, Chan, Chan, & Ho, 2005). The mind-body-spirit connection encouraged, supported and taught through these practices is invaluable to overall health and well-being.

Practicing multiple positive psychology interventions (i.e., gratitude practice + optimistic thinking); may be more effective than participating in only one activity (Sin & Lyubomirsky, 2009). The current proposal aims to create such a synergistic effect and multiply the benefits of these three practices. In this way, it is hoped that women can live a full, complete, happy, life from a place of kindness, curiosity, non-judgment and connection to both themselves and one another in a more meaningful way. Further, it is imperative that the medical community acknowledge the holistic healing power of these modalities and encourage women to adopt them as part of their regular lifestyle.

## Exercise Adherence

Regular physical activity is tremendously advantageous to women's health; studies report a reduction in death risk from heart disease, reduction in colon cancer development risk, increases in bone and muscle strength, lowered risk of developing diabetes, lowered body fat, reduced risk of osteoporosis, enhanced strength and agility especially in older women and enhanced psychological well-being (DHHS, 2011). Addressing the barriers that women experience to exercise (i.e. lack of time, access to facilities, child care, safe spaces and finances) (Kushner & Ange, 2005) may help improve exercise adherence and improve health outcomes for this population.

Health promotion efforts and outcomes are often related to how well participants adhere to regular exercise (Ryan et al., 1997). Approximately half of the population who begins an exercise program stops within 3-6 months, before the benefits of the program can be seen, even though it is widely accepted that exercise is beneficial to health. Motivation varies widely among individuals for myriad reasons, yet it is a key component in beginning and maintaining any exercise program (Kim & Cho, 2013).

Intrinsic motivation is self-determined and elicits personal satisfaction from engaging in the behavior itself; through competence (engaging in challenges and broadening skill sets), and enjoyment (interest in having fun and pursuing stimulating activities). Alternatively, extrinsic motivation is driven by external rewards (i.e., improving appearance) (Ryan et al., 1997).

People are often driven by both intrinsic and extrinsic factors; and different activities may attract people with different motivations. In one study of 376 adults, participants guided primarily by extrinsic factors had a negative correlation to hours and length of workouts, while intrinsic motivations led to increased hours of participation, perceived competence and satisfaction with the activity. Additionally, many researchers

note that regardless of initial exercise motives, it is intrinsic motivation that is responsible for long term adherence (Ryan et al., 1997).

## **Well-Being**

### **Background of Well-Being**

Well-being has many definitions; some describe it simply as “judging life positively and feeling good” (Veenhoven, 2008, p. 2). The CDC has not yet reached a consensus, but their definition typically includes the “presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning” (CDC, 2016, p. 4). According to the CDC, well-being is useful for public health for a variety of reasons including the integration of both mental and physical health leading to a more holistic approach to disease prevention and health promotion. Well-being is associated with self-perceived health, longevity, healthy behaviors, mental and physical illness, social connectedness and productivity. Measuring, tracking and promoting well-being can be useful for those involved in disease prevention and health promotion. Of note, having supportive relationships is one of the strongest predictors of well-being, resulting in a significant positive effect on the construct (CDC, 2016). Of note, psychological health is more than the absence of psychological troubles; it should instead include favorable traits such as positive affect, life purpose and social contribution (Sheeran et al., 2001).

Ryff and Singer (1996) detail factors of psychological well-being into the following six categories: autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, and self-acceptance.

- **Autonomy:** The ability to be an independent thinker who internally regulates behavior and is able to reject social pressures to think and behave in a specific

way. Others rely more heavily on the judgments and opinions of others and often conform to societal pressures to think and behave in a specific way.

- **Environmental mastery:** Having command over one's environment and a firm handle on the complexities of everyday tasks and external activities. Alternatively, some may have difficulty dealing with everyday responsibilities and tasks, with a sense of powerlessness over the external world.
- **Personal Growth:** Continued growth, development and improvement with increasing self-knowledge, awareness and a receptivity to new experiences. Others stagnate, may feel bored or disinterested in life with no sense of improvement or development over time.
- **Positive relations with others:** Categorized by pleasant and gratifying relationships, empathy and taking a genuine interest in the welfare of others. Still others may have few close relationships and find it challenging to be empathetic, warm and open; they are often isolated and frustrated in their relationships.
- **Purpose in life:** Goals and purpose, a sense of direction in life, feels there is meaning in life. Alternatively, others may lack meaning, goals, direction, purpose and aims.
- **Self-acceptance:** Associated with a positive attitude toward the self, acknowledging and accepting both good and bad qualities. Others may feel dissatisfaction with the self and with the past, possibly wishing to be different than what they are.

### **Self-Compassion**

Self-compassion is an integral piece of well-being, consisting of three principal elements: self-judgment versus self-kindness, isolation versus common humanity and

over-identification versus mindfulness (Hall et al., 2013). Interestingly, here in the West, compassion is often conceptualized as compassion for others, though Buddhist's believe it is imperative to feel compassion for oneself as well (Neff, 2003).

- Self-judgment vs self-kindness: Being warm and understanding toward ourselves when we suffer or fail vs ignoring our pain and piling on self-criticism.
- Isolation vs common humanity: Suffering is part of the shared human experience—not something that happens to me alone.
- Over-identification vs mindfulness: A balanced approach to negative emotions so that feelings are neither suppressed nor exaggerated.

Self-compassionate people adopt a positive and kind attitude toward themselves when faced with their own failures and inadequacies. As a result of this warm attitude, those high in self-compassion may enjoy enhanced well-being (Zessin, Dickhauser, & Garbade, 2015). People experiencing high self-compassion, describe lower levels of psychological suffering including anxiety, depression and stress (MacBeth & Gumley, 2012) in addition to beneficial qualities such as sensed competence, intrinsic motivation and life satisfaction (Neff, 2003).

Developing theories indicate that self-compassion promotes healthy behaviors, and suggests that self-regulation might be the explanation (Neff & Vonk, 2009). Improving self-compassion may provide benefit as a clinical intervention, perhaps through impacting, and potentially guarding, psychopathology through lessened self-criticism and rumination, but also through enhancing positive mental health with kindness and other positive emotions (Muris & Petrocchi, 2017). Nurturing self-compassion may encourage positive health behaviors, partly due to a link to adaptive emotions (Sirois et al., 2015).

## **Yoga and Well-Being**

Yoga can have an important effect on well-being and is closely associated with enhanced well-being in the current literature base (Bryan et al., 2012). In a recent cross-sectional study of 4,307 randomly selected people from yoga studios across the U.S, Ross et al. (2013) found that the very large majority of participants agreed that yoga improved energy, happiness, social relationships, sleep and weight. The more the participants practiced yoga (in years or in the number of at-home or in-studio classes), the more they believed yoga was beneficial for their health. Interestingly, in another study by Gaiswinkler, Unterrainer, Fink, and Kapfhammer (2015), highly yoga-immersive practitioners reported significantly higher levels of well-being, compared to those who were marginally/moderately yoga-immersive and those who practiced gymnastics. Further, the yoga group showed decreased numbers of psychiatric syndromes.

## **Meditation and Well-Being**

Many research studies suggest a beneficial and positive connection between well-being and meditation. For example, one study included participants suffering from stress and low mood who reported psychological well-being benefits after participating in meditation awareness training. Results showed increases in mindfulness and well-being, and decreases in stress and symptoms, from pre- to post-MBSR. Time spent engaging in home practice of formal meditation exercises (body scan, yoga, sitting meditation) was significantly related to extent of improvement in most facets of mindfulness and several measures of symptoms and well-being. Increases in mindfulness were found to mediate the relationships between formal mindfulness practice and improvements in psychological functioning, suggesting that the practice of mindfulness meditation leads to increases in mindfulness, which in turn leads to symptom reduction and improved well-being (Carmody & Baer, 2008; Shonin, Van Gordon, & Griffiths, 2014).

## **Gratitude and Well-Being**

There are many reasons to believe that gratitude is related – possibly causally – to happiness and well-being. The capacity to notice, appreciate and relish one’s life is a critical determinant of well-being. The consistent practice of gratefulness may lead to improved psychological and social function (Emmons & McCullough, 2003). Research indicates a positive and lasting effect of gratitude practices on physical outcomes, and increased happiness and enhanced well-being (Emmons & Stern, 2013). Gratitude is critical to well-being and good mental health throughout the lifespan, from childhood to old age; there are vast physical, psychological and emotional benefits associated with gratitude (Emmons & Mishra, 2011).

Interestingly, studies show that gratitude can be enhanced through interventions designed for other purposes. Notably, meditation has been found to promote gratitude as a function of mindfulness. Interventions directed at improving the mind body relationship may also help gratitude flourish (Emmons & Stern, 2013).



## Chapter III

### METHODS

#### **Study Design**

The current study, with an experimental study design, evaluated a 30-day yoga, meditation, and gratitude program designed to enhance well-being in women ages 18-65, living in and around Westchester County, NY. Research on a variety of yoga, meditation and gratitude interventions have been previously studied with all ranges of populations, though a comprehensive yoga, meditation and gratitude program has not been studied in a systematic and meaningful way as it relates to well-being in American women.

In an effort to conduct a well-designed study, current best practices were carefully considered. Notably, Greenhalgh, Thorne, and Malterud (2018) identified essential elements of quality research including: originality, appropriate subjects, sensible design, and minimal bias. These tenets are described below as they refer to the current proposed research:

- *Originality*: There is a plethora of research on yoga and meditation and their relationships to a variety of health concerns. Gratitude and related practices are also well studied, each with a strong individual correlation to well-being. This project built upon the existing literature base and identified a very real gap in the literature concerning how a combination of approaches can work to more effectively enhance well-being. A combination of yoga, meditation and gratitude, as seen in the present program, The Balanced Woman, has not been

studied in any systematic and meaningful way as it relates to well-being in American women.

- *Appropriate subjects:* This study was performed on a representative sample of women that currently attend Balance Yoga & Wellness. The breakdown of race and ethnicity is representative of the local population. More research is needed to identify best practices for how the proposed study can best be adapted for alternative populations.
- *Sensible design:* This was a feasible program with a tremendous amount of flexibility for a wide variety of people to participate in. The yoga classes could be performed in a studio or at home, alone or with others; many of these options are completely free of cost. Meditation could similarly be practiced in any number of ways and places; guided or not, in the house, on a train, at the beach, in a parked car etc. ... the possibilities are endless. One could choose to sit and simply watch the breath, though there are numerous free guided meditation applications available on a variety of electronic devices, such as Insight Timer and HeadSpace. Similarly, the gratitude practice took only time, no monetary cost was involved. The study was low to no cost and could be adapted for a variety of situations, including completing the yoga classes through a free streaming system online at home. The study is very easily replicated as well as completely appropriate and adaptable to a wide range of people—different ages, genders, those of varying socioeconomic backgrounds and a variety of health conditions could benefit from implementation of this program. Further, the initial time commitment was only 30 days, so if the program did not resonate with the person, they could easily discontinue knowing that they had not invested an abundance of time, money or attention into a program that was not suitable for them.

The Balanced Woman directly addressed the barriers women most commonly cite to exercise such as scarcity of time, no access to facilities, cost, lack of child care or a safe environment (Kushner & Ange, 2005).

- *Minimal bias*: Minimal bias is the inclination to interpret information or experiences in a way that affirms one's assumptions (Onsomu, 2014). Great lengths were taken to minimize any potential bias, including but not limited to: broadly offering the program to all women at Balance Yoga & Wellness so that there would be no selection bias, as well as including women who were new to the studio; not requiring students to take any specific yoga classes (i.e., ones taught by a specific instructor); choosing a variety of yoga classes for the optional home substitution classes so that all levels, moods and fitness abilities were accounted for (i.e., restorative yoga, gentle yoga, vinyasa flow etc...), as well as a variety of meditations and gratitude suggestions that would not exclude any group of women. Participants were given access to modern day meditation masters from the comfort of their own home through the InsightTimer app. Similarly, for those participating in yoga classes online from home, they had access to yoga gurus with great talent and expertise. Study IDs were assigned so that names were not associated with personal information or outcomes. Those who were waitlisted were given the opportunity to do the full program once the initial study and follow-up period was completed (Day 60  $\pm$  5 days). A primary goal of The Balanced Woman was to approach the research from a fair and inclusive perspective, making it replicable anywhere in the United States for a wide variety of people.

## Setting

This study took place in a yoga studio located in Larchmont, NY called Balance Yoga & Wellness. The eight required yoga classes were completed at the studio; any of the yoga classes offered there would fulfill the yoga requirement. The schedule was found here: [www.balanceyogany.com/schedule](http://www.balanceyogany.com/schedule), and was be given to all students upon study entry.

Participants were also given the option to complete yoga classes in their own home and if necessary, at an outside yoga studio. The Youtube classes below were chosen to give a full variety of options to the students including a class for beginners, power yoga class for those looking for a more physically challenging practice, a gentle restorative class, as well as classes designed to chance self-love and self-compassion. Many of the options below are instructed by well-known and highly respected teachers in the yoga world (i.e., Yoga with Adrienne and the Journey Junkie). Additionally, all of the options below have at least 10,000 views and over 100 positive reviews on YouTube, with the highest being 2.2 million views and 17k positive reviews.

- Complete Beginner Vinyasa Yoga Class (60 min)
- Self-love yoga class—deep full body stretch and tone (50 min)
- Weight Loss Yoga—Total Body Workout (60 min)
- Yin Yoga for flexibility (60 min)
- Restorative Yoga for the upper back, neck and shoulders (50 min)
- Deeply restorative yoga (60 min)
- Power vinyasa flow (60 min)
- Vinyasa flow for flexibility (60 min)
- Chakra yin yoga for emotional healing (60 min)
- Compassion Flow Yoga & Core Strength (60 min)

Participants completed the meditation and gratitude practices on their own, outside of the yoga studio.

### **Recruitment and Informed Consent Procedures**

Participants were recruited from the current list of students at Balance Yoga & Wellness, through online advertisements on Facebook, Instagram, three other social media websites specific to the Larchmont, NY community (MeetUp, NextDoor and Burbio), The Loop, a local online news outlet, and through fliers distributed via partnerships with local community organizations. The current study utilized all marketing approaches to recruit participants.

Potential participants were contacted via email using a recruitment script (see Appendix B) to invite them to participate in The Balanced Woman program. Contact was also made via telephone or in person using the same script. The recruitment script made it very clear that participation in this study was *not* required in order to continue attending classes at the studio, nor would there be any detrimental consequences should they decline participation.

As an incentive for participating in the study, all participants were offered one month of unlimited yoga and pilates at Balance Yoga & Wellness studio beginning December 1, 2018 and ending December 31, 2018 for \$49. A one-month unlimited pass is \$175, representing a \$126 discount from the full price option.

Interested participants that were eligible for the study based on the Inclusion and Exclusion criteria listed below, and demonstrated interest in participating by responding via email, phone, text or in person to recruitment efforts, received a study welcome packet (Appendices E and F) which included program details, contact information, the studio yoga schedule, tips to begin and stick with the practice, a gratitude journal and

other miscellaneous information. Participants were given ample opportunity to ask questions about the study and to carefully review the consent form.

The study protocol was submitted for approval by the Teachers College, Columbia University Institutional Review Board (IRB), and was assigned IRB # 19-067.

### **Inclusion Criteria**

The inclusion criteria for the study participants were as follows:

- Woman between the ages of 18-65 at the start of the study
- Able and willing to attend yoga class at least 2 times per week in the next 30 days
- Able and willing to meditate for 10 minutes at least 5 times per week in the next 30 days
- Able and willing to participate in a gratitude practice for 10 minutes at least 5 times per week in the next 30 days

### **Exclusion Criteria**

The exclusion criteria for the study participants were as follows:

- Male
- Not yet 18 years old, or over age 65 at the start of study
- Not able to commit to twice weekly yoga classes in the next 30 days
- Not able or willing to commit to 10 minutes of meditation at least 5 times per week in the next 30 days
- Not able or willing to commit to 10 minutes of gratitude practice at least 5 times per week in the next 30 days
- Pregnant

## **Sample/Participant Description**

Women age 18-65 years were approached to participate in the study via email, phone or in person, via a recruitment script that was approved by the IRB as well as through fliers and outreach to local community groups.

Women were randomized to Group 1 (experimental group) or Group 2 (waitlist control group) through Random.org (<https://www.random.org/lists/>), an online list randomizer. Both groups had access to unlimited yoga for 31 days at Balance Yoga & Wellness. Group 1 also had access to the meditation and gratitude components beginning on Day 1, Group 2 was given access to the exact same meditation and gratitude components on Day 60.

## **Study Components**

### **Yoga Component; Exercise Adherence**

The twice weekly yoga class requirement was assessed as the measure of exercise adherence, an important study construct. Participants chose from any variety of yoga classes at Balance Yoga & Wellness, including, but not limited to, vinyasa flow, yin, restorative and Bikram. Please see Appendix A for a complete description and glossary of terms. The studio schedule is located here: [www.balanceyogany.com/schedule](http://www.balanceyogany.com/schedule). Participants also were permitted to do yoga classes from home via the following pre-selected classes on YouTube ([www.youtube.com](http://www.youtube.com)). Participants were contacted if they did not meet the yoga class requirements to ensure they were aware of and knew how to use the at-home yoga options listed below:

- Complete Beginner Vinyasa Yoga Class (60 min)
- Self- love yoga class—deep full body stretch and tone (50 min)
- Weight Loss Yoga—Total Body Workout (60 min)
- Yin Yoga for flexibility (60 min)

- Restorative Yoga for the upper back, neck and shoulders (50 min)
- Deeply restorative yoga (60 min)
- Power vinyasa flow (60 min)
- Vinyasa flow for flexibility (60 min)
- Chakra yin yoga for emotional healing (60 min)
- Compassion Flow Yoga & Core Strength (60 min)

### **Meditation Component**

The meditation component of The Balanced Woman focused on mindfulness meditation; a form of mental training which draws attention to the present moment through a non-judgmental lens (Kabat-Zinn, 2009), along with meditations carefully chosen for their messaging designed to enhance happiness, gratitude, self-compassion and well-being such as loving kindness and compassion meditations. Notably, an informal practice where people were being mindful of their surroundings or eating mindfully, etc. was not included as ‘meditation’ for the purposes of this study.

Participants were more than welcome to engage in those practices, though only the time spent formally meditating with the selected Insight Timer ([www.insighttimer.com](http://www.insighttimer.com)) guided meditations counted toward the requirements for the study.

Participants were sent an email inviting them to The Balanced Woman group on Insight Timer and given instructions on how to download the app onto their smartphone. Additional help was provided with this step as needed. All required meditations were accessed through this group. Interaction through questions, comments and general support was optional in this space as well.

Insight Timer boasts more than 3.3 million meditators and is rated the top free meditation app on the Android and iOS stores. It has 4.7 stars out of a possible 5 stars from 2,300 online reviews. Headspace is another very well-known meditation app,



though the free guided meditation options are fewer than Insight Timers; therefore, the meditations were provided through Insight Timer.

Guided meditations, each about ten minutes, were chosen from Insight Timer, available on The Balanced Woman Worksheet (Appendix C), uploaded onto the Insight Timer app and emailed weekly to the study participants. Participants found 10 minutes of uninterrupted time (mornings were often popular), logged on to the Insight Timer app, located and listened to the guided meditation. Of note, Day 1 included 2 five-minute introductory meditations for people new to a meditation practice, or a refresher to those with an existing practice. Five meditations were offered each week, one for each weekday. Participants were given the option not to meditate on the weekends, to repeat a previous meditation, or to perform their own meditation.

### **Gratitude Component**

Evidence to date suggests that gratitude is effective as a psychotherapeutic intervention. Gratitude is a critical, undervalued quality in clinical psychology with a strong causal relationship to well-being (Emmons & Stern, 2013).

Gratitude interventions typically require people to regularly recall and record events for which they feel grateful. A daily gratitude journal has been shown to be an effective tool for people to focus on and experience gratitude in a variety of research studies; prompting such beneficial outcomes as improved alertness and energy, enthusiasm and determination (Emmons & McCullough, 2003).

A common example of gratitude journaling, and the one that The Balanced Woman utilizes, is “Three Good Things,” in which people are asked to reflect and then record three things for which they feel grateful for in a diary or journal. This approach is the most studied, has the potential to be utilized in clinical settings, can be done easily anywhere and without much time investment. Participants often report that the practice is enjoyable and that the technique is pleasant and fortifying; many choose to continue the

practice after the intervention is completed (Seligman, Steen, Park, & Peterson, 2005; Wood, Froh, & Geraghty, 2010).

An initial step of a gratitude practice is attention, an awareness of the good that one might normally take for granted; the tuning in to the many reasons to be grateful that already exist. Directing attention in this manner is helpful for blocking out thoughts and emotions that are incompatible with a gratitude practice (Emmons & Stern, 2013). As such, building upon the Three Good Things approach, participants were guided to identifying one specific “thing” to reflect on, record and feel grateful for. In this way bringing attention to a specific attribute to feel grateful for, and also allowing the person to reflect on their own feelings for the remaining two “things.”

The gratitude intentions Guided meditations were available on The Balanced Woman Worksheet (Appendix C) and emailed weekly to the study participants. These gratitude intentions were based directly on wellness constructs. Gratitude intentions consisted of a word or two coupled with a brief description to accompany the intention; they were deliberately short, and fairly general so that participants were able to interpret them and apply them to their day and life in the way that resonated with them individually. Five gratitude intentions were offered each week, one for each weekday. Participants were given the option to not engage in the gratitude practice on the weekends, to repeat a previous gratitude intention, or to choose their own. The following instructions were sent to all participants:

There are many things in our lives, both large and small, that we might feel grateful for, simple everyday pleasures, acts of kindness, personal strengths or people in your life. We might not normally think about these things as gifts, but we want you to think of them that way for this study.

At night before bed, reflect on your day and write down the assigned gratitude intention and add two other things of your own choosing that you are grateful or thankful for. Please take a moment to really savor these gifts and think about their value. (Emmons & Stern, 2013)

The following steps were taken each day by the study participants to fulfill the gratitude practice component of The Balanced Woman:

- Identify the assigned daily gratitude intention from The Balanced Woman worksheet or daily email.
- An initial step of a gratitude practice is attention (Emmons & Stern, 2013). Take a Mindful Minute—i.e., a few slow deep cleansing breaths, and think about how the word(s) relate to the day you have ahead and how they might show up in your life that day.
- Come back to this idea throughout your day, possibly allowing it to guide your activities, thoughts, attitudes, and choices.
- At night before bed, reflect on the offered gratitude intention and then add two other “things” of your own choosing that you feel particularly grateful or thankful for. Record your Three Good Things in one consistent place; on The Balanced Woman worksheet, the journal included in the welcome packet, on their phone, laptop etc.... Participants will not be asked to share any of the information recorded in their journal.

Gratitude was also assessed on the Grateful Disposition Scale (GQ-6); a self-report questionnaire designed to assess the likelihood that people will experience gratitude in daily life. The responses are scored on a Likert Scale ranging from 1 (strongly disagree) to 7 (strongly agree).

## **Data Management and Organization**

### **Qualitative Data**

The following qualitative data were obtained from the women at each of the three surveys; pre-test, post-test and 30-day follow-up. See Appendices D (Pre-Test Survey), E (Post-Test Survey), and F (30 Day Follow-up Survey) for detailed survey questions.

**Pre-test data.**

1. How would you define well-being?
2. What benefits do you anticipate from participating in The Balanced Woman (Yoga + Meditation + Gratitude)?

**Post-test data.**

1. What benefits did you experience from participating in The Balanced Woman?
2. What negatives were there to participating in The Balanced Woman program?
3. In your opinion, what changes would make The Balanced Woman program better?
4. Any other comments, questions, suggestions?

**Pre-test data.**

1. What specifically would make it easier for you to keep a commitment to a regular yoga practice?
2. What specifically would make it easier for you to keep a commitment to a regular meditation practice?
3. What specifically would make it easier for you to keep a commitment to a regular gratitude practice?
4. If you answered yes to the question above, what topic(s) would you like to see the program to zero in on?
5. Any other comments, questions, suggestions?

Once collected, the data were cleaned and sorted. A thematic analysis approach was then employed, as a means to identify, analyze, and report any patterns within the data and to get a sense of the overall predominant themes (Braun & Clarke, 2006). The data were carefully reviewed many times, with notes taken and marks made denoting potential themes in the responses. Based on this preliminary review, the data were then systematically reviewed giving attention to each specific item and coded for as many

themes as possible. This produced an extensive list of codes, which were then carefully reviewed for any potential themes. The resulting themes were reviewed and refined as needed. Lastly, a final comprehensive review of the data were conducted to ensure accuracy and completeness (Braun & Clarke, 2006).

### **Quantitative Data**

All quantitative data collected from participants in both the experimental and control groups, including survey data and adherence data collected via InsightTimer and Constant Contacts were entered into a secure Microsoft Excel database, cleaned, and then exported into R 64-bit version 3.5.1 for further analyses. All participants were assigned a unique alphanumeric study number so that personal and/or identifying information was not connected to their name. Details on the data management process for each source of data are summarized below.

**Yoga/exercise adherence.** Yoga/exercise adherence data were collected via a weekly query from MindBody ([www.mindbodyonline.com](http://www.mindbodyonline.com)), as well as through any correspondence indicating that yoga was done outside of the studio. For any classes done at home from the pre-selected classes on YouTube below, participants were asked to communicate which class they completed to the study's principal investigator (Carolyn Frost) at [Carolyn@balanceyogany.com](mailto:Carolyn@balanceyogany.com). Data were recorded in a secure, password protected, Microsoft Excel database.

**Meditation.** Both the group and friend functions in Insight Timer detail each person's meditation activity. Meditation data were collected weekly from these functions, and were recorded in a secure, encrypted, study database.

**Gratitude practice.** Gratitude practice adherence was captured and tracked through self-report of the practice on The Balanced Woman Worksheet. The women handed the sheet in at the conclusion of the 30-day program. Gratitude practice adherence information was subsequently entered into a secure Microsoft Excel database.

### **Study Data Collection and Recording**

At the conclusion of the 30-day follow-up (Day  $60 \pm 5$  days), all data were carefully reviewed for any incomplete, missing, or inaccurate information and prepared for statistical analysis in R 64-bit version 3.5.1.

Women randomized to the wait list control group were given full access to the complete program at the completion of the 30-day follow-up (Day  $60 \pm 5$  days); only their survey and yoga participation information were collected and reviewed during the initial 30-day study period.

Please see Appendix H for a Flow Chart of Study Data Collection and Recording.

### **Power Analysis**

G\*Power (version 3.1) was utilized to run a power analysis for each of these proposed analyses. For the proposed sample size of  $N = 50$  participants per group (total minimum sample size = 100 participants) and with an alpha level of 0.05, power is 80% to detect a large effect size of  $d = 0.86$ .

### **Data Analysis**

Following the cleaning and organization of the study data, a set of statistical analyses was conducted to respond to each of the proposed dissertation's research questions. Descriptive analysis of the demographic variables was performed. The data on well-being and exercise were also analyzed. Specifically, the proposed study conducted paired sample *t*-tests to examine pre- and post-intervention changes in well-being as captured by responses to the Ryff Scale of Psychological Well-Being (Medium Form), Personal Wellbeing Index and the Self-Compassion Scale—Short Form (SCS-SF). Comparisons were also drawn to the control group.

Results of this study were used to speak to both the feasibility and effectiveness of a comprehensive health promotion effort for women that integrates elements of yoga, meditation, and gratitude practice, to facilitate adherence to this physical activity program. Implications for the promotion of well-being among women via this novel health promotion effort are discussed in Chapter V.

## Chapter IV

### RESULTS

This chapter presents first a summary of the four research questions, followed by a detailed description of the sample demographics and behaviors. Next is a detailed overview of the study findings, which include both quantitative and qualitative data to address the following research questions:

1. Develop a yoga, meditation, and gratitude intervention designed to enhance well-being in women.
2. Assess feasibility of the yoga, meditation, and gratitude intervention, as well as participants' adherence to each program component.
3. Assess changes in well-being from pre- to post-intervention, as captured by responses to the Ryff Scale of Psychological Well-Being (Medium Form), Personal Wellbeing Index, Grateful Disposition Questionnaire and the Self-Compassion Scale—Short Form; draw comparisons to the control group.
4. Report on qualitative data describing characteristics of the target population including their interests, behaviors, and needs regarding well-being.

Sample characteristics, including demographic information and self-reported health and wellness data, were collected throughout the study and are reported in detail below.



## Demographics

Demographic information was collected at pre-test on a total of 111 women: 56 women in the YMG group and 55 women in YO. Overall the groups were quite evenly matched across sub-categories. See Table 1 for full details on each of the categories below.

Table 1. Demographic Information by Group at Pre-test (YMG, YO)

<i>Category</i>	<b>YMG</b>		<b>YO</b>		<i>Category</i>	<b>YMG</b>		<b>YO</b>	
<i>Age</i>	N	%	N	%	<i>Highest level of school</i>	N	%	N	%
18-20	1	1.79%	1	1.82%	High School diploma or GED	5	8.93%	3	5.45%
21-29	7	12.50%	6	10.91%	Some college, no degree	3	5.36%	4	7.27%
30-39	11	19.64%	8	14.55%	2-year college degree	1	1.79%	3	5.45%
40-49	21	37.50%	18	32.73%	4-year college degree	19	33.93%	23	41.82%
50-59	14	25.00%	16	29.09%	Graduate-level degree	28	50.00%	22	40.00%
60+	2	3.57%	6	10.91%	<b><i>Employment status</i></b>				
					Employed, working full-time	31	55.36%	34	61.82%
<b><i>Race/Ethnicity</i></b>					Employed, working part-time	14	25.00%	16	29.09%
American Indian or Alaskan Native	1	1.79%	1	1.82%	Not employed, looking for work	3	5.36%	0	0.00%
Asian/Pacific Islander	4	7.14%	2	3.64%	Not employed, NOT looking for work	8	14.29%	5	9.09%
Black or African American	2	3.57%	3	5.45%	<b><i>Children under 18 living at home</i></b>				
Hispanic	10	17.86%	4	7.27%	None	20	35.71%	28	50.91%
White/Caucasian	35	62.50%	45	81.82%	One	8	14.29%	6	10.91%
Multiple/Other	4	7.14%	0	0.00%	Two	18	32.14%	13	23.64%
					Three	9	16.07%	7	12.73%
<b><i>Relationship status</i></b>					Four	1	1.79%	1	1.82%
Married	38	67.86%	39	70.91%					
Widowed	1	1.79%	0	0.00%					
Divorced	4	7.14%	3	5.45%					
Separated	3	5.36%	0	0.00%					
Domestic Partnership	0	0.00%	3	5.45%					
Single, but cohabitating	2	3.57%	1	1.82%					
Single, never married	8	14.29%	9	16.36%					

### **Age**

The sample of women in this study was largely 40 years and older (69.37%; n=77). YO had almost three-quarters of their population in this bracket (72.73%; n=40); YMG had 37 women 40+ (66.07%). The two groups were well matched across the ages, though YO had 10.91% over age 60 (n=6) as compared to the two women in the YMG group (3.57%). Less than 15% in each group were under the age of 30: YMG (14.29%; n=8) and YO (12.73%; n=7).

### **Race/Ethnicity**

The majority of the sample was White/Caucasian. The YMG group had 35 Caucasian women (62.50%); the YO group was higher with 45 women (81.82%). The Hispanic population was noticeably higher in the YMG group (17.86%; n=10) than in the YO group (7.27%; n=4). There was one person in each group that was an American Indian or Alaskan native (YMG: 1.79%; YO:1.82%), as well as 4 Asian/Pacific Islanders in YMG (7.14%) and 2 in YO (3.64%). There were 2 African American women in YMG (3.57%) and 3 in YO (5.45%). Only YMG had women identify as multiple/other (7.14%; n=4).

### **Relationship Status**

The numbers across groups were fairly well-matched. The large majority of the overall sample was married (69.37%; n=77), equating to 38 YMG women (67.86%) and 39 YO women (70.91%). The next largest group consisted of single women (overall: 18.02%; n=20); both YMG (17.86%) and YO (18.18%) had 10.

### **Highest Level of School Completed**

Overall, this was a very well-educated group. The large majority of women in each group had at least a four-year college degree: 83.93% of YMG women (n=47) and 81.82% of YO women (n=45). A full 50% of YMG women had a graduate degree (n=28), 40% in YO (n=22). The data were very similar across groups.

### **Employment Status**

Overall, the data were well-matched between groups. The majority of women in the sample (58.56%; n=65) were employed and working full time. This number was slightly higher in YO (61.82%; n=34) than in YMG (55.36%; n=31). There were slightly more women who were not employed and not looking for work in the YMG group (5.36%; n=3); there were none in YO. See Table 1 for details.

### **Children under 18 Living at Home**

A little over half of the overall sample had at least one child under the age of 18 living at home (56.76%; n=63). Twenty YMG women (35.71%) and 26 YO women (47.27%) reported no children at home, the largest single category, followed by two children in YMG (32.14%; n=18) and 13 in YO (23.64%). See Table 1 for details.

### **Health Assessment (Self-report)**

Health and wellness information was collected at three time points—pre-test (n=111), post-test (n=112), and at the 30-day follow-up (n=97).

### **Importance of Well-being** (see Table 2)

**YMG.** A full 100% of the women in the YMG group reported that well-being was either extremely important (73.21%; n=41) or very important (26.79%; n=15) at the pre-test visit. One woman at post-test noted that well-being was slightly important but did not indicate this at pre-test or at the 30-day follow-up visit. Of note, the number of women who reported well-being as extremely important began at 73.21% (n=41), went up to 74.14% (n=43) at follow-up, and reached a peak high at the 30-day follow-up visit, with 45 women citing well-being as extremely important (86.54%)—a 13.3% increase in percentage points from pre-test to follow-up.

**YO.** Just shy of 100% of the pre-test YO women reported well-being as extremely important (67.27%; n=37) or very important (30.91%; n=17). One woman reported that well-being was moderately important (1.82%). The number of women reporting well-being as extremely important peaked at the follow-up visit with over ¾ of the women (79.63%; n=43) and leveled off at the 30-day follow-up at 71.74% (n=33); a number slightly higher than it was at pre-test.

**YMG vs YO.** The groups were fairly similar at pre-test, though YMG reported slightly higher numbers in the extremely important category (73.21%; n=41) vs those in YO (67.27%; n=37). At the follow-up visit, those reporting extremely important was slightly higher in the YO group (79.63%; n=43) than in YMG (74.14%; n=43). Notably, the YMG women (86.54%; n=45) rated well-being as extremely important far more often at the 30-day follow-up than those in the YO group did (73.33%; n=33).

Table 2. Importance of Well-Being Across Time Points and Group Assignment (YMG, YO)

<i>Assessment</i>	<b>Pre-Test</b>				<b>Post-Test</b>				<b>30-day Follow-up</b>			
	<b>YMG</b>		<b>YO</b>		<b>YMG</b>		<b>YO</b>		<b>YMG</b>		<b>YO</b>	
<i>Importance of Well-being</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<b>Extremely Important</b>	41	73.21%	37	67.27%	43	74.14%	43	79.63%	45	86.54%	33	71.74%
<b>Very Important</b>	15	26.79%	17	30.91%	14	24.14%	10	18.52%	7	13.46%	12	26.09%
<b>Moderately Important</b>	0	0.00%	1	1.82%	0	0.00%	1	1.85%	0	0.00%	0	0.00%
<b>Slightly Important</b>	0	0.00%	0	0.00%	1	1.72%	0	0.00%	0	0.00%	1	2.17%
<b>Not at all important</b>	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

### **Overall Physical Health** (see Table 3)

**YMG.** The number of women reporting that their overall physical health was very good or excellent rose steadily across the visits. At pre-test, 58.93% (n=33) of women reported enjoying at least very good physical health; this number went up slightly at

follow-up (62.07%; n=36) and peaked at the 30-day follow-up visit with just under three-quarters of the women reporting at least very good health (73.08%; n=38). As such, the numbers for women reporting good health declined from 33.93% (n=19) at pre-test to 19.23% at the 30-day follow-up visit (n=10). One person in the YMG group reported poor physical health (1.79%).

**YO.** Physical health was not as straightforward in the YO group. The pre-test value for those reporting excellent physical health was highest at pre-test (23.64%; n=13), with a similar number reporting excellent physical health at post-test 22.22% (n=10) at post-test. Interestingly, those reporting excellent physical health dipped to the lowest at post-test with 14.81% (n=8), before rising back up toward the pre-test numbers with 22.22% (n=10) reporting excellent physical health at the 30-day follow-up. The numbers for very good were fairly consistent across the time points with 45.45% at pre-test (n=25), 46.30% (n=25) at follow-up and 46.67% at the 30-day follow-up visit (n=21).

**YMG vs YO.** YO reported a higher incidence of excellent physical well-being at pre-test (23.64%; n=13) than the YMG group did (16.07%; n=9). YO women reported slightly higher very good physical health (45.45%; n=25) as compared to 42.86% of YMG women (n=24). The follow-up visit showed very similar numbers across groups; including 62.07% of YMG women (n=36) reporting physical health as very good or excellent, and 61.11% of YO women (n=25) reporting the same. At the 30-day follow-up visit, more women in the YO group reported good physical health (n=12; 26.09%) than did the YMG women (19.23%; n=10). This led to a slightly higher reporting for YMG women of very good or excellent physical health (73.08%; n=38) as compared with 67.39% in the YO group (n=31).

### **Bodily Pain in Past Four Weeks (see Table 3)**

**YMG.** The number of YMG women reporting no bodily pain rose steadily from pre-test (n=5; 8.93%), to 13.79% at follow-up (n=8), and reaching a peak at the 30-day

follow-up with 21.15% reporting no bodily pain (n=11). The numbers for very mild bodily pain remained consistent across timeframes. The numbers for mild pain decreased from pre-test (n=14; 25%) to 30-day (N=10; 19.23%); same for moderate pain which decreased from 26.79% (n=15) at pre-test to 19.23% (n=10) at 30-day. One person reported severe bodily pain in each of the time points (1.79%), and one person reported very severe pain at the 30-day follow-up (1.92%).

**YO.** The numbers for mild, moderate, severe and very severe are consistent across timeframes. There is a decrease in YO women reporting no bodily pain at pre-test (n=13; 23.64%), to 14.81% (n=8) at follow-up and dipping to 13.33% (n=6) at the 30-day follow-up. Very mild pain peaked at 44.44% of post-test women (n=24). One person reported severe pain at pre-test (1.82%) and one at 30-day (2.22%), no one reported very severe pain at any of the time points.

**YMG vs YO.** Far more YO women reported no bodily pain at pre-test (n=13; 23.64%) than YMG women (n=5; 8.93%). In all, 54.55% of YO women reported no pain or very mild pain at pre-test (n=30) as compared to 46.43% of YMG women reporting the same (n=35). The numbers across groups had no discernable differences at the follow-up visit. At the 30-day visit, YMG women had a higher rate of reporting no bodily pain (n=11; 21.15%) than did the YO women (n=6; 13.04%); a big deviation from the pre-test comparison where YO women reported higher numbers of no bodily pain than YMG women. 57.69% (n= 30) of YMG women reported no or very mild pain at 30-days, compared to an even 50% of YO women reporting the same (n=23) (see Table 3).

### **Physical Health Problems in Past Four Weeks (see Table 3)**

**YMG.** There was a steady rise in the number of women reporting that any physical health problems were not at all disruptive at pre-test (n=29; 51.79%) to 63.79% (n=37) at follow-up and finally 67.31% (n=35) at the 30-day follow-up. This corresponded to a

steady decrease in not so disruptive problems from 33.93% at pre-test (n=19) to 17.31% at 30-day (n=9).

**YO.** The YO group saw a decrease in the number of women reporting not at all disruptive problems across the time points; the large majority at pre-test noted not at all disruptive (n=39; 70.91%), though this number dropped to 55.56% (n=25) at 30-day.

There was also an interesting increase in the number of women citing somewhat disruptive problems at pre-test (n=3; 5.45%) to 13.33% at 30-day post (n=6).

**YMG vs YO.** The YO group reported far higher numbers of not at all disruptive physical pain at pre-test (n=39; 70.91%) than the YMG group (n=29; 51.79%). This trend reversed at the follow-up visit where 93.10% of YMG participants (n=54) reported not so disruptive or not at all disruptive as compared to 85.19% of YO participants citing the same (n=46). There was a slight dip in these numbers at 30-day, though YMG (n=44; 84.62%) remained higher for those reporting not so disruptive, or not at all disruptive pain than YO (n=36; 78.26%).

Table 3. Physical Health Status Across Time Points and Group Assignment (YMG, YO)

Health Status	Pre-Test				Post-Test				30-day Follow-up			
	YMG		YO		YMG		YO		YMG		YO	
<i>Physical Health</i>	N	%	N	%	N	%	N	%	N	%	N	%
Excellent	9	16.07%	13	23.64%	6	10.34%	8	14.81%	9	17.31%	10	21.74%
Very good	24	42.86%	25	45.45%	30	51.72%	25	46.30%	29	55.77%	21	45.65%
Good	19	33.93%	14	25.45%	20	34.48%	18	33.33%	10	19.23%	12	26.09%
Fair	3	5.36%	3	5.45%	2	3.45%	3	5.56%	4	7.69%	2	4.35%
Poor	1	1.79%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<i>Bodily pain in past 4 weeks</i>												
None	5	8.93%	13	23.64%	8	13.79%	8	14.81%	11	21.15%	6	13.04%
Very mild	21	37.50%	17	30.91%	28	48.28%	24	44.44%	19	36.54%	17	36.96%
Mild	14	25.00%	12	21.82%	12	20.69%	12	22.22%	10	19.23%	12	26.09%
Moderate	15	26.79%	12	21.82%	9	15.52%	10	18.52%	10	19.23%	9	19.57%
Severe	1	1.79%	1	1.82%	1	1.72%	0	0.00%	1	1.92%	1	2.17%
Very severe	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1	1.92%	0	0.00%

Table 3 (continued)

Health Status	Pre-Test				Post-Test				30-day Follow-up			
	YMG		YO		YMG		YO		YMG		YO	
<i>Physical health problems in past 4 weeks</i>	N	%	N	%	N	%	N	%	N	%	N	%
Not at all disruptive	29	51.79%	39	70.91%	37	63.79%	32	59.26%	35	67.31%	25	54.35%
Not so disruptive	19	33.93%	12	21.82%	17	29.31%	14	25.93%	9	17.31%	11	23.91%
Somewhat disruptive	6	10.71%	3	5.45%	3	5.17%	8	14.81%	4	7.69%	6	13.04%
Very disruptive	1	1.79%	1	1.82%	1	1.72%	0	0.00%	2	3.85%	2	4.35%
Extremely disruptive	1	1.79%	0	0.00%	0	0.00%	0	0.00%	2	3.85%	1	2.17%

### Eating Habits (see Table 4)

**YMG.** The number of women reporting eating at least moderately healthy steadily rose from pre-test (n=45; 80.36%) to follow-up (n=51; 87.93%) and peaked at the 30-day follow-up visit with 90.38% of women reporting at least moderately healthy eating habits (n=47). The highest number of extremely healthy eating habits was at the follow-up visit with 24.14% (n=14).

**YO.** The numbers across the time points and categories for eating habits were fairly consistent. The large majority reported moderately healthy eating, peaking at follow-up with 41 women (75.93%). One person (1.82%) reported moderately unhealthy eating at pre-test, but there were no more reports in that category moving forward.

**YMG vs YO.** Here the numbers were consistent across groups at pre-test with the majority in both YMG (n=37; 66.07%) and YO (n=36; 65.45%) reporting moderately healthy eating habits. The same goes for the follow-up visit where the numbers were very close across categories. In the 30-day follow-up, over 90% of YMG women reported at least moderately healthy eating habits (n=47; 90.38%) as compared to 84.78% of the YO group (n=39) reporting the same.



### **Hours of Sleep Each Night** (see Table 4)

**YMG.** The numbers were consistent across time points, with over 60% of women reporting 7-8 hours of sleep a night (pretest: n=36; 64.29%; post-test: n=40; 68.97% and 30-day follow-up: n=36; 69.23%).

**YO.** The majority of YO women also reported about 7-8 hours of sleep a night; with 39 women at pre-test (70.91%), 40 women at post-test (74.07%) and then dipping slightly at the 30-day follow-up with 29 women (64.44%). Two women reported getting 9+ hours each night (4.35%).

**YMG vs YO.** The majority of women in both groups and across time points indicated getting about 7-8 hours of sleep each night.

### **Currently Smoke Cigarettes** (see Table 4)

**YMG.** The large majority do not smoke cigarettes (n=55; 98.21%).

**YO.** The large majority do not smoke cigarettes (n=53; 96.36%)

**YMG vs YO.** No important differences between groups, only 3 total respondents (2.70%) smoke cigarettes.

### **Alcoholic Drinks Each Week** (see Table 4)

**YMG.** Many women do not drink any alcohol at all; these numbers were quite consistent around 30% across the time points. Those drinking one to four drinks each week decreased steadily through the course of the study, with 29 women at pre-test (51.79%), 28 women at post-test (48.28%) and 24 women at the 30-day follow-up (46.15%). As the numbers for nine to twelve drinks each week decreased (10.71% at pre-test to 3.85% at 30-day), there was a rise in those drinking five to eight drinks each week from 7.14% at pre-test to 19.23% at 30-day.

**YO.** The number drinking five to eight drinks steadily increased from 12 at pre-test (21.82%) to 14 at the 30-day follow-up (31.11%). This corresponded to a decrease in the

number of women drinking one to four drinks/week from over half of the women at pre-test (n=28; 50.91%) to 44.44% (n=20) at the 30-day follow-up visit.

**YMG vs YO.** At pre-test, more YMG women (n=17; 30.36%) reported drinking no alcohol than the YO group (n=12; 21.82%). Many more YO women drank five to eight drinks (n=12; 21.82%) than YMG women (n=4; 7.14%), and more YMG women drank nine to twelve (n=6; 10.71%) more than YO (n=2; 3.64%). At follow-up there were slightly more YMG women who drank no alcohol (n=17; 29.31%) than YO women (n=13; 24.07%), and more YO women (n=14; 25.93%) drinking five to eight drinks than YMG women (n=9; 15.52%). At the 30-day follow-up, more YMG women reported no alcohol consumption (n=16; 30.77%) than the YO group (n=9; 19.57%).

Table 4. Descriptive Physical Health Across Time Points and Group Assignment (YMG, YO)

<i>Assessment</i>	<b>Pre-Test</b>				<b>Post-Test</b>				<b>30-day Follow-up</b>			
	<b>YMG</b>		<b>YO</b>		<b>YMG</b>		<b>YO</b>		<b>YMG</b>		<b>YO</b>	
<i>Eating habits</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Extremely healthy	8	14.29%	9	16.36%	14	24.14%	8	14.81%	8	15.38%	7	15.22%
Moderately healthy	37	66.07%	36	65.45%	37	63.79%	41	75.93%	39	75.00%	32	69.57%
Neither healthy, nor unhealthy	6	10.71%	9	16.36%	7	12.07%	5	9.26%	4	7.69%	6	13.04%
Moderately unhealthy	5	8.93%	1	1.82%	0	0.00%	0	0.00%	1	1.92%	0	0.00%
Extremely unhealthy	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<i>Non-yoga exercise past 30-days</i>												
Not at all	7	12.50%	9	16.36%	8	13.79%	8	14.81%	3	5.77%	5	10.87%
1-4 times	15	26.79%	12	21.82%	15	25.86%	7	12.96%	17	32.69%	7	15.22%
5-8 times	8	14.29%	10	18.18%	13	22.41%	14	25.93%	9	17.31%	9	19.57%
9-12 times	6	10.71%	6	10.91%	6	10.34%	7	12.96%	11	21.15%	7	15.22%
12+ times	20	35.71%	18	32.73%	16	27.59%	18	33.33%	12	23.08%	17	36.96%

Table 4 (continued)

<i>Assessment</i>	<b>Pre-Test</b>				<b>Post-Test</b>				<b>30-day Follow-up</b>			
	<b>YMG</b>		<b>YO</b>		<b>YMG</b>		<b>YO</b>		<b>YMG</b>		<b>YO</b>	
<i>Hours of sleep each night</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
4 or fewer hours	0	0.00%	0	0.00%	0	0.00%	1	1.85%	0	0.00%	0	0.00%
About 5-6 hours	19	33.93%	16	29.09%	17	29.31%	13	24.07%	16	30.77%	14	30.43%
About 7-8 hours	36	64.29%	39	70.91%	40	68.97%	40	74.07%	36	69.23%	29	63.04%
9+ hours	1	1.79%	0	0.00%	1	1.72%	0	0.00%	0	0.00%	2	4.35%
<i>Currently smoke cigarettes</i>												
Yes	1	1.79%	2	3.64%	2	3.45%	0	0.00%	1	1.92%	1	2.17%
No	55	98.21%	53	96.36%	56	96.55%	54	100.00%	51	98.08%	45	97.83%
<i>Alcoholic drinks each week</i>												
0	17	30.36%	12	21.82%	17	29.31%	13	24.07%	16	30.77%	9	19.57%
1-4	29	51.79%	28	50.91%	28	48.28%	25	46.30%	24	46.15%	20	43.48%
5-8	4	7.14%	12	21.82%	9	15.52%	14	25.93%	10	19.23%	14	30.43%
9-12	6	10.71%	2	3.64%	3	5.17%	2	3.70%	2	3.85%	2	4.35%
13-16	0	0.00%	1	1.82%	1	1.72%	0	0.00%	0	0.00%	0	0.00%
16+	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**Mental Health** (see Table 5)

**YMG.** YMG participants reporting their mental health as excellent remained quite steady across the time points, between 12-13%. Those reporting very good mental health peaked post-test with 56.90% (n=33), as compared to 44.64% (n=25) at pre-test, and 50% (n=26) at 30-day post. One woman (1.92%) at the 30-day follow-up visit reported poor mental health.

**YO.** Mental health that was at least very good was consistent across the time points; 64.45% (n=36) at pre-test; 68.52% (n=37) at follow-up, and 64.44% (n=39) at 30-day post. There was a marked decrease in the number of women reporting fair mental health at pre-test (n=7; 12.73%) dropping down to one person at 30-day (2.22%).

**YMG vs YO.** A total of 65.45% of YO women (n=36) reported at least very good mental health at pre-test in comparison with 57.14% of YMG women doing the same (n=32). Numbers were quite equal across groups for at least very good mental health at pre-test; 68.97% of YMG women (n=40) and 68.52% of YO women (n=37). Same for 30-day follow-up with 63.64% of YMG women (n=33) and 63.04% of YO women (n=29). Interestingly, the highest numbers for women reporting excellent mental health was at post-test for YO (n=11; 20.37%) and at 30-day follow-up for YMG (n=7; 13.46%).

#### **Feeling Calm and Peaceful (see Table 5)**

**YMG.** Many women reported feeling calm and peaceful most of the time; with a noted increase from pre-test (n=20; 35.71%) to 30-day post (n=29; 55.77%). There was also a noticeable difference of 17.86% of women reporting feeling calm and peaceful a little of the time at pre-test (n=10) which dropped to 3.85% feeling this way at 30-days post (n=2). One person at each timepoint reported feeling calm and peaceful all of the time.

**YO.** There was a similar pattern for the YO group where feeling calm and peaceful most of the time increased across time points; 27.27% of pre-test women (n=15) up to 53.33% of 30-day post women (n=24). In line with the YMG pattern noted above, there was also a decrease in those reporting feeling calm and peaceful a little of the time with 16.36% (n=9) at pre-test and decreasing to 8.89% (n=4) at 30-day post.

**YMG vs YO.** The pre-test numbers are fairly similar, though more YMG reported feeling calm and peaceful (n=20; 35.71%) in comparison with 27.27% of YO women (n=15). At the follow-up visit, most of the time was considerably higher for YMG women (n=30; 51.72%) than YO women (n=17; 31.48%). The numbers at the 30-day follow-up were not very different across groups.

### **Mental Health Problems in the Past Four Weeks** (see Table 5)

**YMG.** The YMG group saw an increase in the number of women reporting mental health problems that were not at all disruptive across time points. The low was at pre-test (35.71%; n=20), peaking at follow-up (63.79%; n=37) and then dropping slightly (though still higher than pre-test) at the 30-day post visit (57.69%; n=30). There was a notable decrease in those reporting somewhat disruptive problems from pre-test (23.21%; n=13), dipping the lowest at follow-up (8.62%; n=5) and then rising slightly (though still lower than pre-test) at 30-day post (9.62%; n=5).

**YO.** The majority of women (51.11%; n=23) reported not at all disruptive mental health problems at the 30-day post visit, compared to just 32.73% reporting not at all at pre-test (n=18). The highest number for not so disruptive was noted at follow-up (38.89%, n=21). Lastly, there was a decrease in somewhat disruptive problems from pre-test (34.55%; n=19) to 18.52% (n=10) at follow-up.

**YMG vs YO.** The YMG group (73.21%; n=41) at pre-test reported a higher number of women citing mental health problems that were not so disruptive or not at all disruptive as compared to the YO group with 54.55% reporting the same (n=30). At follow-up, YMG women (63.79%; n=37; cited not at all disruptive problems far more than their YO counterparts (n=21; 38.89%); a difference of 24.90%. Further, 91.38 % of YMG women (n= 53) found any mental health problems to be not so disruptive or not at all disruptive, in comparison to 77.78% of the YO group (n=42). This pattern continued for the 30-day post visit, with 57.69% (n=30) of YMG women reporting not at all disruptive, and an even 50% of YO women reporting the same (n=23). Problems that were either not so or not at all disruptive for YMG women (n=46; 88.46%) were higher than in the YO group (n=34; 73.91).

Table 5. Mental Health Status Across Time Points and Group Assignment (YMG, YO)

<i>Mental Health</i>	Pre-test		Post-test		30-day Follow-up	
	YMG	YO	YMG	YO	YMG	YO
	N %	N %	N %	N %	N %	N %
Excellent	7 12.50%	10 18.18%	7 12.07%	11 20.37%	7 13.46%	11 23.91%
Very good	25 44.64%	26 47.27%	33 56.90%	26 48.15%	26 50.00%	18 39.13%
Good	20 35.71%	12 21.82%	17 29.31%	14 25.93%	17 32.69%	14 30.43%
Fair	4 7.14%	7 12.73%	1 1.72%	3 5.56%	1 1.92%	1 2.17%
Poor	0 0.00%	0 0.00%	0 0.00%	0 0.00%	1 1.92%	0 0.00%
<i>Feel calm and peaceful</i>						
All of the time	1 1.79%	2 3.64%	1 1.72%	3 5.56%	1 1.92%	1 2.17%
Most of the time	20 35.71%	15 27.27%	30 51.72%	17 31.48%	29 55.77%	24 52.17%
Some of the time	25 44.64%	28 50.91%	25 43.10%	30 55.56%	20 38.46%	15 32.61%
A little of the time	10 17.86%	9 16.36%	2 3.45%	3 5.56%	2 3.85%	4 8.70%
None of the time	0 0.00%	1 1.82%	0 0.00%	1 1.85%	0 0.00%	1 2.17%
<i>Mental health problems in past 4 weeks</i>						
Not at all disruptive	20 35.71%	18 32.73%	37 63.79%	21 38.89%	30 57.69%	23 50.00%
Not so disruptive	21 37.50%	12 21.82%	16 27.59%	21 38.89%	16 30.77%	11 23.91%
Somewhat disruptive	13 23.21%	19 34.55%	5 8.62%	10 18.52%	5 9.62%	9 19.57%
Very disruptive	2 3.57%	3 5.45%	0 0.00%	2 3.70%	0 0.00%	1 2.17%
Extremely disruptive	0 0.00%	3 5.45%	0 0.00%	0 0.00%	1 1.92%	1 2.17%

**Self-report Yoga Past 30 Days** (see Table 6)

**YMG.** At pre-test, the most women reported doing yoga one to four times (n=21; 37.50%) or five to eight times (n=14; 25%) in the past 30-days. The highest single reported number was 43.10% of follow-up women (n=25) doing 9-12 yoga classes.

**YO.** Interestingly, the amount of 30-day post women doing no yoga (n=7; 15.56%) went almost to the pre-test number of women reporting no yoga (n=9; 16.36%). The number of women doing between five to twelve yoga classes went from 40% at pre-test

(n=22), peaked at 742.73% at follow-up (n=40) and then bottomed out at 27.27% 30-day post (n=15).

**YMG vs YO.** The numbers at pre-test are quite equal across groups. Same with follow-up, though the YMG group (n=14; 24.14%) saw slightly higher twelve or more yoga classes than YO (n=9; 16.67%). At the 30-day follow-up, fewer YMG women (n=5; 9.62%) reported doing no yoga than the YO women (n=7; 15.56%). YMG women doing 9+ yoga classes (n=15; 28.85%) was higher than the 17.78% of YO women (n=8).

### **Self-report Meditation Past 30 Days** (see Table 6)

**YMG.** Almost half of the pre-test women (n=27; 48.21%) did not practice meditation at all in the 30-days prior to study start. This number dropped down to zero at post-test and only rose up to 9.62% at the 30-day follow-up visit (n=5); a number less than  $\frac{1}{5}$  of the pre-test amount. The number of women meditating nine or more times hit a low at pre-test (n=9; 16.07%), peaked at follow-up (n=56; 96.55%) and then dropped down only to 32.69% (n=17) at 30-day post; a number double the pre-test amount.

**YO.** Just over half of the pre-test women (n=28; 50.91%) reported doing no meditation, 33.33% of follow-up women (n=18) and 40% of 30-day post women (n=18). Interestingly, 14.55% (n=8) of pre-test women started out doing twelve or more meditations, then dropped to 11.11% (n=6) of follow-up women, and peaked at 30-day post with 22.22% of women (n=10) meditating twelve or more times in the past 30-days.

**YMG vs YO.** The numbers at pre-test are quite equal across groups. As expected, the YMG women have much higher numbers of meditating than the YO group does. Most notably, 87.93% (n=51) of YMG women reported meditating twelve or more times in comparison with 11.11% of YO women (n=6). At the 30-day post visit, far more YO women (n=18; 40%) reported no meditation in the past 30-days than in the YMG group (n=5; 9.62%). The largest number of YMG women (n=21; 40.38%) did one to four

meditations at 30-day follow-up. Interestingly, both groups were fairly equivalent for twelve or more; YMG was 23.08% (n=12) and YO was 22.22% (n=10).

### **Self-report Gratitude Practice Past 30 Days** (see Table 6)

**YMG.** Many of the pre-test women did not have an existing gratitude practice (n=18; 32.14%), this number fell to zero at the follow-up visit and then inched up to 15.38% (n=8) at 30-days post; less than half of the pre-test amount. At pre-test, just 23.21% of women practiced gratitude nine or more times, as expected, this rose to 98.28% (n=57) at follow-up, and leveled off at 40.38% (n=29) at 30-day post; a number almost double the pre-test amount.

**YO.** Many of the pre-test women did not have an existing gratitude practice (n=24; 43.64%). This steadily decreased to 38.89% at follow-up (n=21) and finally to 37.78% (n=17) at 30-days post. Of note, there was a big jump in the number of women practicing gratitude twelve or more times from pre-test (n=5; 9.09%) to follow-up (n=9; 16.67%) and finally peaking at 30-days post with 24.44% of women (n=11) reporting practicing gratitude twelve or more times in the past 30-days.

**YMG vs YO.** The numbers are somewhat consistent across groups for this measure; except for not at all and twelve or more. Fewer YMG women did not practice gratitude at all at pre-test (n=18; 32.14%) as compared to 43.64% of YO women (n=24). At pre-test, more women in the YMG group practiced gratitude twelve or more times (n=11; 19.64%) than the 9.09% of YO women who did the same (n=5). As expected, the YMG women have much higher numbers of gratitude practice than the YO group does at post-test. Most notably, 84.48% (n=49) of YMG women noted participating in a gratitude practice 12+ times in comparison with 16.67% of YO women (n=9). At 30-day post, 40.38% of YMG women (n=21) practiced gratitude at least 12 times as compared with 26.67% of YO women (n=12). Well over double the YO women (n=17; 37.78%) did not practice gratitude at post-test at all in comparison with the YMG women (n=8; 15.38%).



Table 6. Self-reported Yoga, Meditation and Gratitude Practices Across Time Points and Group Assignment (YMG, YO)

<i>Practice</i>	<b>Pre-Test</b>		<b>Post-Test</b>		<b>30-day Follow-up</b>							
	<b>YMG</b>	<b>YO</b>	<b>YMG</b>	<b>YO</b>	<b>YMG</b>	<b>YO</b>						
<i>Yoga past 30-days</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>						
Not at all	7	12.50%	9	16.36%	0	0.00%	0	0.00%	5	9.62%	7	15.56%
1-4 times	21	37.50%	19	34.55%	6	10.34%	5	9.26%	21	40.38%	19	42.22%
5-8 times	14	25.00%	13	23.64%	13	22.41%	16	29.63%	11	21.15%	11	24.44%
9-12 times	7	12.50%	9	16.36%	25	43.10%	24	44.44%	8	15.38%	4	8.89%
12+ times	7	12.50%	5	9.09%	14	24.14%	9	16.67%	7	13.46%	4	8.89%
<i>Meditation past 30-days</i>												
Not at all	27	48.21%	28	50.91%	0	0.00%	18	33.33%	5	9.62%	18	40.00%
1-4 times	17	30.36%	13	23.64%	0	0.00%	21	38.89%	21	40.38%	12	26.67%
5-8 times	3	5.36%	5	9.09%	2	3.45%	5	9.26%	9	17.31%	3	6.67%
9-12 times	3	5.36%	1	1.82%	5	8.62%	4	7.41%	5	9.62%	2	4.44%
12+ times	6	10.71%	8	14.55%	51	87.93%	6	11.11%	12	23.08%	10	22.22%
<i>Gratitude Practice past 30-days</i>												
Not at all	18	32.14%	24	43.64%	0	0.00%	21	38.89%	8	15.38%	17	37.78%
1-4 times	18	32.14%	17	30.91%	0	0.00%	19	35.19%	15	28.85%	9	20.00%
5-8 times	7	12.50%	6	10.91%	1	1.72%	4	7.41%	8	15.38%	7	15.56%
9-12 times	2	3.57%	3	5.45%	8	13.79%	1	1.85%	2	3.85%	1	2.22%
12+ times	11	19.64%	5	9.09%	49	84.48%	9	16.67%	19	36.54%	11	24.44%

### Research Question #1

*Develop a yoga, meditation, and gratitude intervention designed to enhance well-being in women.*

The Balanced Woman; a yoga, meditation, and gratitude program, was designed as a health promotion effort to enhance well-being in women age 18-65. The program is described extensively in Chapter III. Results of program implementation are detailed below.

## Research Question #2

*Assess feasibility of the yoga, meditation, and gratitude intervention, as well as participants' adherence to each program component.*

### Feasibility

This study set out to determine the feasibility of a yoga, meditation, and gratitude practice intervention designed to enhance well-being in women. Bowen et al. (2010) suggest that studies based on critical, empirical evidence linking behavior to health have the potential to meet an intervention's goals; several guidelines that assist in the determination of feasibility for additional testing of a program are outlined below, specifically as they refer to The Balanced Woman.

**Changeable behaviors and objectives.** Prior to beginning The Balanced Woman, 14.41% (n= 16) of participants across both the experimental (YMG) and control (YO) groups reported not doing any yoga in the past 30-days and 36.04% (n=40) reported doing yoga 1-4 times in the past month. The number of women participating/or not in a yoga practice prior to entering the study was quite similar in all categories between YMG and YO. Just under half of the women at pre-test reported not meditating at all in the past 30-days (49.55%; n=55), an additional 30 women (27.03%) reported meditating one to four times; highlighting the opportunity to bring awareness to a meditation practice for over three-quarters of the women in the study (76.58%; n=85). Over one-quarter (25.26%, n=14) across groups had a consistent meditation practice of 12 or more times in the past 30-days. Much like the meditation practice, the women at pre-test did not have extensive experience with a gratitude practice; 42 women (37.84%) reported no gratitude practice in the past 30-days and 35 women reported one to four times (31.53%). The low percentages of women participating in these practices at pre-test showcase the opportunity for change across behaviors post study implementation. See Table 6 for full details.

**Relevant to the target population.** Bowen et al. (2010) also cite that the study should be relevant to the target population. This study was relevant to the women; of note, a full 100% (N=111) of participants across groups indicated that well-being was at least moderately important in their life; including 70.27% (n=78) reporting that well-being was extremely important in their life; 28.83% (n=32) said it was very important, and just one person in the YO group said it was moderately important (0.90%). Taken separately, the YMG group had slightly more people noting that well-being was extremely important (73.21%; n=41) than the YO group (67.27%; n=37). The inverse was true for very important, with 26.79% (n=15) of the YMG reporting that well-being was very important and 30.91% of the YO group reporting it as such (n=17).

Further, this comprehensive mind and body approach was very likely to appeal to women who already exhibit an inclination and interest in health-related matters, as demonstrated by the large majority of the pre-test women (93.69%, n=104) that reported physical health as good, very good, or excellent. Further, the great majority of women indicated a moderately or extremely healthy diet (81.08%; n=90), and 90.09% reported good, very good or excellent mental health (n=100). See Tables 3, 4 and 5 for details.

**Acceptability and desirability.** Acceptability and desirability of the program was carefully reviewed, and the study was found to be both acceptable and desirable. One positive indicator of these concepts was found in the high percentage of women willing to recommend The Balanced Woman to a friend or co-worker. A score of 7 or higher on a Likert Scale where zero is not at all likely to recommend, and 10 highly likely to recommend, 91.75% would recommend the program to a friend (n=89). The YMG group displayed a higher overall willingness to recommend the program with 98.04% (n=50) scoring a seven or higher on the scale, vs 92.86% (n=39) of the YO group. Thirty-seven women (74%) in the YMG group scored a 10 on the scale, vs 22 (52.38%) scoring a 10 for the YO group.

**Program demand and satisfaction.** Program demand and satisfaction, perceived sustainability and interest were determined by whether post-test participants in both groups planned to continue to do yoga (96.36%, n=106); and whether those in the YMG group would meditate (84.48%, n=49); or continue a gratitude practice (72.41%, n=42) moving forward. Only two people in both the YMG (3.45%) and YO groups (3.70%) were unsure of whether they would continue their yoga practice moving forward, all others indicated that they would continue their yoga practice (YMG: 94.83%, n=55); (YO: 94.44%, n=51). Seven YMG women (12.07%) were unsure if they would continue meditation and nine were unsure about continuing the gratitude practice (15.52%); one person noted they would not continue the gratitude practice, another would not continue the meditation practice.

At the time of the second follow-up survey (30-days post study completion); participants across groups reported doing the following practices at least once in the past 30-days: yoga (87.63%, n=85); meditation (76.29%, n=74) and gratitude (74.23%, n=72). Of note, 28.85% of the YMG group (n=15) reported doing yoga 9 or more times in the past 30-days; compared to just 17.78% (n=8) in the YO group reporting the same. Forty percent of YO women (n=18) reported not doing any meditation in the past 30-days far more than the YMG group did (9.62%; n=5). Many in the YMG group (40.38%, n=21) reported doing one to four meditations; both YMG (23.08%; n=12) and YO (22.22%; n=10) had many women report practicing 12 or more times. Of note, the YO group (37.78%; n=17) reported well over double the number of women who did not practice gratitude than did the YMG group (15.38%; n=8). The YMG group reported higher numbers of 12 or more times practicing gratitude (36.54%; n=19) than did the YO group (24.44%; n=11). The high percentages of women interested in, and actually continuing these practices is indicative of their satisfaction, sustainability and interest in the program (see Table 6 for full details).

At post-test, the perceived impact of the study on well-being across groups was very positive with 82.14% of women (n=92) reporting that participation at least slightly improved their well-being; 13.39% (n=15) reported no change in well-being; 3.57% (n=4) reported a slight decrease in well-being. One person (0.89%) noted a great decrease in well-being, though when asked to comment on any negatives of study participation wrote “none” and cited “*taking more time to be present and grateful*” as a benefit of the program. Of note, almost half (49.12%, n=28) of the YMG women reported a great increase in well-being; less than half this number of women in the YO group (n=13; 24.07%) reported the same improvement. Far more women in the YO group (n=1; 24.07%) reported no change as compared to one woman in the YMG (1.75%). Notably, 93.10% of the YMG group (n=54) reported at least a slight improvement in well-being as compared to 70.37% of women in the YO group (n=38) who reported the same (see Table 7 for details).

Table 7. Self-reported Study Effect on Well-Being (YMG, YO)

<i>Study Effect on Well-Being</i>	YMG		YO		Total	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<b>Greatly increased well-being</b>	28	49.12%	13	28.89%	51	45.54%
<b>Slightly increased well-being</b>	26	45.61%	25	55.56%	41	36.61%
<b>No change to well-being</b>	1	1.75%	12	26.67%	15	13.39%
<b>Slightly decreased well-being</b>	1	1.75%	3	6.67%	4	3.57%
<b>Greatly decreased well-being</b>	1	1.75%	0	0.00%	1	0.89%

**Practicality.** The Balanced Woman is practical in that the program can be delivered using existing means and resources without outside intervention; the program was easily integrated into the existing infrastructure at Balance Yoga & Wellness.

Overall, this program met the criteria for feasibility as detailed by Bowen et al. (2010) in terms of a relevant, practical, evidence-based program designed to meet the study's goals of enhancing well-being in women. The intervention was based on changeable behaviors and objectives, the program was acceptable and desirable to the majority of women surveyed as demonstrated by their willingness to recommend the program to a friend or coworker. The program was found to be satisfactory, sustainable and interesting as indicated by the women's intention to participate, and subsequent adherence to the practices even after the program ended.

### **Adherence**

The study began with a total of 123 women; 64 women in the active group, Yoga, Meditation, and Gratitude (YMG), and 59 women in the control group, Yoga Only (YO). Six women dropped out of the active group for the following reasons; injury outside the study (n=2), challenging time of year to participate (n=2), family obligation (n=1) and lost to follow-up (n=1). Three women dropped out of the control group due to injury outside the study. The study was carried out with a total of 114 women; 58 in the active group and 56 in the control group (see Figure 1). The study lasted 31 days and spanned the following five weeks in December of 2018: Week 1 (12/1- 12/7); Week 2 (12/8- 12/14), Week 3 (12/15-12/21), Week 4 (12/22-12/28) and Week 5 (12/29-12/31).

Participants in both groups were required to do two yoga classes of their choosing each week; 8 in total; these data were collected directly from the MindBody database Balance Yoga & Wellness uses to track class attendance. Women randomized to the YMG group were also asked to complete five gratitude practices and five guided meditations each week (6 sessions in Week 1) for a total of 22 gratitude practices and 23 meditations throughout the course of the study. The gratitude practice consisted of the participants reflecting and then recording Three Good Things that happened that day in a journal, as well as completion of the practice on The Balanced Woman Worksheet (see

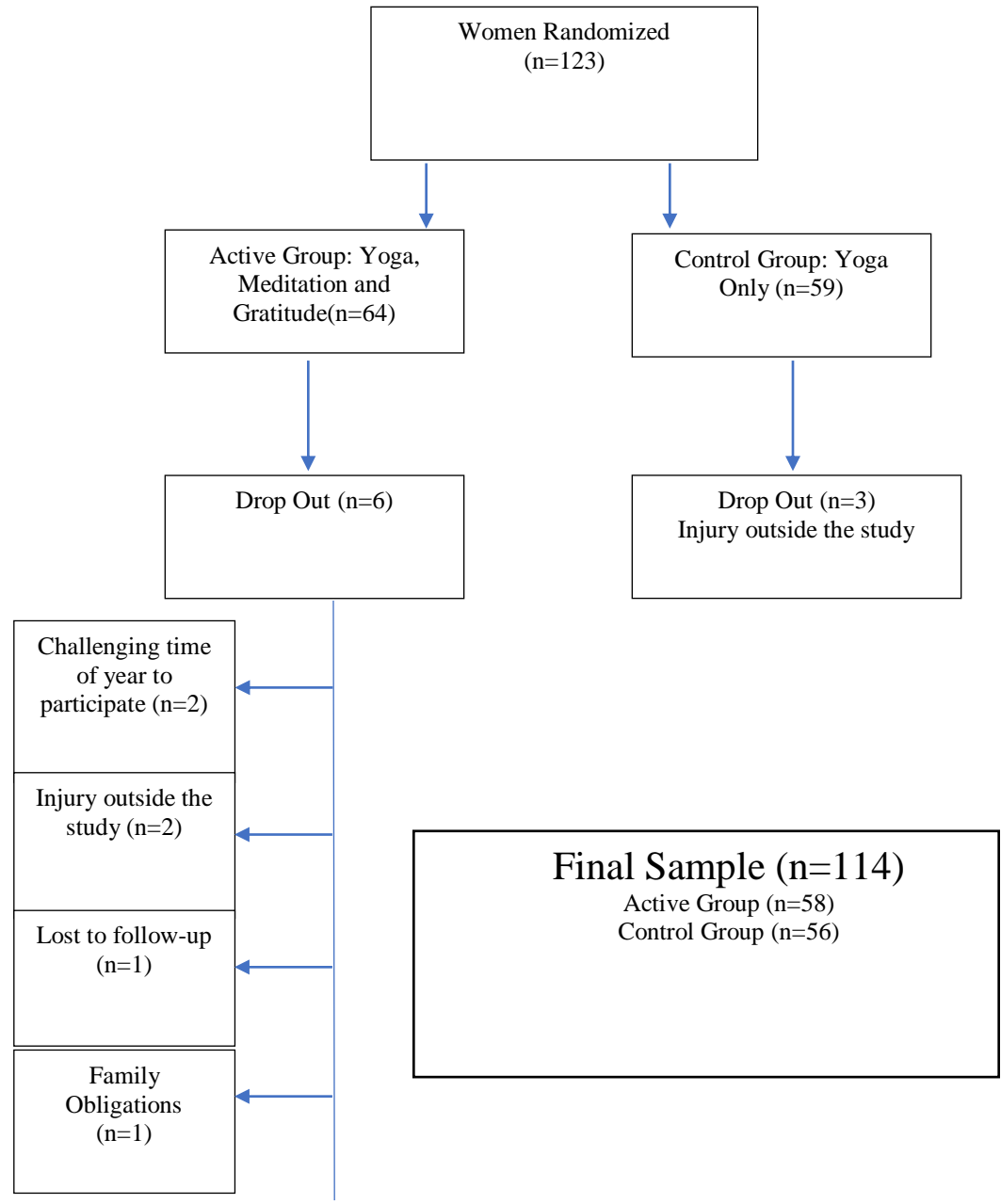


Figure 1. Enrollment, randomization, and dropout by group

Appendix C). Participants noted the date that they completed the meditation and gratitude practices on this worksheet and submitted it to the researcher at the completion of the study. Meditations were carefully chosen and made available to the study participants on

the Insight Timer app; meditation adherence data were collected almost exclusively directly from this database. Technical difficulties with Insight Timer led to seven women who noted that they completed the final two meditations on The Balanced Woman Worksheet, though they did not show up on the app; this information was included in the final adherence numbers.

### **Yoga, Meditation, and Gratitude (YMG)**

The YMG group displayed differing levels of adherence across study components. Overall, the yoga practice was most closely followed with an average of 10 classes taken over 30-days (125%). The gratitude practice was next with 19.41 days of gratitude reported (88.24%), followed closely by 19.91 meditations (86.58%). Gratitude practice adherence remained consistent as each week fell within a range of 85.17% (4.26 practices in Week 4) to 90.34% completed in Week 3 (4.52 practices). The meditation practice demonstrated a larger range with a low of 75.86% adherence (3.79 sessions in Week 5) to a high of 4.98 session completed in Week 2 (99.66%) (see Table 8).

### **Yoga**

Overall, the participants adhered to the yoga component of the study exceptionally well (Table 8), with each week demonstrating an average of above 100% adherence for both groups. Study-wide, the highest adherence was in the YMG group; 132.76% (average of 2.14 classes) in Week 4 (notably, the Christmas holidays fell during this time period). The lowest adherence was in the YO group; 110% (average of 2.20 classes). The YMG group demonstrated a higher adherence percentage than the YO group each week; Week 1 (YMG: 131.90%; YO: 121.43%), Week 2 (YMG: 114.66%; YO: 114.29%), Week 3 (YMG: 113.79%; YO: 110.71%), Week 4 (YMG: 132.76%; YO: 110%).

The YMG group showed a high adherence percentage in Week 1 (131.90%) with a slight dip in Week 2 (114.66%) and Week 3 (113.79%) and then a resurgence to the highest adherence percentage of the study in Week 4 (132.76%). The average number of



classes completed across all weeks for YMG was well above the required 8 with an average of 10 classes (125%).

The YO group exhibited a slight decline in yoga adherence from week to week; with 2.43 classes (121.43%) on average in Week 1; 2.29 classes (114.29%) in Week 2; 2.21 classes (110.71%) in Week 3; and 2.20 classes (110%) in Week 4. The average number of classes completed across all weeks for YO was similarly well above the required eight, with an average of 9.66 (120.76%) classes completed per person at study end (Table 9).

**YouTube.** Participants who could not make it to Balance Yoga & Wellness for a class were given the option to complete the yoga requirement via preselected YouTube classes in their own home, and if necessary, at an outside yoga studio. The YouTube classes were carefully chosen to give a wide range of options to the students including a class for beginners, a power yoga class for those looking for a more physically challenging practice, a gentle restorative class, as well as classes designed to chance self-love and self-compassion. Many of the classes were instructed by well-known and highly respected teachers in the yoga world (i.e., Yoga with Adrienne and the Journey Junkie). Additionally, every option had at least 10,000 views and over 100 positive reviews on YouTube, with the highest being 2.2 million views and 17k positive reviews.

More than half of the participants (n=64; 56.14%) took advantage of the flexibility offered through YouTube yoga classes. There were slightly more women who completed at least one YouTube class in the YMG group (n=33), than in the YO group (n=31). Across the weeks, YouTube utilization peaked at Week 4, with 1.53 classes on average for YMG and 1.50 classes on average for YO (Table 10).

Table 8. YMG Group Adherence to the Yoga, Meditation, and Gratitude Practices

<i>Practice</i>	<b>Week 1</b>		<b>Week 2</b>		<b>Week 3</b>		<b>Week 4</b>		<b>Week 5</b>		<b>TOTAL</b>	
	<i>Avg # Complete</i>	<i>Avg % complete</i>	<i>Avg # Complete</i>	<i>Avg % Complete</i>	<i>Avg # Complete</i>	<i>Avg % complete</i>	<i>Avg # Complete</i>	<i>Avg % complete</i>	<i>Avg # Complete</i>	<i>Avg % complete</i>	<i>Avg # Complete</i>	<i>Avg % complete</i>
<b>Yoga</b>	2.64	131.90%	2.29	114.66%	2.28	113.79%	2.14	132.76%	NA	NA	10.00	125.00%
<b>Medi</b>	5.12	85.34%	4.98	99.66%	4.69	93.79%	3.79	75.86%	1.33	77.59%	19.91	86.58%
<b>Gratitude</b>	4.41	88.28%	4.45	88.97%	4.52	90.34%	4.26	85.17%	1.78	88.79%	19.41	88.24%

Table 9. YO Group Adherence to Yoga

<i>Practice</i>	<b>Week 1</b>		<b>Week 2</b>		<b>Week 3</b>		<b>Week 4</b>		<b>TOTAL</b>	
	<i>Avg # Complete</i>	<i>Avg % Complete</i>	<i>Avg # Complete</i>	<i>Avg % Complete</i>	<i>Avg # Complete</i>	<i>Avg % Complete</i>	<i>Avg # Complete</i>	<i>Avg % Complete</i>	<i>AVG # Complete</i>	<i>Avg % Complete</i>
<b>Yoga</b>	2.43	121.43%	2.29	114.29%	2.21	110.71%	2.20	110.00%	9.66	120.76%

Table 10. YouTube Utilization Across Time Points and Group Assignment (YMG, YO)

<i>Classes</i>	Week 1		Week 2		Week 3		Week 4		Total		Overall Utilization
	YMG	YO	YMG	YO	YMG	YO	YMG	YO	YMG	YO	YMG + YO
	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>
Average # of YouTube classes completed	1.07	1.13	1.40	1.43	1.33	1.38	1.53	1.50	2.48	2.61	5.10
# of women completing at least one YouTube class	15	8.00	10	14.00	18	16.00	17	20	33	31	64
Average # of Outside classes completed	2.00	0.00	1.00	0.00	2.00	1.00	1.67	1.62	2.13	1.69	3.82
# of women completing at least one Outside class	1	0.00	1	0.00	2	1.00	6	13	8	13	21

Interestingly and in line with the study purpose, the most popular video across both groups was, by far, self-love with Yoga by Adrienne; both groups had 19 views for a total of 38 views. There were 20 total unspecified YouTube videos completed. The Complete Beginner video was also quite popular (n=19 total views) especially with the YMG group who did 16 of the 19 total classes (84.21%). Yin yoga was also more popular with the YMG group completing 10 of the 13 total classes (76.92%). The YO group completed 13 of 14 Weight Loss Yoga classes (92.86%), and 10 of the 13 Power Vinyasa Flow classes (76.92%) (see Table 11).

**Outside yoga studios.** Less than a quarter of the women (18.42%; n=21) participated in a yoga class at a studio other than Balance Yoga & Wellness. Those that did, found classes in Costa Rica, Mexico, New York City, Montreal and even Bucharest. For the YMG group, eight women (13.79%) completed at least one class at an outside studio; the number was slightly higher for the YO group with 13 women (23.21%) taking class at an outside studio. Not surprisingly, Week 4 (Dec. 22–Dec. 28) showed the most outside studio utilization across both groups with many people traveling over the holidays. Thirteen women in the YO group completed an average of 1.62 outside classes during this time frame; six women completed an average of 1.67 outside classes in the YMG group during the same time period. Weeks 1 and 2 in the YO group had 0 outside classes and Week 3 had 1. YMG had 1 in both Weeks 1 and 2, and 2 in Week 3. YMG had a total of 13 vinyasa classes, two restorative yoga classes and one Bikram yoga class; the YO group completed 16 vinyasa classes and three Bikram yoga classes at an outside studio. Vinyasa was by far the most popular outside class with 29 done for both groups, followed by four total Bikram classes and two restorative classes.

Table 11. YouTube Videos Completed Across Time Points and Group Assignment (YMG, YO)

<i>YouTube Video</i>	Week 1		Week 2		Week 3		Week 4		Totals by Group			Overall Totals	
	<i>YMG</i>	<i>YO</i>	<i>YMG</i>	<i>YO</i>	<i>YMG</i>	<i>YO</i>	<i>YMG</i>	<i>YO</i>	<i>YMG</i>	<i>YO</i>	<i>TOTAL</i>	<i>% YMG of Total</i>	<i>% YO of Total</i>
Weight Loss Yoga	0	0	0	2	0	5	1	6	1	13	14	7.14%	92.86%
Self-Love Yoga	1	2	2	4	9	7	6	6	19	19	38	50.00%	50.00%
Chakra Yin for Emotional Healing	3	1	1	1	2	0	1	1	7	3	10	70.00%	30.00%
Unspecified*	1	2	5	2	0	4	5	1	11	9	20	55.00%	45.00%
Power Vinyasa Flow	0	0	1	3	1	3	1	4	3	10	13	23.08%	76.92%
Yin Yoga	2	0	1	0	4	0	3	3	10	3	13	76.92%	23.08%
Complete Beginner	8	1	2	0	3	0	3	2	16	3	19	84.21%	15.79%
Deeply Restorative Yoga	0	0	1	1	3	0	1	0	5	1	6	83.33%	16.67%
Restorative Yoga (neck & shoulders)	0	2	0	2	0	0	1	1	1	5	6	16.67%	83.33%
Vinyasa Flow for Flexibility	1	0	1	1	0	2	0	1	2	4	6	33.33%	66.67%
Compassion Yoga	0	1	0	1	2	0	1	2	4	4	8	50.00%	50.00%
Vinyasa Outside Studio	2	0	1	0	4	1	6	15	13	16	29	44.83%	55.17%
Restorative Outside Studio	0	0	0	0	0	0	2	0	2	0	2	100.00%	0.00%
Bikram Yoga Outside Studio	0	0	0	0	0	1	1	2	1	3	4	25.00%	75.00%

\*Participant did one of the 10 pre-selected yoga videos, but did not specify which.

Fifty-three women (91.38%) fulfilled the eight or more yoga class requirement; 27 women (46.55%) completed all 22 assigned gratitude intentions, and 18 women (31.58%) finished all 23 meditations. There were 34 women who completed at least two of these study components with 100% or better adherence (58.62%) and 10 women (17.24%) displayed 100% or better adherence to all three study components. When the adherence threshold was reduced to 90% or better, the large majority of women (79.31%, n=46) successfully completed at least two of the study components, and over half (51.72%, n=30) completed all three.

### **Meditation**

The meditation practice reached a peak high of nearly 100% of YMG completing the practice in Week 2 (99.66%); 4.98 meditations were completed this week on average. As noted above, the Week 5 meditation adherence (77.59% compliant) is a mix of data taken directly from Insight Timer as well as via self-report on the Balanced Woman Worksheet (Appendix C). Eighteen women (31.03%) had a 100% adherence rate for this portion of the study; 33 women (56.90%) completed at least 90% of the meditations. The lowest adherence was 21.74% (see Table 8).

### **Gratitude Practice**

Gratitude practice adherence peaked in Week 3 with 90.34% (4.52 practices on average); followed by the remaining weeks with adherence percentages in the high 80's (Week 2: 88.97%; Week 5: 88.79%; Week 1: 88.28% and finally Week 4 with 85.17%). Of note, two women did not submit the Balanced Woman Worksheet, their data were entered as '0' for each required gratitude practice. Twenty-six women (44.83%) reported complete 100% adherence to the gratitude practice. Just under three-quarters of the women (74.14%, n=43) completed at least 90% of the gratitude practices (see Table 8).

### Research Question #3

*Assess changes in well-being from pre- to post-intervention, as captured by responses to the Ryff Scale of Psychological Well-Being (Medium Form), Personal Wellbeing Index, Grateful Disposition Questionnaire and the Self-Compassion Scale –Short Form; draw comparisons to the control group.*

See below for a comprehensive review of each of these scales. Note that all the plots below are divided on the y axis by group, Control (YO) or Active (YMG). The three time points of the study, pre-test, post-test and 30-day follow-up, are described along the bottom. The plots symbolize each individual response to the scale across the timelines. The mean for each time point is highlighted in blue; one can easily see any upward or downward movement across the time points this way.

#### **Ryff Scale of Psychological Well-Being (Medium-Form)**

The Ryff Scale of Psychological Well-Being (Ryff) is a 54-item scale focused on measuring several aspects of psychological well-being including autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life and self-acceptance. Statements are rated on a scale of one to six; one indicates strong disagreement and six indicates strong agreement.

The plot below (Figure 2) illustrates the overall Ryff score (sum of all 54 items), comparing the control group (YO) (Yoshihara et al., 2014) to the active group (YMG). Visual inspection of the plot (Figure 2) shows no significant change from pre-test to follow-up for YO, and a slight dip from pre-test to follow-up for YMG.

The highest possible score on this scale is 324; the halfway point is 162. So, respondents on average were often somewhere between slightly disagreeing and slightly agreeing on the statements.

A paired-samples t-test was conducted to compare the overall score from pre-test to 30-day follow-up for both YMG and YO. There was not a significant difference in the scores at pre-test for YMG (M=194.52, SD=12.49) and the scores for YO: M=189.76; SD=13.28);  $t(102)=-1.88$ ,  $p = 0.063$ . Nor were statistically significant results found at

follow-up, YMG:  $M=192.56$ ,  $SD=10.87$ ; YO:  $189.62$ ;  $SD=17.66$ );  $t(60.38)=-.091$ ,  $p = 0.37$ . Note the high SD for the YO group at 30-day follow-up, indicative of high variance in that sample. These results suggest that the intervention did not have a significant impact on overall well-being as assessed by the Ryff.

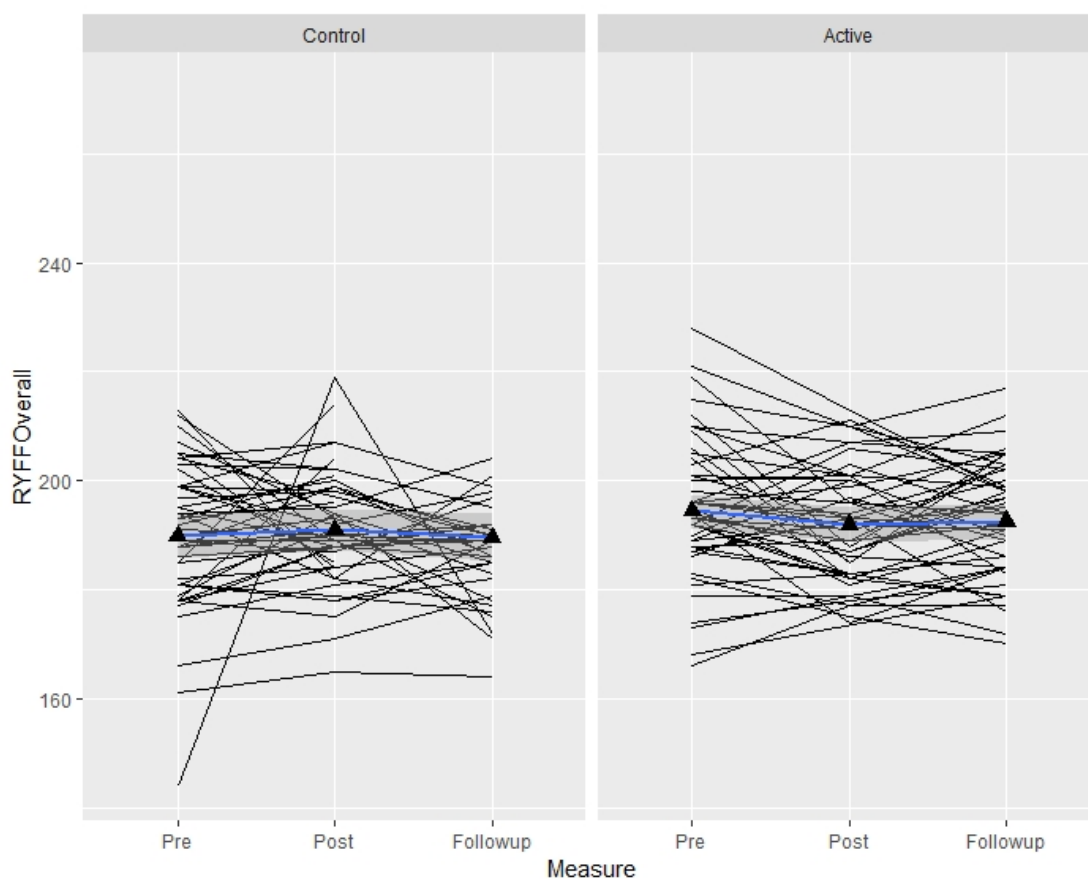


Figure 2. Ryff Scale of Psychological Well-being: Overall Scores. This figure illustrates overall scoring by group; Control (L; Yoga Only) and Active (R; Yoga, Meditation and Gratitude) across time points.

**Autonomy.** Those who score high on this 9-item subscale are independent thinkers who internally regulate behavior and are able to reject social pressures to think and behave in a specific way. Others rely more heavily on the judgments and opinions of others and often conform to societal pressures. Ex: *“Being happy with myself is more important to me than having others approve of me.”*



The plot below (Figure 3) illustrates the autonomy subscale on the Ryff comparing YO to YMG. Visual inspection of the plot shows no significant change from pre-test to follow-up for either YO or YMG. The means between groups are quite similar at pre-test, YO:  $M=34.82$ ,  $SD=4.11$ ; YMG:  $M=34.98$ ,  $SD=3.27$ ;  $t(103)=0.44$ ,  $p = 0.66$ , as well as at follow-up, YO:  $M=34.52$ ,  $SD=3.84$ ; YMG:  $M=34.71$ ,  $SD=3.12$ ;  $t(91)=-0.25$ ,  $p = 0.80$ .

The high score on this scale is 54; the average participant's responses are slightly over the midpoint value of 27, so leaning toward the positive end of the scale where more independent thinking and the ability to reject social pressure takes place. The means for this subscale are the highest of all the Ryff subscales for both YMG ( $M=34.98$ ,  $SD=3.27$ ) and YO ( $M=34.82$ ,  $SD=4.11$ ) at pre-test, and for YO ( $M=34.52$ ,  $SD=3.12$ ) at follow-up.

A paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO; significant results were not found when measuring the scores at pre-test, post-test or 30-day follow-up for either group. These results suggest that the intervention did not have a significant impact on autonomy as assessed by the Ryff.

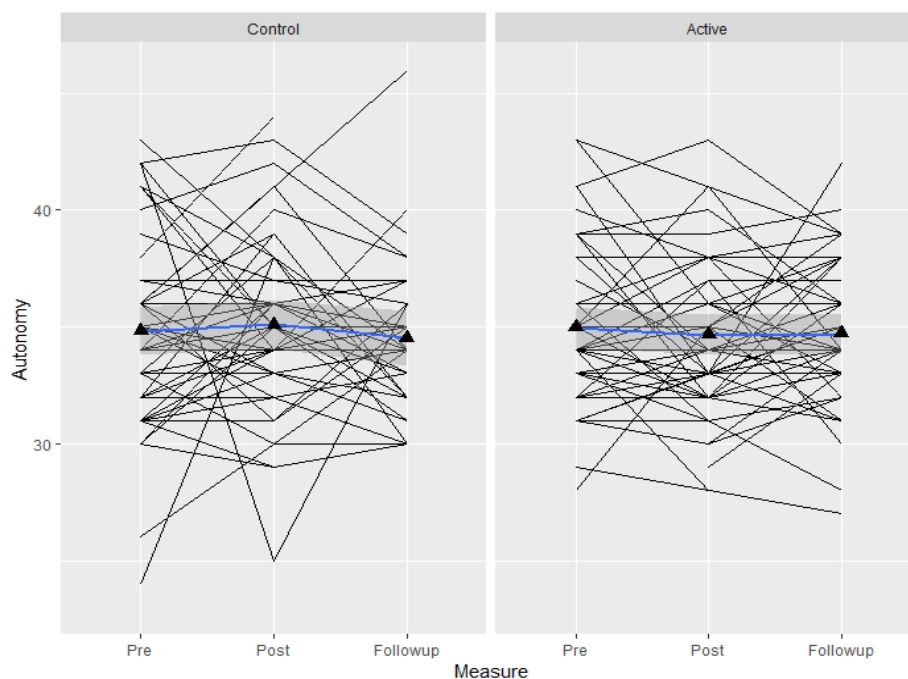


Figure 3. Ryff Scale of Psychological Well-being: Autonomy Subscale. This figure illustrates autonomy scoring on the Ryff by group; Control (L; Yoga Only) and Active (R; Yoga, Meditation and Gratitude) across time points.

**Environmental mastery.** High scorers on this 9-item scale have command over their environment and a firm handle on the complexities of everyday tasks and external activities. Low scorers may have difficulty dealing with everyday responsibilities and tasks and there is a sense of powerlessness over the external world. Ex: *“In general, I feel I am in charge of the situation in which I live.”*

The plot below (Figure 4) represents the environmental mastery subscale on the Ryff, comparing YO to YMG. Visual inspection of the plot shows no significant change from pre-test to follow-up for either YO or YMG. The means between groups are fairly similar at pre-test, YO:  $M=34.42$ ,  $SD=4.67$ , YMG:  $M=35.50$ ,  $SD=3.84$ ;  $t(102)=0.86$ ,  $p=0.39$ , as well as at follow-up, YO:  $M=34.34$ ,  $SD=4.50$ , YMG:  $M=34.88$ ,  $SD=3.47$ ;  $t(89)=-0.646$ ,  $p=0.52$ . Both groups exhibit a slight dip from the pre-test to follow-up values. Of note, the YO group went up slightly at post-test ( $M=35.0$ ,  $SD=3.72$ ), though dropped down to below pre-test at follow-up.

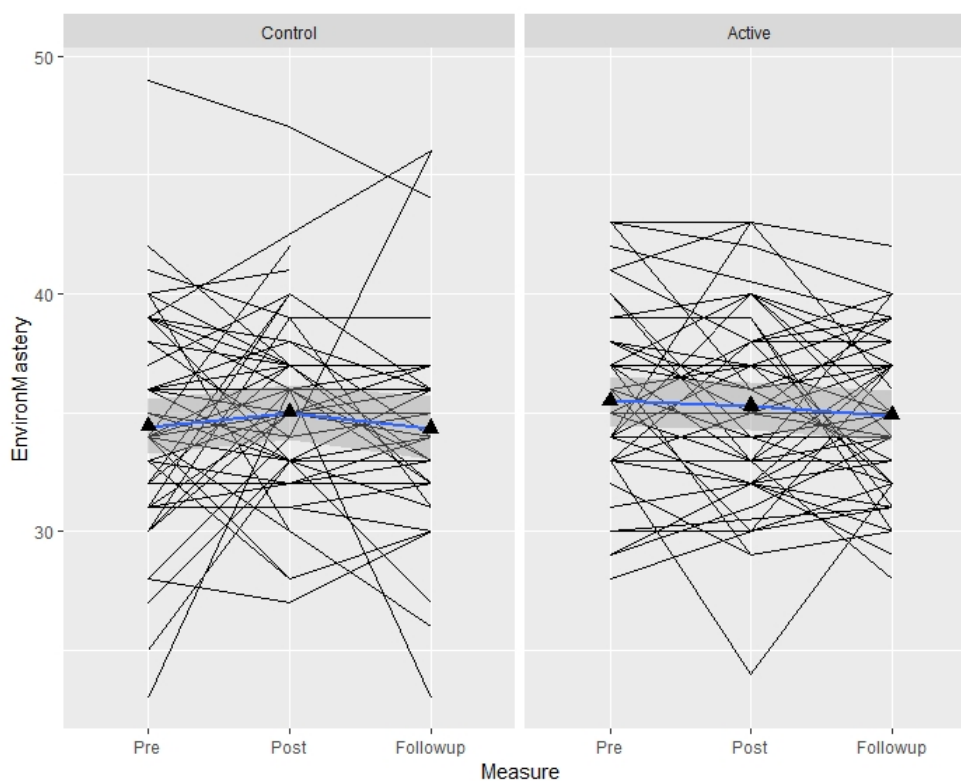


Figure 4. Ryff Scale of Psychological Well-being: Environmental Mastery Subscale. This figure illustrates environmental mastery scoring on the Ryff by group; Control (L; Yoga Only) and Active (R; Yoga, Meditation and Gratitude) across time points.

The high score on this scale is 54; the average participant's responses are slightly over the midpoint value of 27, so leaning toward the positive end of the scale where the average respondent reported more control over their environment.

No significant results were found on a paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO. These results suggest that the intervention did not have a significant impact on environmental mastery as assessed by the Ryff.

**Personal growth.** The high scorer on this 9-item scale continues to grow, develop and improve with increasing self-knowledge, awareness and receptivity to new experiences. Others stagnate, may feel bored or disinterested in life with no sense of improvement or development over time. Ex: *"I think it is important to have new experiences that challenge how you think about yourself and the world."*

The plot below (Figure 5) illustrates the personal growth subscale on the Ryff. Visual inspection of the plot shows no significant change from pre-test to follow-up for YO. The YMG group displays a drop in mean from pre-test (M=28.13, SD=4.41) to post-test and follow-up which have the exact same values (M=26.88, SD=2.81).

The high score on this scale is 54; the average participant's responses are slightly under the midpoint value of 27, so leaning toward the negative end of the scale where the average respondent reported feeling slightly more stagnant and bored; perhaps noticing somewhat less growth and development over time. The mean personal growth score at follow-up for the YMG group represents the lowest mean of subscales for the YMG group (M=26.88; SD=2.81).

A paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO. There was not a significant difference in the pre-test scores for YMG (M=28.13, SD=4.41) and the scores for YO 26.88; SD=2.81;  $t(90.97)=1.73$ ,  $p = 0.09$ . Nor were statistically significant results found at follow-up for YMG (M=26.88, SD=2.81) and YO: M=27.21, SD=4.12;  $t(70.60)=0.45$ ,  $p = 0.66$ . These

results suggest that the intervention did not have a significant impact on personal growth as assessed by the Ryff.

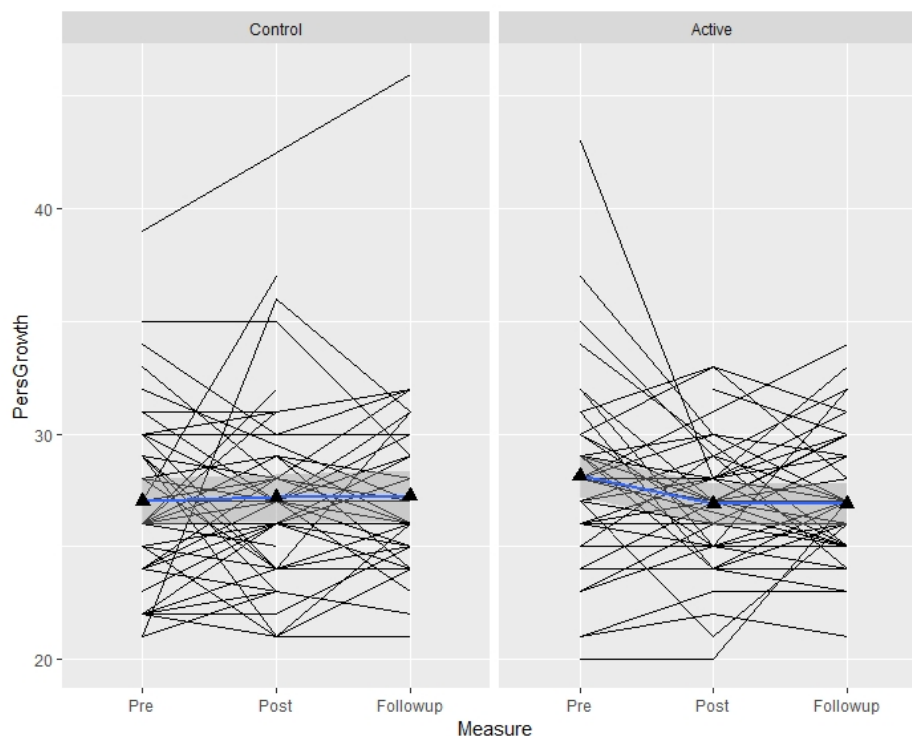


Figure 5. Ryff Scale of Psychological Well-being: Personal Growth Subscale. This figure illustrates personal growth scoring on the Ryff by group; Control (L; Yoga Only) and Active (R; Yoga, Meditation and Gratitude) across time points.

**Positive relations with others.** Those that score high on this scale have pleasant and gratifying relationships, they can be very empathetic and take a genuine interest in the welfare of others. Low scorers on this scale tend to have few close relationships and may find it challenging to be empathetic, warm and open; they are often isolated and frustrated in their relationships. Ex: *“I enjoy personal and mutual conversations with family members or friends.”*

The plot below (Figure 6) illustrates the positive relationship subscale on the Ryff. The plot shows a slight, but insignificant, dip in YO means from pre-test (M= 32.11, SD=4.93) to post-test (M=31.49, SD=4.25) to follow-up (M=30.95, SD= 4.20). The

YMG group displays a very slight dip in the mean at post-test ( $M=32.21$ ,  $SD=4.03$ ) from pre-test ( $M=32.91$ ,  $SD=4.44$ ); the numbers went back up to pre-test values by follow-up ( $M=32.80$ ,  $SD=3.74$ ). The means between groups are fairly similar at pre-test, YO: 32.11 and YMG: 32.91, as well as at post-test, YO: 31.49 and YMG: 32.21. Importantly, there is a statistically significant difference between groups at the follow-up visit, with the YMG group ( $M=32.80$ ,  $SD=3.74$ ) reporting more positive relationships than the YO group ( $M=30.95$ ,  $SD=4.20$ );  $t(91)=-2.24$ ,  $p = 0.03$ .

The high score on this scale is 54; the average participant's responses are just over the midpoint value of 27, so leaning toward the positive end of the scale where the average respondent enjoys more positive and gratifying relationships.

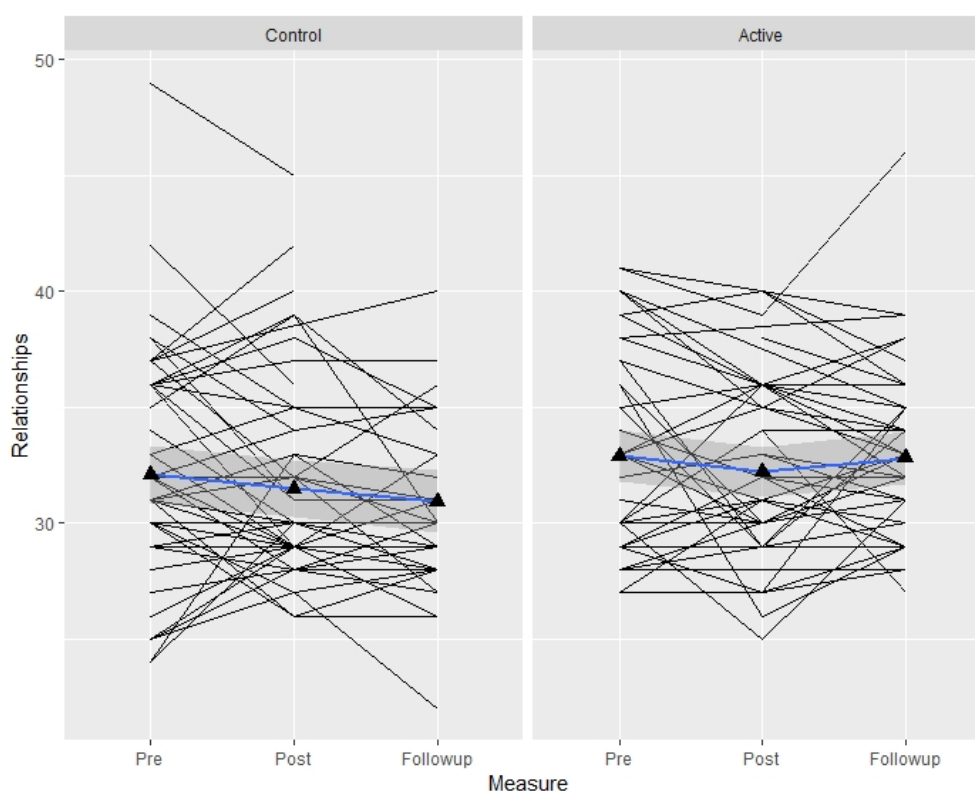


Figure 6. Ryff Scale of Psychological Well-being: Positive Relationships Subscale. This figure illustrates positive relationship scoring on the Ryff by group; Control (L; Yoga Only) and Active (R; Yoga, Meditation and Gratitude) across time points.

A paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO. There was a statistically significant difference in the scores for YMG at follow-up as noted above, the remaining interactions were insignificant, both across groups (YMG compared to YO) and within groups across time points (ex YO from pre-test to follow-up). These results suggest that the intervention had a positive significant impact on personal relationships as assessed by the Ryff.

**Purpose in life.** The high scorer here has goals and purpose, a sense of direction in life, feels there is meaning in life. The low scorer lacks meaning, goals, direction, purpose and aims. Ex: *“I enjoy making plans for the future and working to make them a reality.”*

The plot below (Figure 7) illustrates the purpose in life subscale on the Ryff. Visual inspection of the plot shows no significant change in the YO group from pre-test (M=27.74, SD=3.83) to follow-up, M=27.84, SD=4.31;  $t(95)=-0.12$ ,  $p = 0.91$ , though there is slightly more variability in the follow-up sample as can be seen from the higher SD value. Similarly, the YMG group shows no significant change from pre-test (M=28.11, SD=3.82) to follow-up, M=27.53, SD=3.64;  $t(103)=0.80$ ,  $p = 0.43$ .

The high score on this scale is 54; the average participant's responses are right around the halfway mark of 27, indicating that the average respondent neither specifically has, nor lacks, direction in life, definitive goals and/or a clear-cut purpose. The mean for this subscale is the lowest in the sample at pre-test for YMG (M=28.11, SD=3.82).

A paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO. No significant differences were found in the analysis of this subscale. These results suggest that the yoga, meditation and gratitude intervention did not have a significant impact on purpose in life as assessed by the Ryff.

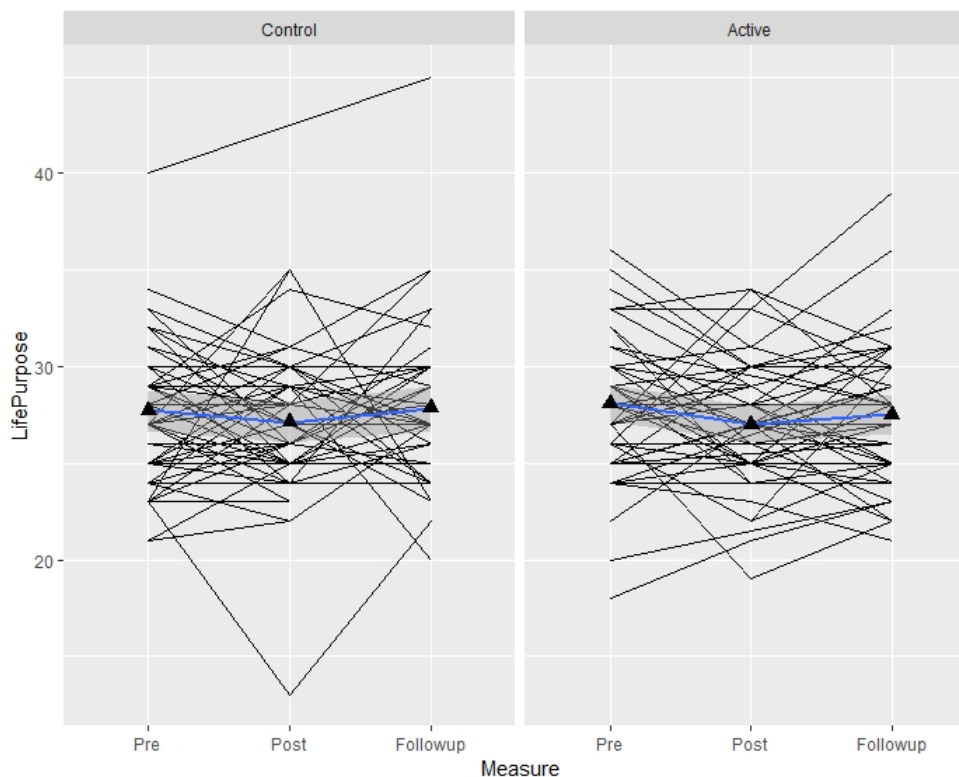


Figure 7. Ryff Scale of Psychological Well-being: Purpose in Life Subscale. This figure illustrates purpose in life scoring on the Ryff by group; Control (L; Yoga Only) and Active (R; Yoga, Meditation and Gratitude) across time points.

**Self-acceptance.** High scorers tend to have a positive attitude toward the self, acknowledging and accepting both good and bad qualities. Low scorers may feel dissatisfaction with the self and with the past, and may wish to be different than what they are. Ex: *“I made some mistakes in the past, but I feel that all in all everything has worked out for the best.”*

The plot below (Figure 8) illustrates the self-acceptance subscale on the Ryff. Visual inspection of the plot shows a slight, but insignificant, increase in means for both groups at pre-test, YO:  $M=34.26$ ,  $SD=3.68$ , YMG:  $M=34.89$ ,  $SD=4.17$ ;  $t(106)=0.83$ ,  $p = 0.41$  to follow-up, YO:  $M=34.76$ ,  $SD=4.29$ , YMG:  $M=35.94$ ,  $SD=3.41$ ;  $t(90)=-1.47$ ,  $p = 0.15$ . Note the increased variability in the YO group follow-up values as evidenced by the higher SD.

The high score on this scale is 54; the average participant's responses are firmly above the halfway mark of 27, indicating that the average respondent has a generally positive attitude toward the self. In fact, the self-acceptance scale has the second highest mean for the Ryff subscales, second to only autonomy for YMG at pre-test, and is the highest mean for the YMG group at follow-up ( $M=35.94$ ,  $SD=3.41$ ). The YO group has higher means on 2 other subscales at pre-test (autonomy and environmental mastery) and on autonomy at follow-up.

A paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO; no significant values were observed as a result of these comparisons. These results suggest that the intervention did not have a significant impact on self-acceptance as assessed by the Ryff.

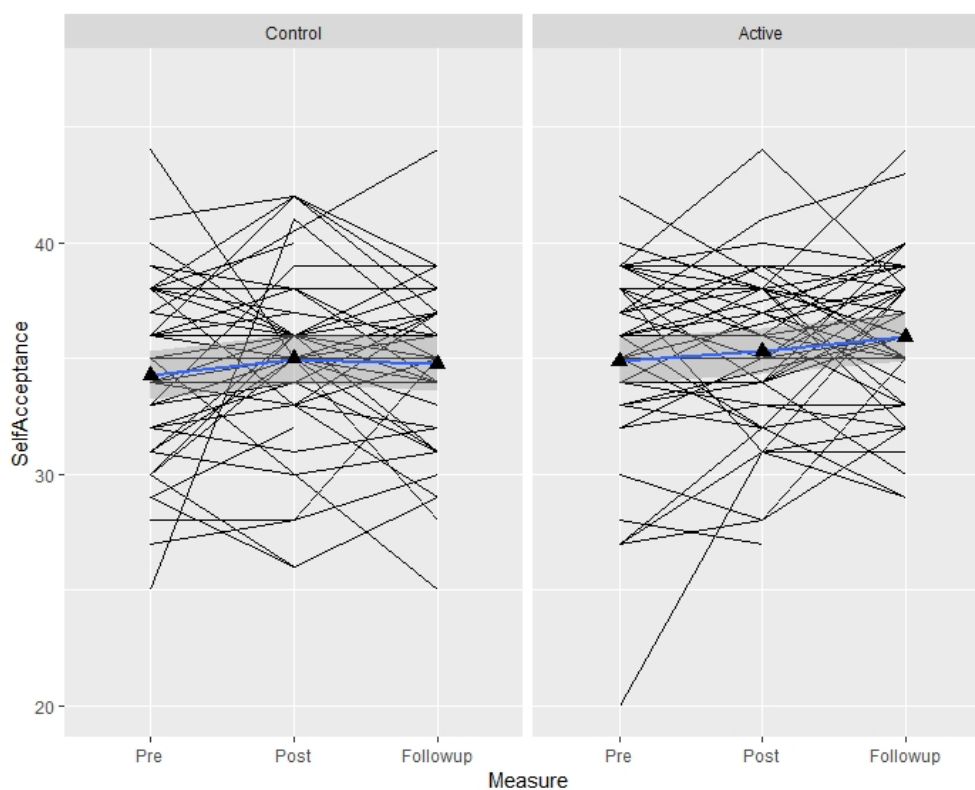


Figure 8. Ryff Scale of Psychological Well-being: Self-acceptance Subscale. This figure illustrates self-acceptance scoring on the Ryff by group; Control (L; Yoga Only) and Active (R; Yoga, Meditation and Gratitude) across time points.



## Personal Well-Being Index

The Personal Well-Being Index is a single item measure of life satisfaction; “Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?” Participants respond on to a Likert Scale question where 0 is Completely Dissatisfied and 10 is Completely Satisfied.

The plot below (Figure 9) illustrates the Personal Well-Being Index. Visual inspection of the plot shows a slight increase in means across groups from pre-test, YO:  $M=3.87$ ,  $SD=0.86$ ; YMG:  $M=3.94$ ,  $SD=0.81$ ;  $t(103)=-1.31$ ,  $p = 0.19$  to follow-up, YO:  $M=4.02$ ,  $SD=0.91$ ; YMG:  $M=4.14$ ,  $SD=0.69$ ;  $t(92)=-0.696$ ,  $p = 0.49$ .

The high score on this scale is 10; the average participant’s responses are below the halfway mark of 5, indicating some dissatisfaction with life and personal circumstances for the average respondent.

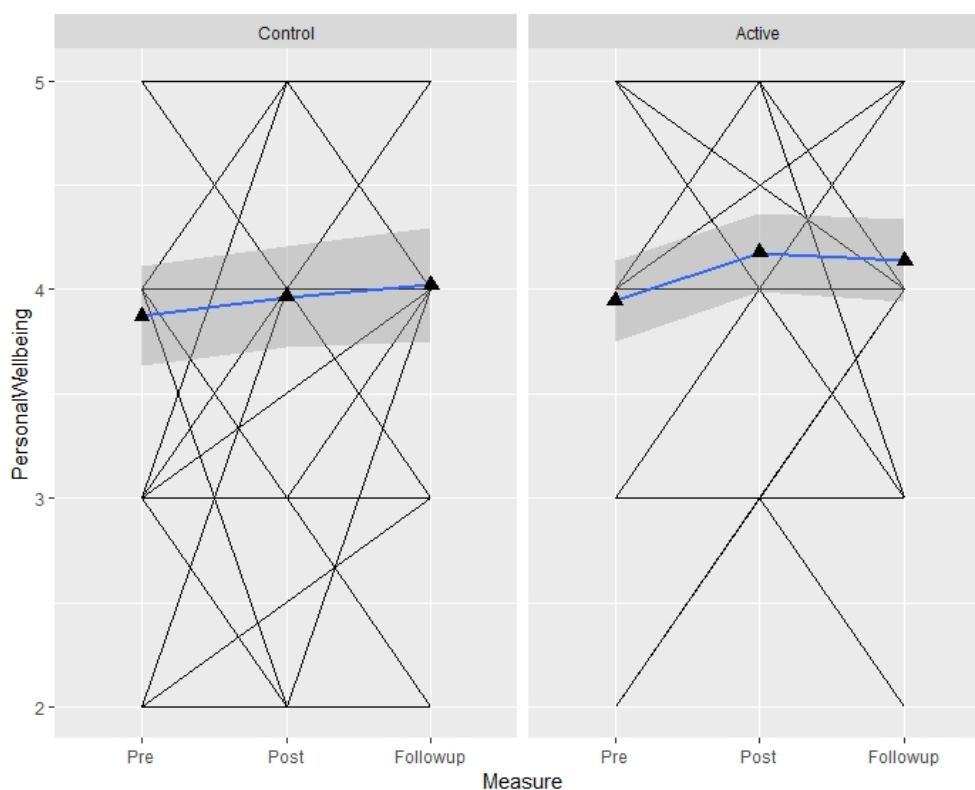


Figure 9. Personal Well-Being Index. This figure illustrates a single item assessment of personal well-being by group; Control (L; Yoga Only) and Active (R; Yoga, Meditation and Gratitude) across time points.

A paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO; significant results were not observed for these analyses. These results suggest that the intervention did not have a significant impact on well-being as assessed by the Personal Well-Being Index.

### **Self-Compassion Scale—Short Form (SCS-SF)**

Self-compassion is an integral piece of well-being, consisting of three principal elements: self-judgment versus self-kindness (being warm and understanding toward ourselves when we suffer or fail vs ignoring our pain and piling on self-criticism), isolation versus common humanity (suffering is part of the shared human experience—not something that happens to me alone), and over-identification versus mindfulness (a balanced approach to negative emotions so that feelings are neither suppressed nor exaggerated) (Hall et al., 2013). This 12-item measure of self-compassion is scored on a 5-point Likert Scale where 1 is Almost Never and 10 is Almost Always. Ex: *“I try to be loving toward myself when I am feeling emotional pain.”*

The plot below (Figure 10) illustrates the responses to the SCS-SF across groups and time points. Visual inspection of the plot shows a slight, but insignificant, decrease in means across groups from pre-test, YO:  $M=2.99$ ,  $SD=0.87$ ; YMG:  $M=2.92$ ,  $SD=0.92$ ;  $t(103)=1.79$ ,  $p = 0.08$  to follow-up (YO:  $M=2.88$ ,  $SD=0.95$ ; YMG:  $M=2.61$ ,  $SD=0.84$   $t(92)=1.49$ ,  $p = 0.14$ ).

The high score on this scale is 5; the average participant’s responses are just above the halfway mark of 2.5, indicating a small trend toward the positive end of the scale where the average participant exhibits slightly more self-kindness than self-judgment, and slightly more mindfulness and awareness of the shared human experience.

A paired-samples t-test comparing the overall score from pre-test to follow-up for both YMG and YO was conducted; significant results were not found. The lack of

significance suggests that the intervention did not have a significant impact on self-compassion as assessed by the Self-Compassion Scale.

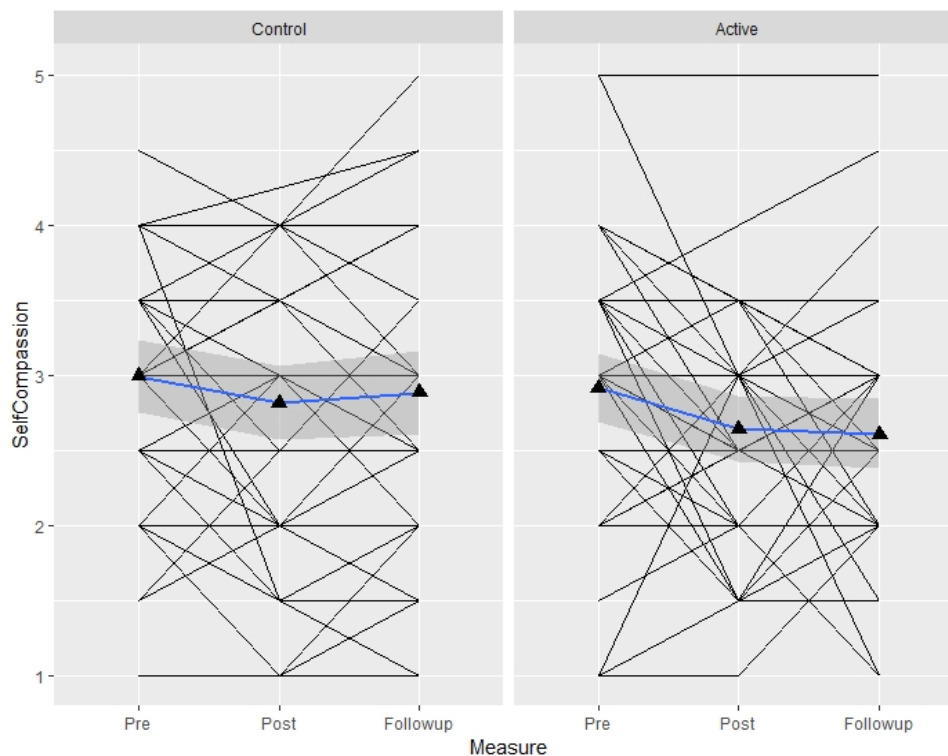


Figure 10. Self-Compassion Scale-Short Form. This figure illustrates an assessment of self-compassion by group; Control (L; Yoga Only) and Active (R; Yoga, Meditation and Gratitude) across time points.

### Grateful Disposition Scale (GQ-6)

The Grateful Disposition Questionnaire-Six-Item Form (GQ-6) is a self-report questionnaire designed to assess the likelihood that people will experience gratitude in daily life. The responses are scored on a Likert Scale ranging from 1 (strongly disagree) to 7 (strongly agree). The GQ-6 has been shown to have good internal reliability. Ex: “As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.”

The plot below (Figure 11) illustrates the responses to the GQ-6 across groups and time points. The plot illustrates a significant increase in means for the YMG group from

pre-test (M=38.11, SD=3.87) to follow-up M=39.61, SD=2.93;  $t(98.34)=-2.24$ ,  $p=0.03$ , as well as between groups for follow-up YO: M=37.21, SD=5.74 and YMG: M=39.61, SD=2.93;  $t(60.01)=-2.48$ ,  $p=0.02$ . Note the high variance for the YO group and the lower variance in the YMG group at follow-up. Statistically significant results were also found for the YO group from pre-test (M=37.22, SD=4.17) to post-test (M=39.51, SD=3.10);  $t(99.63)=-3.25$ ,  $p < .001$ . These results suggest that the intervention had a significant impact on experiencing gratitude in everyday life as assessed by the Grateful Disposition Scale.

The high score on this scale is 42; the average participant's responses are well above the halfway point of 21, indicative of a grateful group who are aware of and often experience gratitude in their daily life.

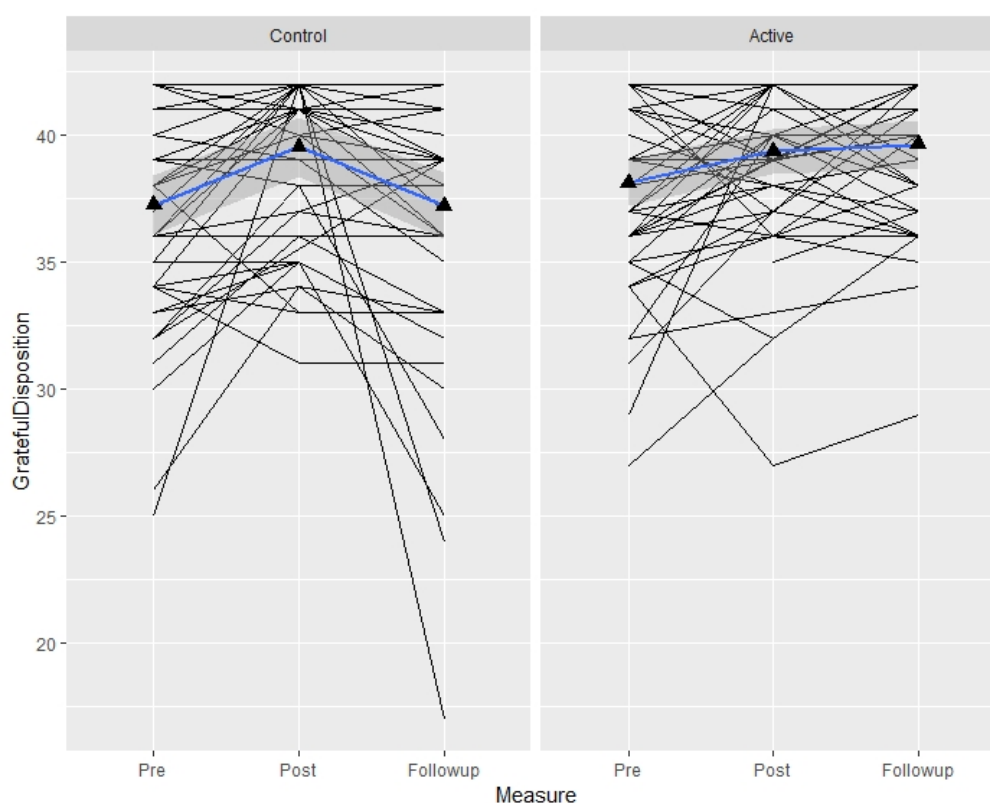


Figure 11. Grateful Disposition Scale (GQ6). This figure illustrates an assessment of gratitude by group; Control (L; Yoga Only) and Active (R; Yoga, Meditation and Gratitude) across time points.

#### Research Question #4

*Report on qualitative data describing characteristics of the target population including their interests, behaviors and needs regarding well-being.*

#### Positive/Negative Effects of the Program

Additional positive and/or negative effects of the program were detailed via qualitative information on the survey and speak to the efficiency and quality of the implementation.

Over half of the respondents (61.86%; n=60) experienced (a) mental health benefits, including a sense of calm, patience, peace and ease. One YO participant reported, a *“A calming feeling of contentment, balance, ease and gratitude”* and a YMG participant noted *“I feel much happier, and relaxed. I realize how much I really have, something I think I knew but took for granted! I feel like the meditation and gratitude replaced anxiety with happiness and a calmness I didn’t have.”* (b) Creating positive habits was also high on the list (36.08%; n=35); two YMG women noted the following: *“If I could marry yoga, I would.... This program has kept me accountable for keeping up with meditation and yoga and gratitude. I really liked having the reminder that these things were non-negotiable”*; and another, *“I meditated daily and wrote a gratitude list daily. I plan to keep both up moving forward, because it generated peace and gratitude to my life. I was already doing yoga, but have a renewed commitment.”* (c) Self-care was also mentioned by many women (20.62%; n=20), including this YO woman: *“The requirement of yoga 2x week initially seemed simple but I was surprised how much effort it actually took. It made me realize how many other tasks I am putting before my own needs/desires and was good to force myself to take the time for yoga, an activity that is just for me. A more dedicated practice also helped me reignite my love for yoga and see how valuable it is in my life.”* Others touted the (d) physical benefits of the practice (14.43%; n=14;), as in *“Doing yoga regularly helped with my back pain and my*

insomnia” and “Hot and warm yoga at a min. of 2x a week helps my joint pain 100%.” Some noted the importance of the felt sense of (e) community and accountability (13.40%; n=13); for example, one woman in the YO group noted the following as a benefit of the program “*Being a part of a community of women that all have a similar goal. To be our best selves,*” another YO woman said, “*I experienced a renewed realization of the power of yoga on my mental, physical, and social well-being. I also appreciated being a part of something positive and powerful. I liked making a commitment and being held accountable. I recognized opportunities and possibilities rather than obstacles and excuses.*” A handful of women cited (f) sleeping better as a perk of participation (6.19%; n=6): “*... I experienced more restful sleep after yoga class, followed by meditation & reflecting back throughout my day about what I'm grateful for. I made time for myself which was most important of all & helped reduce stress.*” A final quote from a YMG participant that exemplifies the nature, depth and breadth of The Balanced Woman, “*Thank you for bringing me into myself, so that I can reach out to others*”.

Many women (40.21%; n=39) indicated no negative effects of participation. Some of the negatives the women referenced centered around working these practices into their daily lives during a busy time of year (December)/time management issues (32.99%; n=32): “*It fell at a really busy/stressful time*” (YMG); and “*Finding the time to fit in yoga!*” Some women cited issues with the app or study requirements (18.56%; n=18); for example, “*It was a little difficult to stay on top of meditating and the gratitude exercises*” (YMG), and another YMG woman noted, “*I'm not very good with technical things so sometimes I had a little difficulty with the app.*” Three women wished they had been in the YMG group!

## Chapter V

### DISCUSSION

The main purpose of this research study was to create and implement a comprehensive health promotion program for women. This chapter includes a discussion of key findings as they relate to the existing literature base on women's health and health promotion, as well as current findings as they relate to yoga, meditation and gratitude practices. The chapter ends with a detailed discussion of study limitations, potential areas for future research, and a concluding summary.

#### **Study Background**

The concept of well-being is of paramount importance to fostering improved physical, mental, and emotional health among women. It is most simply described as “judging life positively and feeling good” (CDC, 2016). Yet, despite this simple definition, the implications of well-being are enormous: indeed, well-being is associated with an improved perception of health, increased longevity, healthy behaviors, decreased mental and physical illness, improved social connectedness and enhanced productivity (CDC, 2016). At the same time, we also know that regular physical activity is tremendously advantageous to women's health, with significant and positive implications for well-being. Unfortunately, research confirms that it can be challenging to maintain a consistent physical activity program. Addressing the barriers that women experience to exercise (i.e. lack of time, access to facilities, child care, safe spaces and finances)

(Kushner & Ange, 2005) may help improve exercise adherence and well-being in women. Therefore, identifying exercise options for women that are feasible and sustainable is a critical component of promoting well-being.

Mind-body therapies such as yoga and meditation have long been considered health promoting efforts with a well-being emphasis (Wolever et al., 2012). Research confirms that these therapies are flexible, non-invasive, associated with very few adverse events, exceptionally cost-effective (and often free), accessible to a wide variety of people in many different circumstances and environments, do not require any equipment or a lot of space, and can be done at any time of day or night (Holger Cramer, Krucoff, & Dobos, 2013; Sobel, 2000; Wolever et al., 2012). In addition, yoga and meditation practices, have been extensively studied and found to have a variety of both self-reported and observed benefits such as reduced stress, anxiety and tension; enhanced well-being, sleep quality, energy levels, self-confidence, and a quieting effect on the HPA axis (i.e., Fight or Flight syndrome) (Cramer et al., 2016; Ross & Thomas, 2010; Sharma et al., 2008).

At the same time, the concept of gratitude, “an acknowledgment that we have received something of value from others” (Emmons & Mishra, 2011) has one of the strongest links to mental health and life satisfaction of all the personality traits. Research confirms that expressing gratitude can have dramatic and long-lasting benefits in a person’s life (Emmons & Stern, 2013). Gratitude practices have been shown to improve and enhance well-being in a variety of ways including helping people cope with both acute and chronic stressors, boosting self-esteem, and, importantly facilitating goal attainment (such as initiating and sticking to a consistent exercise routine) (Emmons & Mishra, 2011). A simple daily gratitude practice known as “three good things” where one reflects and writes three things down for which they feel grateful each day has been shown to have a positive effect on well-being (Lai & O’Carroll, 2017).



While we know that participating in a physical activity program has well-documented health benefits such as reduced risk of disease and enhanced well-being (Huberty et al., 2008), there are mixed findings when it comes to understanding what helps people, and in particular women, stay engaged with and adhere to an exercise program. Some researchers assert that motivation plays an important role (Ryan et al., 1997). It was hypothesized that the intrinsic qualities of the gratitude and meditation practices in particular would serve to multiply internal motivation, enjoyment and personal satisfaction, so that participation improved adherence to all aspects of the program, as it has done in other studies (Huberty et al., 2008).

The current research field includes an abundance of research on yoga, meditation and gratitude practices, though there is no program that effectively combines all three. In this dissertation, an integrated multi-intervention approach, in which participants simultaneously engage in three specific strategies (McGuire, 2012), was proposed to promote and enhance well-being among women. Specifically, this study developed, implemented, and evaluated the feasibility and effectiveness of a comprehensive health promotion effort for women that integrated elements of yoga, meditation, and gratitude practices, to facilitate adherence to this physical activity program. Implications for the promotion of well-being among women via this novel health promotion effort are discussed below.

### **Research Questions**

This chapter contains discussion and future recommendations to help contextualize findings to the following research questions:

1. Develop a yoga, meditation and gratitude intervention designed to enhance well-being in women.

2. Assess feasibility of the yoga, meditation and gratitude intervention, as well as participants' adherence to each program component.
3. Assess changes in well-being from pre- to post-intervention, as captured by responses to the Ryff Scale of Psychological Well-Being—Medium Form (Ryff), Personal Wellbeing Index (PWI), Grateful Disposition Questionnaire (GQ-6) and the Self-Compassion Scale—Short Form (SCS-SF); draw comparisons to the control group.
4. Report on qualitative data describing characteristics of the target population including their interests, behaviors and needs regarding well-being.

The result of this program development was The Balanced Woman; a yoga, meditation and gratitude program designed to enhance well-being in women age 18-65. The Balanced Woman was created and carried out at Balance Yoga & Wellness, a yoga studio in Westchester NY, with 114 participants. The participants were randomized into two groups, active (yoga, meditation and gratitude; n=58) and control (yoga only; n=56). The study lasted 31 days and spanned the following five weeks in December 2018: Week 1 (12/1- 12/7); Week 2 (12/8-12/14), Week 3 (12/15-12/21), Week 4 (12/22-12/28) and Week 5 (12/29-12/31).

In addition to creating and implementing The Balanced Woman, the study also aimed to evaluate program feasibility. The study was feasible, as per the outlines set forth by Bowen et al. (2010), which include a thorough battery of criteria to be met in order to deem a study feasible (2010). The Balanced Woman is a relevant, practical, evidence-based program designed to meet the study's goals of enhancing well-being in women. The intervention was based on changeable behaviors and objectives, the program was acceptable and desirable to the majority of women surveyed as demonstrated by their willingness to recommend the program to a friend or coworker. The program was found to be satisfactory, sustainable and interesting as indicated by the women's intention to participate, and subsequent adherence to the practices even after the program ended.

Adherence to the program components was carefully reviewed as a specific aim of this research program. Participants in both groups were required to do two yoga classes of their choosing each week; 8 in total. Women randomized to the yoga, meditation and gratitude group (YMG) were also asked to complete five gratitude practices and five guided meditations (6 sessions in Week 1) for a total of 20 gratitude practices and 21 meditations throughout the course of the study. The yoga classes were the only requirement for the Yoga Only (YO) group. Notably, the participants adhered to the yoga component of the study exceptionally well, with each week demonstrating an average of above 100% adherence for both groups. Briefly, the average YMG participant completed 125% of the yoga classes, 86.58% of the meditations and 88.24% of the gratitude practices. Detailed descriptive data were reported in Chapter IV and are discussed in great detail below.

Changes in well-being from pre- to post-intervention, as captured by responses to the Ryff Scale of Psychological Well-Being—Medium Form (Ryff), Personal Wellbeing Index (PWI), Grateful Disposition Questionnaire (GQ-6) and the Self-Compassion Scale—Short Form (SCS-SF) were assessed, and comparisons drawn to the control group. Specifically, paired sample *t*-tests were conducted to examine pre- and post-intervention changes in well-being between and within groups.

Statistically significant findings identified from the scales listed above were on the GQ-6 and on the Positive Relationships subscale of the Ryff. These results suggest that the intervention had a significant impact on experiencing gratitude in everyday life as well as on assessment of positive relationships with others. The remaining results are comprehensively discussed in the pages following.

Both quantitative and qualitative data describing the characteristics of the target population including demographics, interests, behaviors and needs regarding well-being was carefully collected and thoroughly assessed; full details are available in Chapter IV and are discussed at length below.

## **Interpretation of the Findings**

Each of the study data points as they relate to the current literature are described in detail below. The sequence begins with three key findings, first highlighting the adherence component of the study as it relates to both the YMG and YO groups. This is followed by an in-depth discussion of insignificant results, and then, notably, the statistically significant outcomes on the Grateful Disposition Questionnaire (GQ-6) and the Positive Relationships subscale of the Ryff. The remainder of the findings are discussed afterwards in the order in which they appear in Chapter IV.

### **Key Finding #1: Adherence**

Health promotion efforts and outcomes are often related to how well participants adhere to regular exercise (Ryan et al., 1997). Motivation varies widely among individuals for myriad reasons, yet it is a key component in beginning and maintaining any exercise program (Kim & Cho, 2013).

Intrinsic motivation is self-determined and elicits personal satisfaction from engaging in the behavior itself; through competence (engaging in challenges and broadening skill sets), and enjoyment (interest in having fun and pursuing stimulating activities). Alternatively, extrinsic motivation is driven by external rewards (i.e., improving appearance) (Ryan et al., 1997). Many researchers note that regardless of initial exercise motives, it is intrinsic motivation that is responsible for long term adherence (Ryan et al., 1997).

Participants were likely to approach the current study with both intrinsic and extrinsic motivations, though it was hypothesized that the personal enjoyment and satisfaction derived from participating would improve adherence to all aspects of the study as it has done in other studies (Huberty et al., 2008).

One way the study evaluated motivation was with the simple question of how important the participants felt well-being was in their life. Almost every single woman

surveyed responded that it was at least very important, which is a nod to their belief in the inherent importance. Further, and importantly, the overwhelming majority of the benefits the women cited from their participation—across groups—were intrinsic in nature. While some reported physical benefits such as diminished pain or enhanced flexibility, far more women cited the internal factors that mind-body practices such as yoga, meditation and gratitude bring about. As one YMG woman put it, *“I feel more calm than I felt in the beginning of the program. I feel as if things bother me less and I am able to focus more on what makes me happy and my well-being. I also feel strong enough to take on new challenges and more open to change in my life.”*

**Yoga, meditation and gratitude (YMG) overview.** In 2012, approximately 21 million US adults practiced yoga and over 9 million US adults meditated in the past year; and the numbers are only on the rise today. Yoga, meditation, and gratitude are all associated with very few if any contraindications and adverse events, and the potential for physiological, mental, emotional, psychological and spiritual benefit is vast (Cramer, Hall, et al., 2016).

Participants in both groups were required to do two yoga classes of their choosing each week; 8 in total. Women randomized to the YMG group were also asked to complete 5 gratitude practices and 5 guided meditations on the free meditation app, Insight Timer each week (6 sessions in Week 1) for a total of 22 gratitude practices and 23 meditations throughout the course of the study. The gratitude practice consisted of the participants reflecting and then recording Three Good Things that happened that day in a journal, a practice well-studied in the literature. An added twist to this established practice was including a specific gratitude intention for participants to reflect on through the course of the day; this intention was coupled with a meditation and purposefully associated with a specific construct of well-being (ex. autonomy). For reference, the intentions and meditations are noted in conjunction with the associated construct below.

Overall, the yoga practice was most closely followed with an average of 10 classes taken over 30-days (125%). The gratitude practice was next with 19.41 days of gratitude reported (88.24%), followed closely by 19.91 meditations (86.58%). Gratitude practice adherence remained consistent as each week fell within a range of 85.17% (4.26 practices in Week 4) to 90.34% completed in Week 3 (4.52 practices). The meditation practice demonstrated a larger range with a low of 75.86% adherence (3.79 sessions in Week 5) to a high of 4.98 session completed in Week 2 (99.66%) (see Table 8).

**Yoga.** Yoga has been extensively studied and reported on in the literature for women's health issues and a variety of psychiatric disorders such as depression, anxiety and schizophrenia, cancer, obesity, pre and post-partum health, multiple sclerosis and asthma. The practice of yoga is cost-efficient and non-invasive, there are few adverse events associated with the practice, high adherence rates and the potential for a positive synergistic effect on mind and body well-being (Cramer, Ward, et al., 2016).

We know that yoga use is on the rise, with an estimated 13.2% of U.S. adults having ever practiced in 2012, versus 7.5% in 1998 (Cramer, Ward, et al., 2016). As such, there is an enormous opportunity to further and more efficiently promote both the overall and mental health benefits of a yoga practice, especially to women who are already interested in and in many cases, practicing yoga already.

Overall, the participants adhered to the yoga component of the study exceptionally well (Table 8), with each week demonstrating an average of above 100% adherence for both groups. Study-wide, the highest adherence was in the YMG group; 132.76% (average of 2.14 classes) in Week 4 (note, the Christmas holidays and associated travel fell during this time period). The lowest adherence was in the YO group; 110% (average of 2.20 classes). Note that the YMG group demonstrated a higher adherence percentage than the YO group for each week; perhaps related to the intrinsic motivation they experienced with the meditation and gratitude practices.

Participants who could not make it to Balance Yoga & Wellness for a class were given the option to complete the yoga requirement via preselected YouTube classes in their own home; more than half of the participants (n=64; 56.14%) took advantage of this flexibility (See Table 9). Interestingly, and in line with the study purpose, the most popular video across both groups was, by far, Self-love with Yoga by Adrienne. Both groups had 19 views for a total of 38 views of this internally-minded vinyasa class. The YO group completed 13 of 14 Weight Loss Yoga classes (92.86%), and 10 of the 13 Power Vinyasa Flow classes (76.92%), classes that are far more extrinsic in nature.

Further research is needed to determine the exact contribution intrinsic motivation can have on adherence to a yoga practice, and whether mind-body practices such as meditation and gratitude can play an important role in improving adherence.

### **Key Finding #2: Insignificant Results**

Interestingly, and despite the wide-scale popularity and positive response to The Balanced Woman—93.10% of YMG participants (n=54) reported at least a slight improvement in well-being—many of the findings as they relate to well-being were statistically insignificant. There are many reasons why some of the results were insignificant when qualitative data would strongly suggest otherwise; a full discussion of limitations and potential avenues forward is explained later in this chapter. The insignificant findings are detailed below.

**Ryff Scale of Psychological Well-Being.** The Ryff Scale of Psychological Well-Being (Ryff) is a 54-item scale focused on measuring several aspects of psychological well-being including autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life and self-acceptance. The highest possible score on this scale is 324; the halfway point is 162. Respondents on average were often somewhere between slightly disagreeing and slightly agreeing on the statements. There was not a significant difference in the scores across groups or time points (see Figure 2).

***Autonomy.*** The gratitude intention for this construct was autonomy, *independent, free from external control or influence*, and was coupled with the *Loving Your True Self* meditation with Lisa Machac.

Those who score high on this 9-item Ryff subscale are independent thinkers who internally regulate behavior and can reject social pressures to think and behave in a specific way. Others rely more heavily on the judgments and opinions of others and often conform to societal pressures. The high score on this scale is 54; the average participant's responses are slightly over the midpoint value of 27, so leaning toward the positive end of the scale where more independent thinking and the ability to reject social pressure takes place. The means for this subscale are the highest of all the Ryff subscales for both YMG (M=34.98, SD=3.27) and YO (M=34.82, SD=4.11) at pre-test, and for YO (M= 34.52, SD=3.12) at follow-up. Significant results were not found when measuring the scores at pre-test, post-test or 30-day follow-up for either group (see Figure 3).

***Environmental mastery.*** The gratitude intention for this construct was Powerful, *feeling in charge of daily responsibilities and current living situation*; the associated meditation was *Picking up the Pieces* with Tony Brady.

High scorers on this 9-item subscale of the Ryff have command over their environment and a firm handle on the complexities of everyday tasks and external activities. Low scorers may have difficulty dealing with everyday responsibilities and tasks and there is a sense of powerlessness over the external world. Both YMG and YO exhibit a slight dip from the pre-test to follow-up values. The high score on this scale is 54; the average participant's responses are slightly over the midpoint value of 27, so leaning toward the positive end of the scale where the average respondent reported more control over their environment. No significant results were found on a paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO (see Figure 4).



***Personal growth.*** The gratitude intention for this construct was Personal Growth, *a desire for continued growth, education and improvement*; the associated meditation was *We are Wonderfully Made –Body Scan* with Tony Brady.

The high scorer on this 9-item Ryff subscale continues to grow, develop, and improve with increasing self-knowledge, awareness and receptivity to new experiences. Others stagnate, may feel bored or disinterested in life with no sense of improvement or development over time. The high score on this scale is 54; the average participant's responses are slightly under the midpoint value of 27, so leaning toward the negative end of the scale where the average respondent reported feeling slightly more stagnant and bored; perhaps noticing somewhat less growth and development over time. The mean personal growth score at follow-up for the YMG group represents the lowest mean of subscales for the YMG group (M=26.88; SD=2.81).

A paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO. Significant differences were not found between groups or across time points (see Figure 5).

***Purpose in life.*** Purpose, *a sense of direction and meaning in life*, was a gratitude intention with the following associated meditation, *Core Alignment Meditation* by Brandon Alter.

The high scorer on this subscale of the Ryff has goals and purpose, a sense of direction in life, feels there is meaning in life. The low scorer lacks meaning, goals, direction, purpose and aims. The high score on this scale is 54; the average participant's responses are right around the halfway mark of 27, indicating that the average respondent neither specifically has nor lacks direction in life, definitive goals and/or a clear-cut purpose. The mean for this subscale is the lowest in the sample at pre-test for YMG (M=28.11, SD=3.82).

A paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO. No significant differences were found in the analysis of this subscale (see Figure 7).

***Self-acceptance.*** Self-acceptance (*feeling generally confident and positive about yourself*) was a gratitude intention for the study, coupled with the meditation, *The Open Heart Meditation*, by Vidyamala Burch.

High scorers on this Ryff subscale tend to have a positive attitude toward the self, acknowledging and accepting both good and bad qualities. Low scorers may feel dissatisfaction with the self and with the past, and may wish to be different than what they are. The high score on this scale is 54; the average participant's responses are firmly above the halfway mark of 27, indicating that the average respondent has a generally positive attitude toward the self. In fact, the self-acceptance scale has the second highest mean for the Ryff subscales, second to only autonomy for YMG at pre-test, and is the highest mean for the YMG group at follow-up ( $M=35.94$ ,  $SD=3.41$ ). The YO group has higher means on two other subscales at pre-test (autonomy and environmental mastery) and on autonomy at follow-up.

A paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO; no significant values were observed as a result of these comparisons (see Figure 8).

**Personal Well-Being Index.** The Personal Well-Being Index is a single item measure of life satisfaction. It was coupled with a gratitude intention of Life Satisfaction, *feeling satisfied with your life as a whole*, and a Sarah Blondin meditation entitled, *Honoring Life*.

The high score on the Personal Well-Being Index scale is 10; the average participant's responses are below the halfway mark of 5, indicating some dissatisfaction with life and personal circumstances for the average respondent. Significant results were not observed for these analyses (see Figure 9).

**Self-Compassion Scale-Short Form (SCS-SF).** Self-compassion is an integral piece of well-being, consisting of three principal elements: self-judgment versus self-kindness (being warm and understanding toward ourselves when we suffer or fail vs ignoring our pain and piling on self-criticism), isolation versus common humanity (suffering is part of the shared human experience—not something that happens to me alone), and over-identification versus mindfulness (a balanced approach to negative emotions so that feelings are neither suppressed nor exaggerated) (Hall et al., 2013). Additionally, nurturing self-compassion may encourage positive health behaviors, partly due to a link to adaptive emotions (Sirois et al., 2015). Interestingly, people experiencing high self-compassion, describe lower levels of psychological suffering including anxiety, depression and stress (MacBeth & Gumley, 2012), in addition to beneficial qualities such as sensed competence, intrinsic motivation and life satisfaction (Neff, 2003).

There were three associated gratitude and meditation practices to link to each of the principal elements; (a) Mindfulness, *A balanced, open-minded approach to negative emotions*; meditation was *Foreground and Background of Mindfulness* with Stephen Davies, (b) Common humanity, *suffering is part of the shared human experience*; connected meditation was *Just Like Me Meditation* by Sean Fargo, and (c) Self-kindness, *feeling loving toward yourself in the face of suffering or failure*, with a *Loving Kindness* meditation by Lance Isakov.

This 12-item measure of self-compassion was included in the study to assess self-compassion in individuals across the time points. The SCS-SF is scored on a 5-point Likert Scale where 1 is Almost Never and 10 is Almost Always. The high score on this scale is 5; the average Balanced Woman participant's responses are just above the halfway mark of 2.5, indicating a small trend toward the positive end of the scale where the average participant exhibits slightly more self-kindness than self-judgment, and slightly more mindfulness and awareness of the shared human experience. A paired-samples t-test comparing the overall score from pre-test to follow-up for both YMG and

YO was conducted. This construct was included as an important component of well-being, though significant results were not found upon analysis (see Figure 10).

In summary, there were many insignificant findings, which are contradictory to much of the data collected over the three study time points. Further research is needed to determine more effective programs and analyses to move the research forward in this area.

### **Key Finding #3: Significant Results**

The significant findings in the study were found on the Grateful Disposition Questionnaire (GQ-6) as well as the Personal Relationships subscale of the Ryff; both are discussed below.

**The Grateful Questionnaire-Six-Item Form (GQ-6).** The concept of gratitude, “an acknowledgment that we have received something of value from others” (Emmons & Mishra, 2011, p. 248) has one of the strongest links to mental health and life satisfaction of all the personality traits. Research confirms that expressing gratitude, such as was done in this study, can have dramatic and long-lasting benefits in a person’s life (Emmons & Stern, 2013). Gratitude practices have been shown to improve and enhance well-being in a variety of ways including helping people cope with both acute and chronic stressors, boosting self-esteem, facilitating goal attainment and enhancing physical health (Emmons & Mishra, 2011). The intention for this construct was Gratitude, *thankful appreciation for the good in your life*, with *Metta Meditation, a Practice of Loving Kindness* with Manoj Dias.

The GQ-6 is a self-report questionnaire designed to assess the likelihood that people will experience gratitude in daily life. The responses are scored on a Likert Scale ranging from 1 (strongly disagree) to 7 (strongly agree). The high score on this scale is 42; the average participant’s responses are well above the halfway point of 21, indicative of a grateful group who are aware of and often experience gratitude in their daily life.

The YMG group enjoyed a statistically significant increase in the mean GQ-6 score from pre-test (M=38.11, SD=3.87) to follow-up M=39.61, SD=2.93;  $t(98.34)=-2.24$ ,  $p=.03$ , as well as between groups for follow-up YO: M=37.21, SD=5.74 and YMG: M=39.61, SD=2.93;  $t(60.01)=-2.48$ ,  $p=.02$ . Note the high variance for the YO group and the lower variance in the YMG group at follow-up indicating high variability in the YO sample. Statistically significant results were also found for the YO group from pre-test (M=37.22, SD=4.17) to post-test (M=39.51, SD=3.10);  $t(99.63)=-3.25$ ,  $p < .001$ .

These results suggest that the intervention had a significant impact on experiencing gratitude in everyday life as assessed by the Grateful Disposition Scale. Interestingly, studies show that gratitude can be enhanced through interventions designed for other purposes. Meditation has been found to promote gratitude as a function of mindfulness. Interventions directed at improving the mind body relationship may also help gratitude flourish (Emmons & Stern, 2013). So, while the primary purpose of this research was not to enhance gratitude, perhaps the yoga, meditation and gratitude practices had an unanticipated positive effect.

***Positive relationships.*** Well-being is associated with self-perceived health, longevity, healthy behaviors, mental and physical illness, social connectedness and productivity. Measuring, tracking and promoting well-being can be useful for those involved in disease prevention and health promotion. Of note, having supportive relationships is one of the strongest predictors of well-being, resulting in a significant positive effect on the construct (CDC, 2016). The gratitude intention was Relationships, *participating in pleasant, warm and gratifying relationships*, with a *Loving Kindness Practice* meditation by Naomi Goodlet.

Those that score high on the Positive Relationships Ryff subscale have pleasant and gratifying relationships, they can be very empathetic and take a genuine interest in the welfare of others. Low scorers on this scale tend to have few close relationships and may find it challenging to be empathetic, warm and open; they are often isolated and

frustrated in their relationships. Though significant findings were not identified on the well-being scales, it remains incredibly important that these women had an increase in their assessment of positive relationships with others.

A significant result was observed on the positive relationship subscale on the Ryff. The plot shows a slight, but insignificant, dip in the YO group means from pre-test (M=32.11, SD=4.93) to post-test (M=31.49, SD=4.25) to follow-up (M=30.95, SD=4.20). The active YMG group displays a very slight dip in the mean at post-test (M=32.21, SD=4.03) from pre-test (M=32.91, SD=4.44); the numbers went back up to pre-test values by follow-up (M=32.80, SD=3.74). The means between groups are fairly similar at pre-test, YO: 32.11 and YMG: 32.91, as well as at post-test, YO: 31.49 and YMG: 32.21. Importantly, there is a statistically significant difference between groups at the follow-up visit, with the YMG group (M=32.80, SD=3.74) reporting more positive relationships than the YO group, M=30.95, SD=4.20);  $t(91)=-2.24$ ,  $p=.03$ .

The high score on this scale is 54; the average participant's responses are just over the midpoint value of 27, so leaning toward the positive end of the scale where the average respondent enjoys more positive and gratifying relationships.

A paired-samples t-test was conducted to compare the overall score from pre-test to follow-up for both YMG and YO. There was a statistically significant difference in the scores for YMG at follow-up as noted above, the remaining interactions were insignificant, both across groups (YMG compared to YO) and within groups across time points (ex YO from pre-test to follow-up). These results suggest that the intervention had a positive significant impact on personal relationships as assessed by the Ryff.

### **Additional Findings**

**Demographics.** Demographic information was collected at pre-test; the groups were quite evenly matched across sub categories. See Table 11 for full details on the

following categories: age, race/ethnicity, relationship status, highest level of school completed, employment status, children under 18 living at home.

Overall, the sample of women in this study was largely White women, 40 years and older, who are married, with at least a 4-year college degree. They are mostly employed and working full time with at least one child under the age of 18 living at home. These results are largely in line with a 2012 study of yoga practitioners which found that lifetime yoga practitioners were more likely younger, non-Hispanic White females that were college educated, higher earners and in better health than their counterparts who had never practiced yoga (Cramer, Ward, et al., 2016).

We know that women are not as likely as men to engage in regular physical activity, and the portion of women that do exercise drops with age from 38% of women age 18-25 exercising to only 12% of women 75 and older. Women of color, low income and low education are more likely to report low levels of physical activity (DHHS, 2011). Low activity levels can lead to an array of health problems for this population, as such, adherence to a physical activity program such as this is of utmost importance.

**Health assessment (self-report).** Health and wellness information was collected at three time points; pre-test (n=111), post-test (n=112) and at the 30-day follow-up (n=97).

**Importance of well-being.** Well-being has many definitions; some describe it simply as “judging life positively and feeling good” (Veenhoven, 2008, p. 2). The CDC (2016) has not yet reached a consensus, but their definition typically includes the “presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning” (p. 4).

Almost every person in the study reported that well-being was either extremely or very important to them. Here the observed benefit of the program came not at post-test, but 30-days after, indicative of a lingering positive effect of study participation. Of note, the numbers of YMG women who reported well-being as extremely important began at

73.21% (n=41), went up to 74.14% (n=43) at follow-up and reached peak high at the 30-day follow-up visit with 45 women citing well-being as extremely important (86.54%). And while the groups were fairly similar at pre-test, the YMG women (n=45; 86.54%) rated well-being as extremely important far more often than those in the YO group did (n=33; 71.74%) (see Table 2).

**Physical health.** In a study by Birdee and colleagues (2008), yoga practitioners were significantly ( $p=.005$ ) more likely to report their health as good, very good or excellent (95%), than those who did not practice in the past year (87%). Additionally, Sibbritt et al. (2011) found that women who often used yoga reported better general health than their counterparts who rarely did.

Exactly in line with this research, the number of women reporting that their overall physical health was good, very good or excellent was 93.69% at pre-test and rose up to 95.54% at the post-test before an interesting drop to 90.72% at 30-day follow-up (Table 3). Further research is needed to more fully understand the dynamic interaction of physical health over the course of a study like this.

**Bodily pain in past four weeks.** Mind-body practices such as yoga and meditation are often used to benefit their general health and well-being. In a 2012 study by Cramer, Ward, et al. (2016), yoga was practiced primarily to benefit general wellness, disease prevention, boost energy and/or immune function, and to relieve health problems associated with back pain, stress and arthritis. To date, many studies have found a positive effect of meditation on a variety of conditions including hypertension, pain (both physical and psychological), insomnia, autoimmune disorders, irritable bowel syndrome and symptoms related to epilepsy, premenstrual syndrome and menopause (Cramer, Hall, et al., 2016; Sharma et al., 2008), many of which directly, and importantly negatively, affect women ages 18-65.

The number of YMG women reporting no bodily pain rose steadily from baseline (n=5; 8.93%), to 13.79% at follow-up (n=8), and more than doubled at the 30-day



follow-up with 21.15% reporting no bodily pain (n=11). Far more YO women reported no bodily pain at pre-test (n=13; 23.64%) than YMG women (n=5; 8.93%), though YMG women had a higher rate of reporting no bodily pain (n=11; 21.15%) than did the YO women (n=6; 13.04%) at 30-day; a reversal from the baseline comparison (see Table 3).

**Physical health problems in past four weeks.** On average, women live 5 years longer than men, yet they report more physically and mentally unwell days than men. In 2007–2009, an average of 4.0 days per month for unwell physical health and 3.9 days per month for unwell mental health were reported for women, in contrast to men reporting 3.2 physically unhealthy days and 2.9 mentally unhealthy days (DHHS, 2011).

There was a steady rise in the number of women reporting that any physical health problems were not at all disruptive at pre-test (n=29; 51.79%) to 63.79% (n=37) at follow-up and finally 67.31% (n=35) at the 30-day follow-up. This corresponded to a steady decrease in not so disruptive problems from 33.93% at baseline (n=19) to 17.31% at 30-day (n=9). The YO group saw the opposite effect; a decrease in the number of women reporting not at all disruptive problems across the time points with the large majority at pre-test noting not at all disruptive (n=39; 70.91%) to 55.56% (n=25) at 30-day. There was also an interesting increase in the number of YO women citing somewhat disruptive problems at baseline (n=3; 5.45%) to 13.33% at 30-day post (n=6) (see Table 3).

**Eating habits.** The number of YMG women reporting eating at least moderately healthy steadily rose from baseline (n=45; 80.36%) to follow-up (n=51; 87.93%) and peaked at the 30-day follow-up visit with 90.38% of women reporting at least moderately healthy eating habits (n=47). The YO numbers across the time points and categories for eating habits were fairly consistent. The large majority reported moderately healthy eating, peaking at follow-up with 41 women (75.93%). Here the numbers were consistent across groups at baseline and post-test; at the 30-day follow-up, over 90% of YMG

women reported at least moderately healthy eating habits (n=47; 90.38%) as compared to 84.78% of the YO group (n=39) reporting the same (see Table 4).

**Hours of sleep each night.** Yoga can be an effective tool to use as a health promotion strategy in the prevention and management of chronic disease as suggested by Alexander and others (2013), with study results indicating that a yoga practice leads to improved physical function, enhanced mental and emotional states, better quality sleep and other lifestyle improvements.

The numbers were consistent across time points and groups with the majority of women reporting 7-8 hours of sleep a night (pretest: n=36; 64.29%; post-test: n=40; 68.97% and 30-day follow-up: n=36; 69.23%) (see Table 4).

**Currently smoke cigarettes.** The large majority of participants in this study do not smoke cigarettes (AMT). There were no important differences between groups, only three total respondents (2.70%) smoke cigarettes (see Table 4).

**Alcoholic drinks each week.** Many YMG women do not drink any alcohol at all; these numbers were quite consistent around 30% across the time points. Overall, the YMG women on average drank less as the study went on, in particular, as the numbers for 9-12 drinks each week decreased (10.71% at pre-test to 3.85% at 30-day), there was a corresponding rise in those drinking 5-8 drinks each week from 7.14% at pre-test to 19.23% at 30-day. There were no major differences for YO across time points, or between groups (see Table 4).

**Mental health.** Mental health; defined as the “state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community” (WHO, 2014, p. 1), is one of the Top Ten concerns for women as defined by WHO. Helping women understand and address mental health issues is vital (Bustreo, 2015). The existing literature base suggests that psychological problems including stress, anxiety and depression can benefit from a yoga practice (Kuntsevich et al., 2010).

Improvements in overall well-being, happiness and life satisfaction can be seen as well (Woodyard, 2011).

A total of 65.45% of YO women (n=36) reported at least very good mental health at pre-test in comparison with 57.14% of YMG women doing the same (n=32). YMG participants reporting their mental health as excellent remained quite steady across the time points, between 12-13%. Those reporting very good mental health peaked post-test with 56.90% (n=33), as compared to 44.64% (n=25) at pre-test, and 50% (n=26) at 30-day post. Mental health that was at least very good was consistent across the time points in the YO group; 64.45% (n=36) at baseline; 68.52% (n=37) at follow-up, and 64.44% (n=39) at 30-day post. Numbers were quite equal across groups and timelines, except that the number of women reporting excellent mental health was highest in YO (n=11; 23.91%) as compared to YMG (n=7; 13.46%) (see Table 5).

**Feeling calm and peaceful.** Yoga has been shown to have immediate positive effects such as reducing anxiety and improving social, emotional and spiritual well-being (Ross & Thomas, 2010).

Many YMG women reported feeling calm and peaceful most of the time; with a noted increase from pre-test (n=20; 35.71%) to 30-day post (n=29; 55.77%). There was a similar pattern for the YO group where feeling calm and peaceful most of the time increased across time points; 27.27% of pre-test women (n=15) up to 53.33% of 30-day post women (n=24). At the follow-up visit, most of the time was considerably higher for YMG women (n=30; 51.72%) than YO women (n=17; 31.48%). The numbers at the 30-day follow-up were not very different across groups (see Table 5).

**Mental health problems in the past four weeks.** The YMG group saw a pleasant increase in the number of women reporting mental health problems that were not at all disruptive across time points. The low was at baseline (n=20; 35.71%), peaking at follow-up (n=37; 63.79%) and then dropping slightly (though still higher than baseline) at the 30-day post visit (n=30; 57.69%). The majority of YO women (n=23; 51.11%)

reported not at all disruptive mental health problems at the 30-day post visit, compared to just 32.73% reporting not at all at baseline (n=18). At follow-up, YMG women (n=37; 63.79%) cited not at all disruptive problems far more than their YO counterparts (n=21; 38.89%); a difference of 24.90%. Further, 91.38% of YMG women (n= 53) found any mental health problems to be not so disruptive or not at all disruptive, in comparison to 77.78% of the YO group (n=42) (see Table 5).

**Self-report yoga past 30-days.** The numbers at pre-test are quite equal across groups. Same with follow-up, though the YMG group (n=14; 24.14%) saw slightly more 12+ yoga classes than YO (n=9; 16.67%). At the 30-day follow-up, fewer YMG women (n=5; 9.62%) reported doing no yoga than the YO women (n=7; 15.56%). YMG women doing 9+ yoga classes (n=15; 28.85%) was higher than the 17.78% of YO women (n=8) (see Table 1).

Interestingly, the amount of 30-day post women in the YO group doing no yoga (n=7; 15.56%) went almost to the baseline number of women reporting no yoga (n=9; 16.36%). The number of women doing between 5-12 yoga classes went from 40% at baseline (n=22), peaked at 74.07% at follow-up (n=40) and then bottomed out at 40% 30-day post (n=15). The yoga practice seemed to not have created as strong of a habit for YO as it did with the YMG group. See adherence above for a detailed discussion of the potential impact of intrinsic motivation.

**Self-report meditation past 30-days.** The overall percent of the population is very small at just 4.1% having meditated in the past year (Cramer, Hall, et al., 2016). This gap indicates enormous potential to get more US adults, and women in particular as they are more likely to engage in this behavior in the first place, to establish and reap the benefits of a meditative practice.

Almost half of the YMG pre-test women (n=27; 48.21%) and just over half of the YO women (n=28; 50.91%) did not practice meditation at all in the 30-days prior to study start. Not surprisingly, this number is considerably higher than the sample of a

general population described above (as opposed to a group of women surveyed from a yoga studio). This number dropped down to zero at post-test and only rose up to 9.62% at the 30-day follow-up visit (n=5); a number less than  $\frac{1}{5}$  of the pre-test amount.

As expected, the YMG women have much higher numbers of meditating than the YO group does. At the 30-day post visit, far more YO women (n=18; 40%) reported no meditation in the past 30-days than in the YMG group (n=5; 9.62%). Most of the YMG women (n=21; 40.38%) did 1-4 meditations. Interestingly, both groups were fairly equivalent for 12+; YMG was 23.08% (n=12) and YO was 22.22% (n=10) (see Table 1).

**Self-report gratitude practice past 30-days.** Many of the pre-test YMG women did not have an existing gratitude practice (n=18; 32.14%), this number fell to zero at the follow-up visit and then inched up to 15.38% (n=8) at 30-days post; less than half of the baseline amount.

Similarly, many of the pre-test YO women did not have an existing gratitude practice (n=24; 43.64%). This steadily decreased to 38.89% at follow-up (n=21) and finally to 37.78% (n=17) at 30-days post. Of note, there was a big jump in the amount of YO women practicing gratitude 12+ times from baseline (n=5; 9.09%) to follow-up (n=9; 16.67%) and finally peaking at 30-days post with 24.44% of women (n=11) reporting practicing gratitude 12+ times in the past 30-days.

At 30-day post, 40.38% of YMG women (n=21) practiced gratitude at least 12 times as compared with 26.67% of YO women (n=12). Well over double the YO women (n=17; 37.78%) did not practice gratitude at all in comparison with the YMG women (n=8; 15.38%). See Table 1. Further research is needed to more fully understand the connection between a gratitude practice and subsequent well-being benefits.

**Feasibility.** This is a feasible program with a tremendous amount of flexibility for a wide variety of people to participate in. The yoga classes can be performed in a studio or at home, alone or with others; many of these options are completely free of cost. Meditation can similarly be practiced in any number of ways and places; guided or not, in

the house, on a train, at the beach, in a parked car etc. ... the possibilities are endless. One can choose to sit and simply watch the breath, though there are numerous free guided meditation applications available on a variety of electronic devices, such as Insight Timer and HeadSpace. Similarly, the gratitude practice takes only time, no monetary cost is involved. The study is low to no cost and can be adapted for a variety of situations, including completing the yoga classes through a free streaming system online at home. The study is very easily replicated as well as completely appropriate and adaptable to a wide range of people—different ages, genders, those of varying socioeconomic backgrounds and a variety of health conditions could benefit from implementation of this program. Further, the initial time commitment is only 30-days, so if the program doesn't resonate with the person, they can easily discontinue knowing that they have not invested an abundance of time, money or attention into a program that is not suitable for them.

The Balanced Woman directly addresses the barriers women most commonly cite to exercise such as scarcity of time, no access to facilities, cost, lack of child care or a safe environment (Kushner & Ange, 2005). As such, the study was found to be feasible, in accordance with the standards set forth by Bowen et al. (2010). Bowen et al. state that behaviors and objectives must be changeable; these criteria were easily met, as well over half of the participants at baseline did not have a yoga, meditation, or gratitude practice in the 30-days prior to study start, thus highlighting the great opportunity to introduce the women to these healing and often life-changing practices. A subsequent change in behavior was evidenced by the increased number of women who participated in these practices at study end.

The program was relevant to the target population; notably, every pre-test participant rated well-being as at least moderately important in their life, with almost  $\frac{3}{4}$  indicating that it was extremely important. Further, this comprehensive mind-body approach is very likely to appeal to women who are already interested in health-related

matters as evidenced by the large majority of pre-test women reporting their physical and mental health was already good, very good or excellent.

The program was found to be acceptable/desirable as evidenced by the large majority of women who would recommend The Balanced Woman to a friend, including almost all of the YMG women (98.04%, n=50). The study was also found to be quite practical, as the program was easily integrated into the existing infrastructure at Balance Yoga & Wellness.

Program demand and satisfaction, perceived sustainability and interest were evaluated and shown to have a positive outcome as seen by almost all of the participants (96.36%, n=106) planning to continue their yoga practice, and the overwhelming majority of YMG participants planning to meditate (84.48%, n=49) or continue their gratitude practice (72.41%, n=42) in the future. The 30-day follow-up outcomes showed that almost 87.3% (n=85) of the participants continued their yoga practice, 76.29% continued meditation (n=74) and 74.23% practiced gratitude (n=72).

The perceived impact of the study was remarkably positive with well over  $\frac{3}{4}$  of the women (82.14%, n=92) across groups reporting that participation at least slightly improved their well-being. Importantly, the overwhelming majority (91.53%, n=54) of the YMG group reported at least a slight improvement in well-being as compared to 71.70% of women in the YO group (n=38) reporting the same. Overall, The Balanced Woman easily met all of the requirements of feasibility as set forth by Bowen et al. (2010).

**Positive/negative effects of the program.** The program was met with very positive qualitative feedback from participants across both groups; these reactions speak to the efficiency and quality of implementation. Over half of the respondents (n=60, 54.55%) experienced mental health benefits, including a sense of calm, patience, peace and ease. Others commented on how the program helped them to create and maintain positive habits (n=35; 31.82%); self-care was mentioned by many women (n=20;

18.18%). Others touted the physical benefits of the practice (n=14; 12.73%), some noted the importance of the felt sense of community and accountability (n=13; 11.82%), and a handful of women cited sleeping better as a perk of participation (n=6; 5.45%).

Many women (n=39; 35.14%) indicated no negative effects of participation. Some of the negatives the women referenced centered around working these practices into their daily lives during a busy time of year (December)/time management issues (n=32, 28.83%), some women cited issues with the app or study requirements (n=18, 16.22%); three women cited their randomization as a negative as they wished they had been in the YMG group!

### **Implications**

There are many gaps in the literature concerning women's health, well-being, self-compassion, exercise adherence, mind-body practices and more; this research includes important qualitative and quantitative information about a large sample of women and their experiences as they went through a yoga, meditation and gratitude practice program designed to enhance well-being in women. Valuable insight was gained in the evaluation and analysis processes that can be effectively utilized to more fully understand these practices and the effect they have on women.

Future research might also build upon the wealth of descriptive and analytical information provided in this study. For example, many women in their comments mentioned the importance of a felt community and how they enjoyed participating with like-minded women. Perhaps future studies can incorporate a more social component to a study where participants can meet weekly, do a yoga class and then participate in the meditations all together. As one YMG participant noted, "doing the meditations in a group setting at the end of yoga would be wonderful...."



The average participant's response on many of the scales typically fell right around the mid-point of the scale, where things are admittedly not awful, but also the women did not seem to be flourishing in any real way (ex: purpose in life and personal growth). More programs are needed to study, understand and address women's specific needs as they relate to mental health, and perhaps include a measure of flourishing in future studies.

Great lengths were taken to minimize any potential bias, including but not limited to: broadly offering the program to all female yoga students at Balance Yoga & Wellness, as well as including women who are new to the studio; not requiring students to take any specific yoga classes (i.e. ones taught by a specific instructor); choosing a variety of yoga classes for the optional home substitution classes so that all levels, moods and fitness abilities were accounted for (i.e., restorative yoga, gentle yoga, vinyasa flow etc...), as well as a variety of meditations and gratitude suggestions that would not exclude any group of women. It is possible that this flexibility very likely contributed to the high adherence rate across the practices, though future research might investigate further if this flexibility is truly beneficial in creating lasting habits.

Future research may consider alternative ways of addressing the barriers that women experience to exercise; lack of time, monetary costs, limited access to facilities, child care and safe spaces (Kushner & Ange, 2005), in an effort to improve exercise adherence and health outcomes for this population, and to develop and implement future research studies to promote health and well-being for women.

### **Limitations**

There were several limitations to the study. Importantly, there was very likely contamination bias between groups. Contamination bias is the result of control participants who are exposed in some way to the intervention conditions. This type of

bias typically, as is likely the case in this study, directs any treatment effect toward the null hypothesis. Indeed, there were countless opportunities for the active group participants to interact with the control group before, during and after class at the yoga studio. During these interactions, information may have been shared, behavior changes both modeled and encouraged and new social norms promoted (Simmons et al., 2015). This particular bias could have been avoided or at least limited had there been means to have the study procedures take place in two different studios, one for the active group and one for the control group. Future research might include an assessment of contamination bias to determine if it was present and potentially responsible for skewed results.

The majority of the participants were already very active at pre-test, as evidenced by the large number of women (n=95; 85.59%) participating in at least one non-yoga activity in the past month. As such, the women were already predisposed to activity, and this likely contributed to the insignificant effect of the program on their well-being; it wasn't that much of a difference from what they were already doing. Future research might focus on a sample of less active women or perhaps include a control group of inactive women to determine if there were any significant differences in well-being between groups.

In addition to the population of active women that enrolled in this study, there is also an issue of enrolling a self-selecting population in these kinds of studies. As many yoga practitioners are White, college-educated females, these very women are drawn to enrolling in them. More studies are needed to better understand the barriers for other populations to partake in these practices; and to meet people where they are so that these practices as easy to participate in as possible.

It would have been interesting to assess the potential impact body image had on the participants. Scholars find that yoga can provide women with the opportunity to nurture a positive relationship with their body (Mahlo & Tiggemann, 2016). Further, the mechanics of how yoga positively influences weight-related outcomes likely has more to do with

just simple exercise (Ross, Friedmann, Bevans, & Thomas, 2012). This speaks to the fact that beyond the physical asana practice of yoga, people respond to these mind-body practices on a deeper level. The complex interactions between well-being and body image are incompletely understood; future researchers might want to include measures of body image and disordered eating in their work moving forward.

The sample was not overly diverse. Though representative of the community, the large majority of participants were non-Hispanic, well-educated, married White women (27.93% were not Caucasian; 12.61% were Hispanic). The researcher went to great lengths to recruit from a wide base, including from the current list of students at Balance Yoga & Wellness, through online advertisements on Facebook, Instagram, three other social media websites specific to the Larchmont, NY community (MeetUp, NextDoor and Burbio), The Loop, a local online news outlet, and through fliers distributed via partnerships with local community organizations. Yet, the population was still relatively homogenous. As such, generalizability of the results as a health promotion effort to other groups such as men and more diverse racial and ethnic communities is limited. Perhaps future research might be done outside of a yoga studio, where access to a broader population is available, for example a local community center.

Many of the participants (n=32, 32.99%) noted that the timing of the program was difficult as it fell during a very stressful and busy time of year, December. Perhaps future studies could run programs like this during more opportune times of year, such as January when many are emphasizing health and well-being already, or in Spring as people have an inclination toward renewal and might like to re-energize their mind-body practices.

Self-report data were as limited as possible, with the automation of yoga and meditation done electronically, only the gratitude practice was self-reported. However, this information cannot be verified and may contain bias and/or inaccurate information.

Perhaps future research can explore ways to automate the assessments of adherence to practices that are done outside of a controlled environment.

There were some study design and technical limitations that might have negatively influenced the primary outcome measures, such as periodic difficulty with the meditation app both from technical issues on Insight Timer's end, as well as a steep learning curve for the participants to get accustomed to the software. Future research might have a small demo or lesson for all of the participants to ensure proper utilization of any study software. As one YMG participant noted, "*A brief group or webinar orientation would have been handy to iron out the logistics.*"

Another limitation was the questionnaire set up on Survey Monkey, the software used to deliver, capture and collate the study responses; the layout at times was difficult to follow, specifically for the Ryff which is quite a long scale (54 items). The questionnaires took most women approximately 15 minutes to complete, and the number of women completing them declined in particular at the 30-day follow-up (n=97). Of note, the YMG group seemed more likely to respond to the final survey (n=52) than the YO group (n=45), despite encouraging the YO women specifically to complete the survey as only once they did would they have access to the full Balanced Woman program.

Further, the study did not include a third control group that did not participate in any of the practices. Perhaps there would be interesting insight gained from a comparison to this type of age and gender-matched control group; a thought for future researchers with the time, finances and resources to do so.

There were several limitations in the current research, but importantly, they represent avenues to move forward in future research so that researchers may have a tangible impact on the health and well-being of the communities in which we live.

## **Conclusions**

The main purpose of this research study was to develop, implement, and evaluate the feasibility and effectiveness of a comprehensive health promotion effort for women that integrated elements of yoga, meditation, and gratitude practices, to facilitate adherence to this physical activity program. Implications for the promotion of well-being among women via this novel health promotion effort were also assessed.

The Balanced Woman was found to be feasible and the yoga practice was exceptionally well adhered to. Enhanced gratitude and positive relationships were identified as statistically significant findings in the analysis. This study lays important groundwork for larger scale research to create and subsequently implement successful mind-body health promotion programs for women. Programs that begin on a small scale can have a positive widespread impact; from “healthy cities evolve healthy countries and, ultimately, a healthier world” (WHO, 2018, p. 5).

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## Appendix A

## Glossary

**BIKRAM YOGA:** A specific set of 26 postures and 2 breathing exercises designed to relax, strengthen and stretch every muscle, ligament, tendon and joint in the body. Performed in a room heated to 105°-110°.

**BIKRAM YOGA EXPRESS:** The same practice as the traditional Bikram Yoga series, but in a 60-minute format. It includes all 26 postures and 2 breathing exercises. Performed in a room heated to 105°-110°.

**HOT VINYASA:** A form of flow yoga that will improve mental and physical strength, flexibility and stamina. Performed in a room heated to 95°.

**HOT VINYASA WITH OPTIONAL GUIDED MEDITATION:** 60-minute flow yoga class, linking breath to movement, and designed to improve mental and physical strength, flexibility and stamina. Wind down with an optional 30-minute guided meditation for complete relaxation and stress reduction.

**GRATITUDE:** Thankful appreciation for the good in your life.

**GRATITUDE PRACTICE; “THREE GOOD THINGS”:** A simple daily gratitude practice where one reflects and writes down three things for which they feel grateful each day.

**MEDITATION:** A wide variety of distinct techniques and intentional practices which ideally lead to heightened awareness and a more deeply connected sense of self.

**RESTORATIVE YOGA:** A prop-supported practice that slows down and deeply relaxes the body through passive stretching and long holds.

**SELF-COMPASSION:** An integral piece of well-being, consisting of three principal elements: self-judgment versus self-kindness, isolation versus common humanity and over-identification versus mindfulness (Hall et al., 2013).

**SLOW FLOW VINYASA:** A slowed-down version of your typical vinyasa practice! Moving mindfully with the breath, the focus is on safely transitioning through postures to build strength, balance and flexibility.

**VINYASA FLOW:** Breath is linked with movement in this vinyasa flow class. Students will learn proper alignment, form, better understand breath work and get an amazing full body - and mind! - workout.

**WELL-BEING:** “The presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning” (CDC, 2016).

**YIN YOGA:** A yoga practice consisting of long-held, passive postures designed to target the deep, connective tissues of the body for a release of tension and stress.

**YOGA:** An ancient discipline that is often referred to as a “moving meditation”; with the ultimate goal of achieving union and balance of mind, body and spirit (Iyengar, 1979).

## Appendix B

## Recruitment Script

Hello! My name is Carolyn Frost, my husband Dave and I own Balance Yoga & Wellness. I'm also a doctoral student at Teacher's College, Columbia University in the Health Education Department. I am conducting a research study on a yoga, meditation and gratitude program designed to enhance well-being in women called The Balanced Woman.

You are being asked to participate in this study because you are a woman between the ages of 18-65. Participation includes:

1. Taking a 20-minute online survey about your well-being and other basic health and demographic information at 3 different time points (20 min x 3 = 60 min).
2. This is a randomized study, which means that you will be put into a group by chance. Group 1 will have access to the meditation + gratitude practice components beginning on Day 1. Group 2 will have access to the exact same meditation + gratitude components on Day 60.
3. During this 30-day program Group 1 will be asked to:
  - a. Take two yoga classes each week (60 min per class x 8 = 8 hours)
  - b. Participate in guided weekday meditations at home (10 minutes per day x 20 = 3.3 hours)
  - c. Engage in a gratitude practice each weekday (~5 minutes per day x 20 = 1.7 hours)
4. Group 2 will be asked to complete the surveys and practice yoga as many or as few times as you like. You will have full and complete access to the same exact program of meditation + gratitude at the completion of the Day 60 survey.

We are offering the following discount for study participants:

**\$49 for Unlimited Yoga & Pilates November 1<sup>st</sup> – November 30<sup>th</sup>**  
(A savings of up to \$125!!)

\* \* I hope you will participate, though if you are not interested or are unable to, there will be absolutely no consequences to not joining the study.

If you have any questions or would like to participate, I can be reached at 914-833-9703 or via email at [Carolyn@balanceyogany.com](mailto:Carolyn@balanceyogany.com).

Carolyn D. Frost  
Owner, Balance Yoga & Wellness

## Appendix C

*The Balanced Woman Worksheet*

DAY	DATE	YOGA (Y/N)	MEDITATION	GRATITUDE PRACTICE
Day 1	10/1/18		Start here; a beginner's meditation (Raquel Jordan) & Five Minute Intro to Mindfulness (Chris Walsh)	1. Breathe ( <i>Taking air in and out of the lungs; finding a deep breath</i> ) 2. Participant's Choice 3. Participant's Choice
Day 2	10/2/18		Using Sounds and Sensations (Patrick Delaney & Jessica Place)	1. Mindfulness ( <i>A balanced, open-minded approach to negative emotions</i> ) 2. Participant's Choice 3. Participant's Choice
Day 3	10/3/18		Maintain Perspective and Cultivate Gratitude (Lisa Abramson)	1. Gratitude ( <i>Thankful appreciation for the good in your life</i> ) 2. Participant's Choice 3. Participant's Choice
Day 4	10/4/18		Loving Kindness on the Go (Manoj Dias)	1. Mental Health ( <i>Positive and flourishing psychological and emotional well-being</i> ) 2. Participant's Choice 3. Participant's Choice
Day 5	10/5/18		Perfect Health Meditation (Nicole Bayliss)	1. Physical Health ( <i>Feeling well physically, not just the absence of disease and infirmity</i> ) 2. Participant's Choice 3. Participant's Choice
Day 6	10/6/18		<i>*Optional</i>	<i>*Optional</i>
Day 7	10/7/18		<i>*Optional</i>	<i>*Optional</i>
Day 8	10/8/18		Relaxation for busy people (Chantelle Diachina)	1. Rest ( <i>Ceasing work and movement to relax, refresh and recover</i> ) 2. Participant's Choice 3. Participant's Choice
Day 9	10/9/18		Loving Your True Self (Lisa Machac)	1. Autonomy ( <i>Independent, free from external control or influence</i> ) 2. Participant's Choice 3. Participant's Choice
Day 10	10/10/18		Practicing Gentle Kindness toward Yourself (Sarah Blondin)	1. Self-kindness ( <i>Feeling loving toward yourself in the face of suffering or failure</i> ) 2. Participant's Choice 3. Participant's Choice



DAY	DATE	YOGA (Y/N)	MEDITATION	GRATITUDE PRACTICE
Day 11	10/11/18		Body Love Meditation (Melody Litton)	1. Body Love & Appreciation ( <i>Feeling love and respect for your body; beauty comes in many forms</i> ) 2. Participant's Choice 3. Participant's Choice
Day 12	10/12/18		Picking up the Pieces (Tony Brady)	1. Powerful ( <i>Feeling in charge of daily responsibilities and current living situation</i> ) 2. Participant's Choice 3. Participant's Choice
Day 13	10/13/18		<i>*Optional</i>	<i>*Optional</i>
Day 14	10/14/18		<i>*Optional</i>	<i>*Optional</i>
Day 15	10/15/18		Just Like Me Meditation (Sean Fargo)	1. Common Humanity ( <i>Suffering is part of the shared human experience</i> ) 2. Participant's Choice 3. Participant's Choice
Day 16	10/16/18		Connecting Mind and Body Meditation (Natasha Fontaine)	1. Connected ( <i>A link, a relationship – toward yourself, others and the environment around you</i> ) 2. Participant's Choice 3. Participant's Choice
Day 17	10/17/18		Body Metta (Sarah Jane Chapman)	1. Beauty ( <i>Recognizing a wide variety of appearances as beautiful</i> ) 2. Participant's Choice 3. Participant's Choice
Day 18	10/18/18		We are Wonderfully Made – Body Scan (Tony Brady)	1. Personal Growth ( <i>Desire for continued growth, education and improvement</i> ) 2. Participant's Choice 3. Participant's Choice
Day 19	10/19/18		Breath and Affirmation Meditation (Casey Conerly)	1. Inner Positivity ( <i>Behavior that reveals a positive attitude and body image</i> ) 2. Participant's Choice 3. Participant's Choice
Day 20	10/20/18		<i>*Optional</i>	<i>*Optional</i>
Day 21	10/21/18		<i>*Optional</i>	<i>*Optional</i>
Day 22	10/22/18		Loving Kindness Practice (Naomi Goodlet)	1. Relationships ( <i>Participating in pleasant, warm and gratifying relationships</i> ) 2. Participant's Choice 3. Participant's Choice

DAY	DATE	YOGA (Y/N)	MEDITATION	GRATITUDE PRACTICE
Day 23	10/23/18		Accepting Change (Sarah Blondin)	1. Flexibility ( <i>Attentive to your body's changing needs</i> ) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i>
Day 24	10/24/18		Core Alignment Meditation (Brandon Alter)	1. Purpose ( <i>A sense of direction and meaning in life</i> ) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i>
Day 25	10/25/18		The Open Heart Meditation (Vidyamala Burch)	1. Self-acceptance ( <i>Feeling generally confident and positive about yourself</i> ) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i>
Day 26	10/26/18		Guided Forgiveness (Tara Brach)	1. Forgiveness ( <i>conscious decision to release negative feelings toward one who has wronged you</i> ) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i>
Day 27	10/27/18		<i>*Optional</i>	<i>*Optional</i>
Day 28	10/28/18		<i>*Optional</i>	<i>*Optional</i>
Day 29	10/29/18		Self-Compassion Meditation (Melli O'Brien)	1. Self-compassion ( <i>extending compassion to one's self during times of failure, inadequacy and suffering</i> ) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i>
Day 30	10/30/18		Honoring Life (Sarah Blondin)	1. Life-Satisfaction ( <i>Feeling satisfied with your life as a whole</i> ) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i>

\* Yoga classes are to be completed two times each week at Balance Yoga & Wellness. Two classes may be done online through pre-selected YouTube yoga classes. Please see list below.

\*\* Meditations and gratitude practices are optional on weekends. Participants may choose to not do these practices on these days, to repeat a previous meditation or gratitude practice, or to perform their own meditation or gratitude practice.

\*\*\* The gratitude practice is based on the "Three Good Things" model where participants reflect on their day and list out three things they are grateful for. Participants in this study will be asked to draw attention to item number one each weekday morning and then reflect and record two additional things they feel grateful for that day.

YouTube Yoga Classes:

1. Complete Beginner Vinyasa Yoga Class (60 min)
2. Self-love yoga class – deep full body stretch and tone (50 min)
3. Weight Loss Yoga – Total Body Workout (60 min)

4. Yin Yoga for flexibility (60 min)
5. Restorative Yoga for the upper back, neck and shoulders (50 min)
6. Deeply restorative yoga (60 min)
7. Power vinyasa flow (60 min)
8. Vinyasa flow for flexibility (60 min)
9. Chakra yin yoga for emotional healing (60 min)
10. Compassion Flow Yoga & Core Strength (60 min)

## Appendix D

## Scale and Construct Table

CONSTRUCT	DEFINITION	SCALE	RELATED SCALE ITEM	RELATED MEDITATION	RELATED GRATITUDE INTENTION
<b>WELL-BEING ITEMS</b>					
Autonomy	Those who score high on this scale are independent thinkers who internally regulate behavior and are able to reject social pressures to think and behave in a specific way. Others rely more heavily on the judgments and opinions of others and often conform to societal pressures.	RYFF Scale of Psychological Well-Being	<ol style="list-style-type: none"> <li>1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.</li> <li>2. My decisions are not usually influenced by what everyone else is doing.</li> <li>3. I tend to worry about what other people think of me.</li> <li>4. Being happy with myself is more important to me than having others approve of me.</li> <li>5. I tend to be influenced by people with strong opinions.</li> <li>6. I have confidence in my opinions, even if they are contrary to the general consensus.</li> <li>7. It's difficult for me to voice my own opinions on controversial matters.</li> <li>8. I often change my mind about decisions if my friends or family disagree.</li> <li>9. I judge myself by what I think is important, not by the values of what others think is important.</li> </ol>	Loving Your True Self (Lisa Machac)	Autonomy <i>(Independent, free from external control or influence)</i>

CONSTRUCT	DEFINITION	SCALE	RELATED SCALE ITEM	RELATED MEDITATION	RELATED GRATITUDE INTENTION
Environmental Mastery	High scorers on the scale have command over their environment and a firm handle on the complexities of everyday tasks and external activities. Low scorers may have difficulty dealing with everyday responsibilities and tasks and there is a sense of powerlessness over the external world.	RYFF Scale of Psychological Well-Being	<ol style="list-style-type: none"> <li>1. In general, I feel I am in charge of the situation in which I live.</li> <li>2. The demands of everyday life often get me down.</li> <li>3. I do not fit very well with the people and the community around me.</li> <li>4. I am quite good at managing the many responsibilities of my daily life.</li> <li>5. I often feel overwhelmed by my responsibilities.</li> <li>6. I generally do a good job of taking care of my personal finances and affairs.</li> <li>7. I am good at juggling my time so that I can fit everything in that needs to get done.</li> <li>8. I have difficulty arranging my life in a way that is satisfying to me.</li> <li>9. I have been able to build a home and a lifestyle for myself that is much to my liking.</li> </ol>	Picking up the Pieces (Tony Brady)	<p>Powerful</p> <p><i>(Feeling in charge of daily responsibilities and current living situation)</i></p>

CONSTRUCT	DEFINITION	SCALE	RELATED SCALE ITEM	RELATED MEDITATION	RELATED GRATITUDE INTENTION
Personal Growth	The high scorer on this scale continues to grow, develop and improve with increasing self-knowledge, awareness and a receptivity to new experiences. Others stagnate, may feel bored or disinterested in life with no sense of improvement or development over time.	RYFF Scale of Psychological Well-Being	<ol style="list-style-type: none"> <li>1. I am not interested in activities that will expand my horizons.</li> <li>2. I don't want to try new ways of doing things--my life is fine the way it is.</li> <li>3. I think it is important to have new experiences that challenge how you think about yourself and the world.</li> <li>4. When I think about it, I haven't really improved much as a person over the years.</li> <li>5. I have the sense that I have developed a lot as a person over time.</li> <li>6. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.</li> <li>7. For me, life has been a continuous process of learning, changing, and growth.</li> <li>8. I gave up trying to make big improvements or changes in my life a long time ago.</li> <li>9. There is truth to the saying you can't teach an old dog new tricks.</li> </ol>	We are Wonderfully Made – Body Scan (Tony Brady)	Personal growth  <i>(Desire for continued growth, education and improvement)</i>

CONSTRUCT	DEFINITION	SCALE	RELATED SCALE ITEM	RELATED MEDITATION	RELATED GRATITUDE INTENTION
Positive Relations with Others	Those that score high on this scale have pleasant and gratifying relationships, they can be very empathetic and take a genuine interest in the welfare of others. Low scorers on this scale tend to have few close relationships and they may find it challenging to be empathetic, warm and open; they are often isolated and frustrated in their relationships.	RYFF Scale of Psychological Well-Being	<ol style="list-style-type: none"> <li>1. Most people see me as loving and affectionate.</li> <li>2. Maintaining close relationships has been difficult and frustrating for me</li> <li>3. I often feel lonely because I have few close friends with whom to share my concerns.</li> <li>4. I enjoy personal and mutual conversations with family members or friends.</li> <li>5. I don't have many people who want to listen when I need to talk.</li> <li>6. It seems to me that most other people have more friends than I do.</li> <li>7. People would describe me as a giving person, willing to share my time with others.</li> <li>8. I have not experienced many warm and trusting relationships with others.</li> <li>9. I know that I can trust my friends, and they know they can trust me.</li> </ol>	Loving Kindness Practice (Naomi Goodlet)	Relationships <i>(Participating in pleasant, warm and gratifying relationships)</i>

CONSTRUCT	DEFINITION	SCALE	RELATED SCALE ITEM	RELATED MEDITATION	RELATED GRATITUDE INTENTION
Purpose in Life	The high scorer here has goals and purpose, a sense of direction in life, feels there is meaning in life. The low scorer lacks meaning, goals, direction, purpose and aims.	RYFF Scale of Psychological Well-Being	<ol style="list-style-type: none"> <li>1. I enjoy making plans for the future and working to make them a reality.</li> <li>2. I am an active person in carrying out the plans I set for myself.</li> <li>3. Some people wander aimlessly through life, but I am not one of them.</li> <li>4. I sometimes feel as if I've done all there is to do in life.</li> <li>5. I live life one day at a time and don't really think about the future.</li> <li>6. I tend to focus on the present, because the future nearly always brings me problems.</li> <li>7. My daily activities often seem trivial and unimportant to me.</li> <li>8. I don't have a good sense of what it is I'm trying to accomplish in life.</li> <li>9. I used to set goals for myself, but that now seems like a waste of time.</li> </ol>	Core Alignment Meditation (Brandon Alter)	Purpose <i>(A sense of direction and meaning in life)</i>



CONSTRUCT	DEFINITION	SCALE	RELATED SCALE ITEM	RELATED MEDITATION	RELATED GRATITUDE INTENTION
Self-acceptance	High scorers tend to have a positive attitude toward the self, acknowledging and accepting both good and bad qualities. Low scorers may feel dissatisfaction with the self and with the past and [may wish to be different than what they are.	RYFF Scale of Psychological Well-Being	<ol style="list-style-type: none"> <li>1. When I look at the story of my life, I am pleased with how things have turned out.</li> <li>2. In general, I feel confident and positive about myself.</li> <li>3. I feel like many of the people I know have gotten more out of life than I have.</li> <li>4. I like most aspects of my personality</li> <li>5. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.</li> <li>6. In many ways, I feel disappointed about my achievements in life.</li> <li>7. My attitude about myself is probably not as positive as most people feel about themselves.</li> <li>8. The past had its ups and downs, but in general, I wouldn't want to change it.</li> <li>9. When I compare myself to friends and acquaintances, it makes me feel good about who I am.</li> </ol>	The Open Heart Meditation (Vidyamala Burch)	Self-acceptance  <i>(Feeling generally confident and positive about yourself)</i>

CONSTRUCT	DEFINITION	SCALE	RELATED SCALE ITEM	RELATED MEDITATION	RELATED GRATITUDE INTENTION
<b>SELF-COMPASSION ITEMS</b>					
Self-kindness vs Self-judgment	Being warm and understanding toward ourselves when we suffer or fail vs ignoring our pain and piling on self-criticism	Self-Compassion Scale (SCS)	<p><b>Self-kindness items:</b></p> <ol style="list-style-type: none"> <li>1. I try to be loving towards myself when I'm feeling emotional pain.</li> <li>2. When I'm going through a very hard time, I give myself the caring and tenderness I need.</li> <li>3. I'm tolerant of my own flaws and inadequacies.</li> <li>4. I'm kind to myself when I'm experiencing suffering.</li> <li>5. I try to be understanding and patient towards those aspects of my personality I don't like.</li> </ol> <p><b>Self-judgment items:</b></p> <ol style="list-style-type: none"> <li>1. I'm disapproving and judgmental about my own flaws and inadequacies.</li> <li>2. When times are really difficult, I tend to be tough on myself.</li> <li>3. I'm intolerant and impatient towards those aspects of my personality I don't like.</li> <li>4. When I see aspects of myself that I don't like, I get down on myself.</li> <li>5. I can be a bit cold-hearted towards myself when I'm experiencing suffering.</li> </ol>	Metta Meditation, a Practice of Loving Kindness (Lance Isakov)	Self-kindness <i>(Feeling loving toward yourself in the face of suffering or failure)</i>

CONSTRUCT	DEFINITION	SCALE	RELATED SCALE ITEM	RELATED MEDITATION	RELATED GRATITUDE INTENTION
Common humanity vs Isolation	Suffering is part of the shared human experience – not something that happens to “me” alone	Self-Compassion Scale (SCS)	<p><b>Common humanity items:</b></p> <ol style="list-style-type: none"> <li>1. When things are going badly for me, I see the difficulties as part of life that everyone goes through.</li> <li>2. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.</li> <li>3. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.</li> <li>4. I try to see my failings as part of the human condition</li> </ol> <p><b>Isolation items:</b></p> <ol style="list-style-type: none"> <li>1. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.</li> <li>2. When I'm feeling down, I tend to feel like most other people are probably happier than I am.</li> <li>3. When I'm really struggling, I tend to feel like other people must be having an easier time of it.</li> <li>4. When I fail at something that's important to me, I tend to feel alone in my failure.</li> </ol>	Just Like Me Meditation (Sean Fargo)	Common humanity <i>(Suffering is part of the shared human experience)</i>

CONSTRUCT	DEFINITION	SCALE	RELATED SCALE ITEM	RELATED MEDITATION	RELATED GRATITUDE INTENTION
Mindfulness vs Over-Identification	A balanced approach to negative emotions so that feelings are neither suppressed nor exaggerated.	Self-Compassion Scale (SCS)	<p><b>Mindfulness items:</b></p> <ol style="list-style-type: none"> <li>1. When something upsets me, I try to keep my emotions in balance.</li> <li>2. When something painful happens, I try to take a balanced view of the situation.</li> <li>3. When I fail at something important to me I try to keep things in perspective.</li> <li>4. When I'm feeling down I try to approach my feelings with curiosity and openness.</li> </ol> <p><b>Over-identification items:</b></p> <ol style="list-style-type: none"> <li>1. When I'm feeling down I tend to obsess and fixate on everything that's wrong.</li> <li>2. When I fail at something important to me I become consumed by feelings of inadequacy.</li> <li>3. When something upsets me I get carried away with my feelings.</li> <li>4. When something painful happens I tend to blow the incident out of proportion.</li> </ol>	Foreground & background of Mindfulness (Stephen Davies)	Mindfulness <i>(A balanced, open-minded approach to negative emotions)</i>

CONSTRUCT	DEFINITION	SCALE	RELATED SCALE ITEM	RELATED MEDITATION	RELATED GRATITUDE INTENTION
Personal well-being	Overall state of personal well-being	The Personal Wellbeing Index	Single item Likert Scale question where 0 is Completely Dissatisfied and 10 is Completely Satisfied  1. Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?	Honoring Life (Sarah Blondin)	Life-satisfaction  <i>(Feeling satisfied with your life as a whole)</i>
<b>MISCELLANEOUS ITEMS</b>					
Mental Health		Self-rated mental health (SRMH)	1. "In general, would you say your mental health is: Excellent, Very Good, Good, Fair or Poor?"	Loving Kindness on the Go (Manoj Dias)	Mental health  <i>(Positive and flourishing psychological and emotional well-being)</i>
Physical Health		Self-rated physical health (adapted from SRMH)	1. "In general, would you say your physical health is: Excellent, Very Good, Good, Fair or Poor?"	Perfect Health Meditation (Nicole Bayliss)	Physical health  <i>(Feeling well physically, not just the absence of disease and infirmity)</i>
Gratitude	Appreciation of what is valuable and meaningful to oneself;	The Grateful Disposition – (GQ-6)	1. I have so much in life to be thankful for. 2. If I had to list everything that I felt grateful for, it would be a very long list 3. When I look at the world, I don't see much to be grateful for 4. I am grateful to a wide variety of people 5. As I get older, I find myself more able to appreciate the people, events, and situations that have been part of my life history 6. Long amounts of time can go by before I feel grateful to something or someone	Metta Meditation, a Practice of Loving Kindness	Gratitude  <i>(Thankful appreciation for the good in your life)</i>

## Appendix E

## Pre-Test Survey

Q1. How important is well-being in your life?

Answer Choices

1. Extremely important
2. Very important
3. Moderately important
4. Slightly important
5. Not at all important

Q2. What is your age?

Answer Choices

1. 18-20
2. 21-29
3. 30-39
4. 40-49
5. 50-59
6. 60 or older

Q3. Which race/ethnicity best describes you? (Please choose only one.)

Answer Choices

1. American Indian or Alaskan Native
2. Asian / Pacific Islander
3. Black or African American
4. Hispanic
5. White / Caucasian
6. Multiple ethnicity / Other (please specify)

Q4. Which of the following best describes your current relationship status?

Answer Choices

1. Married
2. Widowed
3. Divorced
4. Separated
5. In a domestic partnership or civil union
6. Single, but cohabiting with a significant other
7. Single, never married

Q5. What is the highest level of school that you have completed?

Answer Choices

1. Primary school
2. Some high school, but no diploma
3. High school diploma (or GED)
4. Some college, but no degree
5. 2-year college degree
6. 4-year college degree
7. Graduate-level degree
8. None of the above

Q6. Which of the following categories best describes your employment status?

Answer Choices

1. Employed, working full-time
2. Employed, working part-time
3. Not employed, looking for work
4. Not employed, NOT looking for work
5. Retired
6. Disabled, not able to work

Q7. Are you currently enrolled as a student?

Answer Choices

1. Yes, full time in graduate school
2. Yes, part time in graduate school
3. Yes, full time at a four year undergraduate college/university
4. Yes, part time at a four year undergraduate college/university
5. Yes, full time at a two year undergraduate college/university
6. Yes, part time at a two year undergraduate college/university
7. Yes, at a high school or equivalent
8. No, I am not currently enrolled as a student

Q8. How many children are you parent or guardian for and live in your household (aged 17 or younger only)?

Answer Choices

None

1. 1
2. 2
3. 3
4. 4
5. More than 4

Q9. In general, would you say your physical health is...

Answer Choices

1. Excellent
2. Very Good
3. Good
4. Fair
5. Poor

Q10. In general, how healthy are your eating habits (types of food, how often you eat, where you eat etc...)?

Answer Choices

1. Extremely Healthy
2. Moderately Healthy
3. Neither healthy, nor unhealthy
4. Moderately unhealthy
5. Extremely unhealthy

Q11. In the past 30 days, how many times did you do yoga for at least 60 minutes? (Any style of yoga: Vinyasa, Bikram, Hatha, Restorative, Yin etc...)

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
4. 9 to 12 times
5. More than 12 times

Q12. In the past 30 days, how many times did you exercise (other than yoga) for at least 30 minutes?

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
4. 9 to 12 times
5. More than 12 times

Q13. How many hours do you sleep each night?

Answer Choices

1. 4 or fewer hours
2. About 5-6 hours
3. About 7-8 hours
4. 9 or more hours



Q14. Do you currently smoke cigarettes?

Answer Choices

1. Yes, I do
2. No, I do not

Q15. About how many alcoholic drinks do you have each week?

Answer Choices

1. 0
2. 1-4
3. 5-8
4. 9-12
5. 13-16
6. More than 16

Q16. How much bodily pain have you had during the past 4 weeks?

Answer Choices

None

1. Very mild
2. Mild
3. Moderate
4. Severe
5. Very severe

Q17. During the past 4 weeks, how disruptive were any physical health problems to your normal social activities with family, friends, neighbors, or groups?

Answer Choices

1. Extremely disruptive
2. Very disruptive
3. Somewhat disruptive
4. Not so disruptive
5. Not at all disruptive

Q18. In general, would you say your mental health is...

Answer Choices

1. Excellent
2. Very Good
3. Good
4. Fair
5. Poor

Q19. In general, how often do you feel calm and peaceful?

Answer Choices

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q20. In the past 30 days, how many times did you meditate for at least 10 minutes?

{Meditate: To think deeply or focus one's mind for a period of time, in silence or with the aid of chanting. }

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
4. 9 to 12 times
5. More than 12 times

Q21. During the past 4 weeks, how disruptive were any mental or emotional health problems to your normal social activities with family, friends, neighbors, or groups?

Answer Choices

1. Extremely disruptive
2. Very disruptive
3. Somewhat disruptive
4. Not so disruptive
5. Not at all disruptive

Q22. In the past 30 days, how many times did you participate in a gratitude practice?

{Gratitude Practice: Taking time to notice and reflect upon things that you are grateful for}

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
4. 9 to 12 times
5. More than 12 times

Q23. Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?

Answer Choices

1. Very satisfied
2. Satisfied
3. Neither satisfied nor dissatisfied
4. Dissatisfied
5. Very dissatisfied

Q24. How do you typically act toward yourself during difficult times:

Answer Choices

1. When I fail at something important to me I become consumed by feelings of inadequacy.
2. I try to be understanding and patient towards those aspects of my personality I don't like.
3. When something painful happens I try to take a balanced view of the situation.
4. When I am feeling down, I tend to feel like most other people are probably happier than I am.
5. I try to see my failings as part of the human condition.
6. When I am going through a very hard time, I give myself the caring and tenderness I need.
7. When something upsets me I try to keep my emotions in balance.
8. When I fail at something that is important to me, I tend to feel alone in my failure
9. When I am feeling down I tend to obsess and fixate on everything that is wrong.
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
11. I am disapproving and judgmental about my own flaws and inadequacies.
12. I am intolerant and impatient towards those aspects of my personality I don't like.

Q25. The following set of questions deals with how you feel about yourself and your life.† Please remember that there are no right or wrong answers. Choose the number that best describes your present agreement or disagreement with each statement.

Answer Choices

1. Most people see me as loving and affectionate.
2. In general, I feel I am in charge of the situation in which I live.
3. I am not interested in activities that will expand my horizons.
4. When I look at the story of my life, I am pleased with how things have turned out.
5. Maintaining close relationships has been difficult and frustrating for me
6. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.
7. The demands of everyday life often get me down.
8. I live life one day at a time and don't really think about the future.
9. In general, I feel confident and positive about myself.

10. I often feel lonely because I have few close friends with whom to share my concerns.
11. My decisions are not usually influenced by what everyone else is doing.
12. I do not fit very well with the people and the community around me.
13. I tend to focus on the present, because the future nearly always brings me problems.
14. I feel like many of the people I know have gotten more out of life than I have.
15. I enjoy personal and mutual conversations with family members or friends.
16. I tend to worry about what other people think of me.
17. I am quite good at managing the many responsibilities of my daily life.
18. I don't want to try new ways of doing things--my life is fine the way it is.
19. Being happy with myself is more important to me than having others approve of me.
20. I often feel overwhelmed by my responsibilities.
21. I think it is important to have new experiences that challenge how you think about yourself and the world.
22. My daily activities often seem trivial and unimportant to me.
23. I like most aspects of my personality.
24. I don't have many people who want to listen when I need to talk.
25. I tend to be influenced by people with strong opinions.
26. When I think about it, I haven't really improved much as a person over the years.
27. I don't have a good sense of what it is I'm trying to accomplish in life.
28. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.
29. I generally do a good job of taking care of my personal finances and affairs.
30. I used to set goals for myself, but that now seems like a waste of time.
31. In many ways, I feel disappointed about my achievements in life.
32. It seems to me that most other people have more friends than I do.
33. I enjoy making plans for the future and working to make them a reality.
34. People would describe me as a giving person, willing to share my time with others.
35. I have confidence in my opinions, even if they are contrary to the general consensus.
36. I am good at juggling my time so that I can fit everything in that needs to get done.
37. I have the sense that I have developed a lot as a person over time.
38. I am an active person in carrying out the plans I set for myself.
39. It's difficult for me to voice my own opinions on controversial matters.
40. I have not experienced many warm and trusting relationships with others.
41. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.
42. Some people wander aimlessly through life, but I am not one of them.
43. My attitude about myself is probably not as positive as most people feel about themselves.
44. I often change my mind about decisions if my friends or family disagree.
45. For me, life has been a continuous process of learning, changing, and growth.

46. I sometimes feel as if I've done all there is to do in life.
47. The past had its ups and downs, but in general, I wouldn't change it.
48. I know that I can trust my friends, and they know they can trust me.
49. I have difficulty arranging my life in a way that is satisfying to me.
50. I gave up trying to make big improvements or changes in my life a long time ago.
51. When I compare myself to friends and acquaintances, it makes me feel good about who I am.
52. I judge myself by what I think is important, not by the values of what others think is important.
53. I have been able to build a home and a lifestyle for myself that is much to my liking.
54. There is truth to the saying you can't teach an old dog new tricks.

Q26. Read each of these statements carefully, then select the response that indicates how much you agree or disagree with each statement.

Answer Choices

1. I have so much in life to be thankful for.
2. If I had to list everything that I felt grateful for, it would be a very long list.
3. When I look at the world, I don't see much to be grateful for.
4. I am grateful to a wide variety of people.
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.
6. Long amounts of time can go by before I feel grateful to something or someone.

Q27. How would you define well-being?

Open comment section \* qualitative

Q28. What benefits do you anticipate from participating in The Balanced Woman (Yoga + Meditation + Gratitude)

Open comment section \* qualitative

## Appendix F

## Post-Test Survey

The Balanced Woman; Yoga + Meditation + Gratitude (Follow-up #1)

Q1. How important is well-being in your life?

Answer Choices

1. Extremely important
2. Very important
3. Moderately important
4. Slightly important
5. Not at all important

Q2. In general, would you say your physical health is...

Answer Choices

1. Excellent
2. Very Good
3. Good
4. Fair
5. Poor

Q3. In general, how healthy are your eating habits (types of food, how often you eat, where you eat etc...)?

Answer Choices

1. Extremely Healthy
2. Moderately Healthy
3. Neither healthy, nor unhealthy
4. Moderately unhealthy
5. Extremely unhealthy

Q4. In the past 30 days, how many times did you do yoga for at least 60 minutes? (Any style of yoga: Vinyasa, Bikram, Hatha, Restorative, Yin etc...)

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
4. 9 to 12 times
5. More than 12 times

Q5. In the past 30 days, how many times did you exercise (other than yoga) for at least 30 minutes?

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
4. 9 to 12 times
5. More than 12 time

Q6. How many hours do you sleep each night?

Answer Choices

1. 4 or fewer hours
2. About 5-6 hours
3. About 7-8 hours
4. 9 or more hours

Q7. Do you currently smoke cigarettes?

Answer Choices

1. Yes, I do
2. No, I do not

Q8. About how many alcoholic drinks do you have each week?

Answer Choices

1. 0
2. 1-4
3. 5-8
4. 9-12
5. 13-16
6. More than 16

Q9. How much bodily pain have you had during the past 4 weeks?

Answer Choices

1. None
2. Very mild
3. Mild
4. Moderate
5. Severe
6. Very severe

Q10. During the past 4 weeks, how disruptive were any physical health problems to your normal social activities with family, friends, neighbors, or groups?

Answer Choices

1. Extremely disruptive
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Q14. During the past 4 weeks, how disruptive were any mental or emotional health problems to your normal social activities with family, friends, neighbors, or groups?

Answer Choices

1. Extremely disruptive
2. Very disruptive
3. Somewhat disruptive
4. Not so disruptive
5. Not at all disruptive



Q15. In the past 30 days, how many times did you participate in a gratitude practice?  
 {Gratitude Practice: Taking time to notice and reflect upon things that you are grateful for}

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
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Q16. Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?

Answer Choices

1. Very satisfied
2. Satisfied
3. Neither satisfied nor dissatisfied
4. Dissatisfied
5. Very dissatisfied

Q17. How do you typically act toward yourself during difficult times:

Answer Choices

1. When I fail at something important to me I become consumed by feelings of inadequacy.
2. I try to be understanding and patient towards those aspects of my personality I don't like.
3. When something painful happens I try to take a balanced view of the situation.
4. When I am feeling down, I tend to feel like most other people are probably happier than I am.
5. I try to see my failings as part of the human condition.
6. When I am going through a very hard time, I give myself the caring and tenderness I need.
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3. I am not interested in activities that will expand my horizons.
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11. My decisions are not usually influenced by what everyone else is doing.
12. I do not fit very well with the people and the community around me.
13. I tend to focus on the present, because the future nearly always brings me problems.
14. I feel like many of the people I know have gotten more out of life than I have.
15. I enjoy personal and mutual conversations with family members or friends.
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17. I am quite good at managing the many responsibilities of my daily life.
18. I don't want to try new ways of doing things--my life is fine the way it is.
19. Being happy with myself is more important to me than having others approve of me.
20. I often feel overwhelmed by my responsibilities.
21. I think it is important to have new experiences that challenge how you think about yourself and the world.
22. My daily activities often seem trivial and unimportant to me.
23. I like most aspects of my personality.
24. I don't have many people who want to listen when I need to talk.
25. I tend to be influenced by people with strong opinions.
26. When I think about it, I haven't really improved much as a person over the years.
27. I don't have a good sense of what it is I'm trying to accomplish in life.
28. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.
29. I generally do a good job of taking care of my personal finances and affairs.
30. I used to set goals for myself, but that now seems like a waste of time.
31. In many ways, I feel disappointed about my achievements in life.
32. It seems to me that most other people have more friends than I do.
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40. I have not experienced many warm and trusting relationships with others.
41. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.
42. Some people wander aimlessly through life, but I am not one of them.
43. My attitude about myself is probably not as positive as most people feel about themselves.
44. I often change my mind about decisions if my friends or family disagree.
45. For me, life has been a continuous process of learning, changing, and growth.
46. I sometimes feel as if I've done all there is to do in life.
47. The past had its ups and downs, but in general, I wouldn't change it.
48. I know that I can trust my friends, and they know they can trust me.
49. I have difficulty arranging my life in a way that is satisfying to me.
50. I gave up trying to make big improvements or changes in my life a long time ago.
51. When I compare myself to friends and acquaintances, it makes me feel good about who I am.
52. I judge myself by what I think is important, not by the values of what others think is important.
53. I have been able to build a home and a lifestyle for myself that is much to my liking.
54. There is truth to the saying you can't teach an old dog new tricks.

Q26. Do you anticipate continuing your gratitude practice moving forward?

Answer Choices

1. Yes
2. No
3. Not sure
4. NA - I was in the YOGA ONLY group

Q27. Any other comments, questions, suggestions?

Open comment section \* qualitative

## Appendix G

## 30-Day Follow-Up Survey

Q1. How important is well-being in your life?

Answer Choices

1. Extremely important
2. Very important
3. Moderately important
4. Slightly important
5. Not at all important

Q2. In general, would you say your physical health is...

Answer Choices

1. Excellent
2. Very Good
3. Good
4. Fair
5. Poor

Q3. In general, how healthy are your eating habits (types of food, how often you eat, where you eat etc...)?

Answer Choices

1. Extremely Healthy
2. Moderately Healthy
3. Neither healthy, nor unhealthy
4. Moderately unhealthy
5. Extremely unhealthy

Q4. In the past 30 days, how many times did you do yoga for at least 60 minutes? (Any style of yoga: Vinyasa, Bikram, Hatha, Restorative, Yin etc...)

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
4. 9 to 12 times
5. More than 12 times

Q5. What specifically would make it easier for you to keep a commitment to a regular yoga practice?

Open comment section \* qualitative

Q6. In the past 30 days, how many times did you exercise (other than yoga) for at least 30 minutes?

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
4. 9 to 12 times
5. More than 12 times

Q7. How many hours do you sleep each night?

Answer Choices

1. 4 or fewer hours
2. About 5-6 hours
3. About 7-8 hours
4. 9 or more hours

Q8. Do you currently smoke cigarettes?

Answer Choices

1. Yes, I do
2. No, I do not

Q9. About how many alcoholic drinks do you have each week?

Answer Choices

1. 0
2. 1-4
3. 5-8
4. 9-12
5. 13-16
6. More than 16

Q10. How much bodily pain have you had during the past 4 weeks?

Answer Choices

1. None
2. Very mild
3. Mild
4. Moderate
5. Severe
6. Very severe

Q11. During the past 4 weeks, how disruptive were any physical health problems to your normal social activities with family, friends, neighbors, or groups?

Answer Choices

1. Extremely disruptive
2. Very disruptive
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4. Not so disruptive
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Q12. In general, would you say your mental health is...

Answer Choices

1. Excellent
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Q13. In general, how often do you feel calm and peaceful?

Answer Choices

1. All of the time
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{Meditate: To think deeply or focus one's mind for a period of time, in silence or with the aid of chanting. }

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
4. 9 to 12 times
5. More than 12 times

Q15. What specifically would make it easier for you to keep a commitment to a regular meditation practice?

Open comment section \* qualitative

Q16. During the past 4 weeks, how disruptive were any mental or emotional health problems to your normal social activities with family, friends, neighbors, or groups?

Answer Choices

1. Extremely disruptive
2. Very disruptive
3. Somewhat disruptive
4. Not so disruptive
5. Not at all disruptive

Q17. In the past 30 days, how many times did you participate in a gratitude practice?  
{Gratitude Practice: Taking time to notice and reflect upon things that you are grateful for}

Answer Choices

1. Not at all
2. 1 to 4 times
3. 5 to 8 times
4. 9 to 12 times
5. More than 12 times

Q18. What specifically would make it easier for you to keep a commitment to a regular gratitude practice?

Open comment section \* qualitative

Q19. Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?

Answer Choices

1. Very satisfied
2. Satisfied
3. Neither satisfied nor dissatisfied
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Q20. How do you typically act toward yourself during difficult times:

Answer Choices

1. When I fail at something important to me I become consumed by feelings of inadequacy.
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Q21. The following set of questions deals with how you feel about yourself and your life. →† Please remember that there are no right or wrong answers. Choose the number that best describes your present agreement or disagreement with each statement.

Answer Choices

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28. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.
29. I generally do a good job of taking care of my personal finances and affairs.
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45. For me, life has been a continuous process of learning, changing, and growth.
46. I sometimes feel as if I've done all there is to do in life.
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49. I have difficulty arranging my life in a way that is satisfying to me.
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1. I have so much in life to be thankful for.
2. If I had to list everything that I felt grateful for, it would be a very long list.
3. When I look at the world, I don't see much to be grateful for.
4. I am grateful to a wide variety of people.
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.
6. Long amounts of time can go by before I feel grateful to something or someone.

Q23. How likely is it that you would recommend The Balanced Woman to a friend or colleague?

Open comment section \* qualitative

Q24. Would you like to see more of these programs offered at Balance Yoga & Wellness?—†

Answer Choices

1. Yes
2. No
3. Not sure

Q25. If you answered yes to the question above, what topic(s) would you like to see the program to zero in on?

Open comment section \* qualitative

Q26. Any other comments, questions, suggestions?

Open comment section \* qualitative

## Appendix H

## Data Collection and Reporting Flow Chart



Appendix I

The Balanced Woman Welcome Packet, YMG



The Balanced  
Woman

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## **Welcome to The Balanced Woman!**

You have been randomly assigned to the **Yoga + Meditation + Gratitude Group (YMG)**.

Participation in this group includes:

1. Taking a 15-minute online survey about your well-being and other basic health and demographic information at 3 different time points
2. Taking *at least* two yoga classes each week
3. Participating in guided meditations on 5 separate days/week
4. Engaging in a gratitude practice on 5 separate days/week

The pages that follow include detailed information about [Balance Yoga & Wellness](#) and [The Balanced Woman](#). Please review carefully, and contact [carolyn@balanceyogany.com](mailto:carolyn@balanceyogany.com) with any questions.

Please know that your dedicated and consistent involvement is so important to the outcome of this study, and I am so incredibly grateful that you are participating. Please be in touch with any comments, questions and/or feedback, I welcome all of it.

Best always,

Carolyn

## YOGA PRACTICE

Your unlimited yoga begins Saturday 12/1! Yoga classes are to be completed *at least* two times each week at Balance Yoga & Wellness, though feel free to take as many beyond the required two as you like!

All of the yoga classes offered at [Balance Yoga & Wellness](#) count toward the 2x/week requirement including Bikram, Vinyasa, Slow Flow, Yin + Restorative. You can take pilates classes though they will not count toward the yoga requirement for the study.

Current class schedule is located [HERE](#).

I will track your attendance through the MindBody software used at the studio. If necessary, up to four classes may be done online through the pre-selected YouTube yoga classes below. \*\* For any classes done at home, please communicate which class you completed and the date to [Carolyn@balanceyogany.com](mailto:Carolyn@balanceyogany.com).

11. [Complete Beginner Vinyasa Yoga Class](#) (60 min)
12. [Self- love yoga class – deep full body stretch and tone](#) (50 min)
13. [Weight Loss Yoga – Total Body Workout](#) (60 min)
14. [Yin Yoga for flexibility](#) (60 min)
15. [Restorative Yoga for the upper back, neck and shoulders](#) (50 min)
16. [Deeply restorative yoga](#) (60 min)
17. [Power vinyasa flow](#) (60 min)
18. [Vinyasa flow for flexibility](#) (60 min)
19. [Chakra yin yoga for emotional healing](#) (60 min)
20. [Compassion Flow Yoga & Core Strength](#) (60 min)

## YOGA FAQ's:

### WHAT SHOULD I WEAR?

Depending on the class you take, the room can be fairly hot, so dress accordingly! Women typically wear shorts or leggings with a sports bra and/or a tank top. Men usually wear just shorts, though some also wear a t-shirt or tank top. For non-heated classes, dress in comfortable clothes so you can move freely.

### WHAT DO I NEED TO BRING FOR CLASS?

You will definitely need water! Bring your own, buy a bottle or fill up your own water bottle at the studio. We have towels and mats available for rent, or you can bring your own. Some people like to bring a change of clothes if they plan to shower at the studio.

### WHERE CAN I FIND THE CURRENT SCHEDULE?

The schedule is located [HERE](#). We use MindBody software - it's very easy to use and see the schedule in real time. Many people like to plan their workouts in advance and sign up ahead of time.

### WHAT FACILITIES DO YOU HAVE ON SITE?

Our locker rooms are fully equipped with bathrooms, showers and cubbies for storing your belongings. The showers have shampoo, conditioner and soap. We have baggies to store your yoga clothes after class. We have a blow dryer in the women's bathroom.

### WHAT IF I CAN'T DO SOME OF THE POSTURES?

Don't worry about it! This is your practice. Yoga is about you, not about what others are doing. Do the best you can, and you will see the benefits of your practice. It's about progress, not perfection!



**MEDITATION PRACTICE:**

*“You should sit in meditation for twenty minutes every day – unless you're too busy; then you should sit for an hour” – Zen proverb*

You will be asked to participate in a guided meditation practice at least 5 days a week for the 30-day duration of the study using [Insight Timer](#). Please download the app on your smartphone if you have not done so already.

The Balanced Woman is a closed group, meaning people who are not in the study do not have access to see member names, meditations or posts. You will receive an invitation to join; you must accept the invitation to access the group. If you do not receive one, please locate The Balanced Woman > Information > Join Group. Joining the group will make you a ‘friend’ of The Balanced Woman. In this way, I will be able to view and track your adherence with the meditation component of the study.

The meditations are all under 10 minutes and can be done anywhere; at home, on the train, outdoors etc... The meditations have been carefully pre-selected to correspond with the Gratitude Intentions (see Gratitude Practice section, pg. 6); please be sure to do them on the same day! The meditations will be made available on The Balanced Woman group on Insight Timer. They are also listed on The Balanced Woman Worksheet (pg. 11).

Five meditations are offered each week. For the other two days of the week, you may choose to not engage in a meditation practice, to repeat a previous meditation, or to choose your own. Of note, the first meditation consists of 2 five-minute introductory meditations for people new to the practice, or a refresher to those with an existing practice.

## GRATITUDE PRACTICE:

A common example of gratitude journaling, and the one that The Balanced Woman utilizes, is “Three Good Things” in which you are asked to reflect and then record three things for which you feel grateful for in a diary or journal.

Building upon this approach, a *Gratitude Intention* will also be offered. The gratitude intentions are based directly on wellness constructs and consist of a word or two as the main intention, with a brief description to accompany the intention. The gratitude intentions are deliberately short and fairly general, please interpret them and apply them to your day and life in whatever way resonates with you.

Five gratitude intentions will be offered each week. For the other two days, you may choose to not engage in the gratitude practice, to repeat a previous gratitude intention, or to choose your own.

The following steps will be taken each day to fulfill the gratitude practice component of The Balanced Woman:

- Identify the assigned daily gratitude intention from The Balanced Woman Worksheet (pg. 11)
- An initial step of a gratitude practice is attention. Take a Mindful Minute – i.e. a few slow deep cleansing breaths, and think about how the word(s) relate to the day you have ahead and how they might show up in your life
- Come back to this idea throughout your day, possibly allowing it to guide your activities, thoughts, attitudes and choices.

- At night before bed, reflect on the offered Gratitude Intention, and then add two other “things” of your own choosing that you feel particularly grateful or thankful for. \*Take a moment to *really* savor these gifts and think about their value.
- Record your Three Good Things in a consistent place; on The Balanced Woman worksheet, a journal, on your phone, laptop etc...
- You will not be asked to share any of the information recorded in your journal. However, an email will be sent each week for you to report how many days you participated in this gratitude practice.

## CLASS DESCRIPTIONS:

**BIKRAM YOGA (90 min):** A specific set of 26 postures and 2 breathing exercises designed to relax, strengthen and stretch every muscle, ligament, tendon and joint in the body. Performed in a room heated to 105°-110°. All levels welcome.

**BIKRAM YOGA EXPRESS (60 min):** The same practice as the traditional Bikram Yoga series, but in a 60-minute format. It includes all 26 postures and 2 breathing exercises. Performed in a room heated to 105°-110°. All levels welcome.

**CANDLELIGHT YIN + RESTORATIVE (60 min):** A gentle mix of yin and restorative postures in a calming and peaceful candlelit room. The best way to refresh and restore for the week ahead! All levels welcome!

- Yin yoga: Long held postures designed to work into the connective tissue
- Restorative Yoga: Passive stretching supported by props to allow the muscles to fully relax

**HOT VINAYASA (60 min):** A form of flow yoga that will improve mental and physical strength, flexibility and stamina. Performed in a room heated to 95°. All levels welcome.

**HOT VINAYASA WITH OPTIONAL GUIDED MEDITATION: (60 min vinyasa + 30 min optional meditation):** A 60-minute flow yoga class, linking breath to movement, and designed to improve mental and physical strength, flexibility and stamina. Wind down with an optional 30-minute guided meditation for complete relaxation and stress reduction. All levels welcome.

**SLOW FLOW VINAYASA (60 min, gently heated):** A slowed-down version of your typical vinyasa practice! Moving mindfully with the breath, the focus is on safely transitioning through postures to build strength, balance and flexibility. All levels welcome.

**VINAYASA FLOW (No heat) (60 min):** Breath is linked with movement in this vinyasa flow class. Students will learn proper alignment, form, better understand breath work and get an amazing full body - and mind! - workout. No heat! All levels welcome.

## CLASS SCHEDULE:

December Schedule: Sign up for your next class [HERE!](#)



MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
6am: Bikram Express (60 min)	6am: Bikram Express (60 min)	6am: Hot Vinyasa (60 min)	6am: Bikram Express (60 min)	6am: Bikram Express (60 min)	6:30am: Bikram Express (60 min)	8am: Bikram Yoga (90 min)
9:30am: Bikram Yoga (90 min)	9:30am: Hot Vinyasa (60 min)	9:30am: Bikram & Music (90 min)	9:30am: Hot Vinyasa (60 min)	9:30am: Vinyasa Flow - No Heat! (60 min)	8am: Bikram Yoga (90 min)	10:30am: Slow Flow Vinyasa (60 min) <i>NEW CLASS!!</i>
11:30am: Slow Flow Vinyasa (60 min)	6pm: Hot Vinyasa (60 min)	11:30am: Slow Flow Vinyasa (60 min)	6pm: Hot Power Pilates (60 min)	6pm: Hot Vinyasa (60 min)	10am: Hot Vinyasa (60 min)	12:00pm: Hot Vinyasa & <i>Optional</i> Guided Meditation (60-75 min)
5:30pm: Bikram Yoga (90 min)	7:30pm: Bikram Yoga Express (60 min)	5:30pm: Hot Vinyasa & <i>Optional</i> Guided Meditation (60 - 90 min)	7:30pm: Bikram with Music (60 min)		11:15am: Hot Power Pilates (60 min)	4pm: Bikram Yoga (90 min)
7:30pm: Hot Power Vinyasa (60 min)		7:30pm: Bikram Express (60 min)			1pm: Slow Flow Vinyasa (60 min)	6:30pm: Candlelight Yin & Restorative (60 min)
					4pm: Bikram Yoga (90 min)	

[www.balanceyogany.com](http://www.balanceyogany.com) [info@balanceyogany.com](mailto:info@balanceyogany.com)  
 2444 Boston Post Rd. \* Larchmont, NY \* 914.833.9703



CONTACT INFORMATION:

[Balance Yoga & Wellness](#) is a yoga studio in Larchmont, NY specializing in vinyasa, Bikram yoga, kids' yoga and mat pilates.

Massage, reflexology and Reiki too!

All levels welcome!



Carolyn D. Frost

[Balance Yoga & Wellness](#)

2444 Boston Post Rd.  
Larchmont, NY 10538  
Studio: 914.833.9703  
Cell: 845.216.0050

[carolyn@balanceyogany.com](mailto:carolyn@balanceyogany.com)



## The Balanced Woman Worksheet

*Please PRINT this out and use it as both a guide for the program and as a way to track your progress.*

*I will collect this at the end of the study, so please log your time carefully!*

YOGA (Date)	MEDITATION	GRATITUDE INTENTION & PRACTICE	NOTES / MISC
Week 1 (12/1 – 12/7)			
** Please be sure to do the meditation and gratitude practice on the same day – they are meant to go together **			
_/_/_	Start Here; a Beginner's Meditation (Raquel Jordan) & Breath Observation (Dan Guerra)  COMPLETED ____ / ____ / ____	1. Breathe ( <i>Taking air in and out of the lungs; finding a deep breath</i> ) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i>  COMPLETED ____ / ____ / ____	
_/_/_	Morning Meditation with Music (Jonathan Lehmann)  COMPLETED ____ / ____ / ____	1. Mindfulness ( <i>A balanced, open-minded approach to negative emotions</i> ) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i>  COMPLETED ____ / ____ / ____	
_/_/_	Maintain Perspective and Cultivate Gratitude (Lisa Abramson)  COMPLETED ____ / ____ / ____	1. Gratitude ( <i>Thankful appreciation for the good in your life</i> ) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i>  COMPLETED ____ / ____ / ____	
_/_/_	Mood Boosting (Brittany Turner)  COMPLETED ____ / ____ / ____	1. Mental Health ( <i>Positive and flourishing psychological and emotional well-being</i> ) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i>  COMPLETED ____ / ____ / ____	

<p>__/__/__</p>	<p>Perfect Health Meditation (Nicole Bayliss)</p> <p>COMPLETED ____/____/____</p>	<p>1. Physical Health (<i>Feeling well physically, not just the absence of disease and infirmity</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>WEEK 2 (12/8 – 12/14)</p> <p>** Please be sure to do the meditation and gratitude practice on the same day – they are meant to go together **</p>			
<p>__/__/__</p>	<p>Relaxation for Busy People (Chantelle Diachina)</p> <p>COMPLETED ____/____/____</p>	<p>1. Rest (<i>Ceasing work and movement to relax, refresh and recover</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>__/__/__</p>	<p>Setting Yourself Free (Jessica Calderon)</p> <p>COMPLETED ____/____/____</p>	<p>1. Autonomy (<i>Independent, free from external control or influence</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>__/__/__</p>	<p>Practicing Gentle Kindness toward Yourself (Sarah Blondin)</p> <p>COMPLETED ____/____/____</p>	<p>1. Self-kindness (<i>Feeling loving toward yourself in the face of suffering or failure</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>__/__/__</p>	<p>Self-Love Affirmation (Roaming Yogi Adventures)</p> <p>COMPLETED ____/____/____</p>	<p>1. Body Love &amp; Appreciation (<i>Feeling love and respect for your body; beauty comes in many forms</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	



<p>__/__/__</p>	<p>Divine Light Meditation (Julie Bladon)</p> <p>COMPLETED ____/____/____</p>	<p>1. Powerful (<i>Feeling in charge of daily responsibilities and current living situation</i>) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>WEEK 3 (12/15 – 12/21)</p> <p><b>** Please be sure to do the meditation and gratitude practice on the same day – they are meant to go together **</b></p>			
<p>__/__/__</p>	<p>Just Like Me Meditation (Sean Fargo)</p> <p>COMPLETED ____/____/____</p>	<p>1. Common Humanity (<i>Suffering is part of the shared human experience</i>) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>__/__/__</p>	<p>Divine Connection (Jason McGrice)</p> <p>COMPLETED ____/____/____</p>	<p>1. Connected (<i>A link, a relationship – toward yourself, others and the environment around you</i>) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>__/__/__</p>	<p>Body Metta (Sarah Jane Chapman)</p> <p>COMPLETED ____/____/____</p>	<p>1. Beauty (<i>Recognizing a wide variety of appearances as beautiful</i>) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>__/__/__</p>	<p>Manifestation Meditation (Melissa Ambrosini)</p> <p>COMPLETED ____/____/____</p>	<p>1. Personal Growth (<i>Desire for continued growth, education and improvement</i>) 2. <i>Participant's Choice</i> 3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	

<p>__/__/__</p>	<p>Breath and Affirmation Meditation (Casey Conerly)</p> <p>COMPLETED ____/____/____</p>	<p>1. Inner Positivity (<i>Behavior that reveals a positive attitude and body image</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>WEEK 4 (12/22 – 12/28)</p> <p>** Please be sure to do the meditation and gratitude practice on the same day – they are meant to go together **</p>			
<p>__/__/__</p>	<p>Loving Kindness on the Go (Manoj Dias)</p> <p>COMPLETED ____/____/____</p>	<p>1. Relationships (<i>Participating in pleasant, warm and gratifying relationships</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>__/__/__</p>	<p>Accepting Change (Sarah Blondin)</p> <p>COMPLETED ____/____/____</p>	<p>1. Flexibility (<i>Attentive to your body's changing needs</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>__/__/__</p>	<p>Purpose Meditation (Tamara Lechner)</p> <p>COMPLETED ____/____/____</p>	<p>1. Purpose (<i>A sense of direction and meaning in life</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>__/__/__</p>	<p>Forgiveness Meditation (Chris Grosso)</p> <p>COMPLETED ____/____/____</p>	<p>1. Forgiveness (<i>conscious decision to release negative feelings toward one who has wronged you</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	

<p>__/__/__</p>	<p>Self-Appreciation (Kristy Arbon)</p> <p>COMPLETED ____/____/____</p>	<p>1. Self-acceptance (<i>Feeling generally confident and positive about yourself</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>WEEK 5 (12/29 – 12/31)</p> <p><b>** Please be sure to do the meditation and gratitude practice on the same day – they are meant to go together **</b></p>			
<p>__/__/__</p>	<p>Self-Compassion Meditation (Melli O'Brien)</p> <p>COMPLETED ____/____/____</p>	<p>1. Self-compassion (<i>extending compassion to one's self during times of failure, inadequacy and suffering</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	
<p>__/__/__</p>	<p>Honoring Life (Sarah Blondin)</p> <p>COMPLETED ____/____/____</p>	<p>1. Life-Satisfaction (<i>Feeling satisfied with your life as a whole</i>)  2. <i>Participant's Choice</i>  3. <i>Participant's Choice</i></p> <p>COMPLETED ____/____/____</p>	

Appendix J

The Balanced Woman Welcome Packet, YO



T h e   B a l a n c e d  
W o m a n

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You have been randomly assigned to the **Yoga Only** group.

Participation in this group includes:

5. Taking a 15-minute online survey about your well-being and other basic health and demographic information at 3 different time points
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The pages that follow include detailed information about [Balance Yoga & Wellness](#) and [The Balanced Woman](#). Please review carefully, and contact [carolyn@balanceyogany.com](mailto:carolyn@balanceyogany.com) with any questions.

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Best always,

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Your unlimited yoga begins Saturday 12/1! Yoga classes are to be completed *at least* two times each week at Balance Yoga & Wellness, though feel free to take as many beyond the required two as you like!

All of the yoga classes offered at [Balance Yoga & Wellness](#) count toward the 2x/week requirement including Bikram, Vinyasa, Slow Flow, Yin + Restorative. You can take pilates classes though they will not count toward the yoga requirement for the study.

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**CLASS DESCRIPTIONS:**

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December Schedule: Sign up for your next class [HERE!](#)



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9:30am: Bikram Yoga (90 min)	9:30am: Hot Vinyasa (60 min)	9:30am: Bikram & Music (90 min)	9:30am: Hot Vinyasa (60 min)	9:30am: Vinyasa Flow - No Heat! (60 min)	8am: Bikram Yoga (90 min)	10:30am: Slow Flow Vinyasa (60 min) <i>NEW CLASS!!</i>
11:30am: Slow Flow Vinyasa (60 min)	6pm: Hot Vinyasa (60 min)	11:30am: Slow Flow Vinyasa (60 min)	6pm: Hot Power Pilates (60 min)	6pm: Hot Vinyasa (60 min)	10am: Hot Vinyasa (60 min)	12:00pm: Hot Vinyasa & <i>Optional</i> Guided Meditation (60-75 min)
5:30pm: Bikram Yoga (90 min)	7:30pm: Bikram Yoga Express (60 min)	5:30pm: Hot Vinyasa & <i>Optional</i> Guided Meditation (60 - 90 min)	7:30pm: Bikram with Music (60 min)		11:15am: Hot Power Pilates (60 min)	4pm: Bikram Yoga (90 min)
7:30pm: Hot Power Vinyasa (60 min)		7:30pm: Bikram Express (60 min)			1pm: Slow Flow Vinyasa (60 min)	6:30pm: Candlelight Yin & Restorative (60 min)
					4pm: Bikram Yoga (90 min)	

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CONTACT INFORMATION:

[Balance Yoga & Wellness](#) is a yoga studio in Larchmont, NY specializing in vinyasa, Bikram yoga, kids' yoga and mat pilates.

Massage, reflexology and Reiki too!

All levels welcome!



Carolyn D. Frost

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