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THE IMPLEMENTATION OF A 30X30 NATURE CHALLENGE AMONG STUDENTS

ATTENDING THE UNIVERSITY OF WISCONSIN-LA CROSSE

A Graduate Project Submitted in Partial Fulfillment of the Requirements for the Degree of
Master of Public Health in Community Health Education

Kristy E. Pearson

College of Science and Health
Community Health Education

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By: Kristy E. Pearson

We recommend acceptance of this project in partial fulfillment of the candidate's requirements for the degree of Master of Public Health

The candidate has completed the oral defense of the project.

Michele Pettit HEHP 04-16-18
Michele Pettit, MPH, PhD, MCHES Department Date
Program Committee Chair

G.D. Gilmore DHEHP 4/16/18
G.D. Gilmore, MPH, Ph.D, MCHES Department Date
Graduate Program Director

Project accepted

Meredith Thomsen 8-3-18
Meredith Thomsen Date
Graduate Studies Director

ABSTRACT

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The purpose of the project was to implement a *30x30 Nature Challenge* among students attending the University of Wisconsin-La Crosse, during the Spring 2018 semester. The overall goal was to increase nature relatedness, perceived social support, and physical activity among challenge participants. Participants were challenged to spend 30 minutes outside per day for a total of 30 days. During the challenge, motivational emails were sent out each week as reminders to each participant. College students face a plethora of stressors which can result in feelings of loneliness and isolation, especially with an increased use of technology. The journey through college is full of changes and transitions, which can trigger mental health issues. Research has shown that experiences in the natural world reduce stress and increase feelings of belonging and happiness. The current project focused on implementing and motivating students to get active outdoors with their peers. The challenge was marketed via campus resources and through various channels in association with the Wellness and Health Advocacy Division. The pilot program utilized a pre-test and post-test to determine any change in participant perception and behaviors. Overall, the participants in the *30x30 Nature Challenge* showed an increase in nature relatedness, increase in perceived social support, and an increase in physical activity. The results of the pilot program can be utilized to implement future, larger scale *30x30 Nature Challenges* on campus.

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TABLE OF CONTENTS

	PAGE
LIST OF TABLES.....	vii
LIST OF APPENDICES.....	viii
INTRODUCTION AND OVERVIEW.....	1
Introduction.....	1
Significance of the Problem.....	2
Rationale for the Project.....	5
Review of the Literature.....	7
College Health.....	7
Social Support.....	9
Nature Relatedness/Connection.....	11
Theories Related to Human Nature Connection.....	13
Attention Restoration Theory.....	13
Biophilia Theory.....	14
Summary.....	15
METHODS.....	16
Project Activities and Procedures.....	16
Creation of an Evaluation Tool.....	16
Global Physical Activity Questionnaire.....	17
Nature-Relatedness Scale.....	18
Social Support Scale.....	19
Marketing the Challenge.....	19
Implementation of the Challenge.....	21
University Approval.....	22
FINDINGS.....	22
Survey Results.....	22
Results from Nature Relatedness Questions.....	25

Pre-test Survey Results.....	25
Post-test Survey Results.....	26
Results from Social Support Questions.....	27
Pre-test Survey Results.....	27
Post-test Survey Results.....	27
Results from Physical Activity Questions.....	28
Pre-test Survey Results.....	28
Post-test Survey Results.....	28
Participant Feedback.....	29
Summary of Results.....	30
DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS.....	31
Discussion.....	31
Conclusions.....	33
Recommendations.....	34
REFERENCES.....	36

LIST OF TABLES

TABLE		PAGE
1.	Project Timeline.....	22
2.	30x30 Challenge Pre-test Demographics.....	24
3.	30X30 Challenge Post-test Demographics.....	25
4.	Nature Relatedness T1 & T2 Mean Comparison.....	27
5.	Nature Relatedness T1 & T2 Mean Comparison Continued.....	27
6.	Social Support T1 & T2 Mean Comparison.....	28
7.	Physical Activity T1 & T2 Mean Comparison.....	29

LIST OF APPENDICES

APPENDIX		PAGE
A.	Certificate of IRB Completion and Approval.....	39
B.	Informed Consent Form.....	41
C.	Marketing Email with Challenge Explanation.....	44
D.	"Welcome" and Motivational Emails.....	46
E.	<i>30x30 Nature Challenge</i> Qualtrics Survey.....	49
F.	Nature Challenge Log.....	55

SECTION I: INTRODUCTION AND OVERVIEW

Introduction

College is a journey that involves major life transition. Students on campus face a plethora of stressors ranging from finances, and college coursework, to making new friends. College can be described as a time of unforeseen challenges, unfamiliar surroundings, and an ever-changing class and work schedule. It is a time when students begin to learn more about who they are and where they fit in. All of these factors contribute to the amount of success a student experiences throughout their time in college.

According to Ruthig, Haynes, and Perry (2008), "stress and depression are common bi-products of the transition to college and are associated with negative outcomes, ranging from unhealthy behaviors (e.g., poor diet, tobacco use, sleep deprivation) to impaired concentration, attention, studying, and class attendance" (p. 234). These bi-products can negatively influence a student's successful journey through college life. Such stressful life events have the ability to cause psychological distress among college students (Zhang, 2017).

In times of psychological distress, students' academic performance and ability to successfully adapt to college life are affected (Ruthig et al., 2008). According to Ruthig et al. (2008), optimism and social support during early college years acted as a buffer and predicted less psychological distress and depression. Mental health during college years can be impacted by a variety of factors; for example, "one important factor positively affecting college students' life satisfaction is social connectedness or feeling a sense of belonging with others" (Blau, DiMino, DeMaria, Beverly, Chessler, & Drennan, p. 585, 2016). Another factor impacting the health and well-being of college students is the amount of physical activity completed per week

(Plotnikoff, Costigan, Willians, Hutchesson, Kennedy, Robards, Allen, Collins, Callister, & Germov, 2015). Both social connectedness and amount of physical activity can be impacted by the utilization of technology.

Significance of the Problem

A study of 1,378 college students, conducted by Hefner and Eisenberg (2009) found that students with low quality social support networks were more likely to experience mental health problems, including symptoms of depression. Moreover, a recent survey of United States postsecondary institutions, revealed that 30.2% of undergraduate students, "in the last two weeks, felt very sad" (American College Health Association, 2017, p.14), and 28.6% "in the last two weeks, felt very lonely (American College Health Association, 2017, p.13). Loneliness is "often accompanied by unhealthy emotions, such as dolefulness, helplessness, and depression, and thus, significantly affects mental health" (Ni, Yang, & Zhang, 2015, p.560). The challenges that loneliness brings can hinder mental and physical health, and impact academic performance (Khallad & Jabr, 2016).

The amount of face-to-face social support a college student gives and receives can be negatively impacted by time spent utilizing technology. Social media sites have the ability to "intensify loneliness by encouraging withdrawal from offline social interactions or by substituting superficial online relationships for more intimate ones" (Whon & LaRose, 2014, p.158). According to a study conducted by Roberts, Petnji-Yaya, and Manolis (2014) of 2,500 undergraduate students, "excessive cell-phone use impacts relationships among and between students, between students and their professors and parents, and between students and supervisors at work" (p. 255). Screen time has the ability to impact the quality of relationships that students form over the course of their college journey. The same study by Roberts et al.

(2014), found that college males spent almost 8 hours a day on their cell phones, whereas females reported spending 10 hours a day on their cell phones. Students in the study reported spending the most time texting, sending emails, and checking Facebook (Roberts et al., 2014).

With the age of technology, screen time has been readily accessible to students on college campuses. Whether it is watching television, playing video games, working on homework, checking Facebook, or texting, screen time is part of a regular routine for most college students. According to Eitzen (2008), "the current communications revolution increases interaction while reducing intimacy...we have seen a tenfold increase in communication by electronic means, and tenfold reduction in person-to-person contact" (p. 674).

Not only does technology influence the amount of person-to-person contact one receives, it can also decrease the amount of physical activity in which one engages. Rebold, Lepp, Sanders, and Barkley (2015) conducted a study of college students to determine the relationship between cell phone usage and physical activity. The study found that students described cell phone usage as a sedentary behavior and those who reported higher amounts of cell phone usage took part in a greater number of sedentary behaviors, such as watching TV and playing video games (Rebold, Lepp, Sanders, & Barkley, 2014).

This technology-oriented behavior contributes to the overall health and well-being of college students. Even though it may seem that this behavior is normal, increased screen time and less face-to-face interactions among students can have a detrimental impact on their physical health and mental well-being (Whon & LaRose, 2014). As noted by Eitzen (2008), "new information technologies only create the illusion of communication and intimacy...we are communicating messages electronically, but without really connecting" (p. 675). Students

require face-to-face social support, consistent physical activity, and life balance to ensure a positive college career. Fortunately, there are a variety of campus resources available for students to support a successful college journey.

In our society today, screen time has been increasing and college students are spending more time being sedentary (Rebold et al., 2014). Instead of spending quality time engaged in face-to-face interactions with friends outdoors, students are glued to any accessible screen and engulfed in constant stimuli, most likely sitting or lying down (Rebold et.al., 2014). This sedentary, technology-oriented lifestyle has been a major contributor to obesity, depression, and social isolation.

According to the U.S. Department of Health and Human Services, consistent physical exercise has been known to reduce chronic diseases; 12.6 million people in the United States have heart disease, while 17 million people have diabetes, where 90% to 95% cases are type 2 diabetes, which has been associated with obesity and lack of physical activity (U.S. Department of Health & Human Services, 2017). Regular physical activity also has been shown to positively impact mental health (Lewis & Hannekens, 2016). Unfortunately, as noted by Plotnikoff et al. (2015), "in the United States nearly half of all university students are not achieving the recommended levels of physical activity" (p. 2). Moreover, students who reside on campus have a greater chance of sedentary behaviors and have more of a risk for negative health outcomes (Plotnikoff et al., 2015).

With more time spent being sedentary and utilizing technology (Plotnikoff et al., 2015), students are spending less time interacting socially/face-to-face (Whon & LaRose, 2014), along with less time outdoors, actively engaged in play and exercise. This shift in behavior over the course of the past two decades desperately needs to be addressed. One way to counter this trend

is to encourage students to get outside for social interaction and physical activity. The natural environment has a plethora of benefits to offer students of all different backgrounds and experiences.

Rationale for the Project

According to the American Public Health Association (APHA) (2013), "people of all ages and abilities enjoy higher levels of health and well-being when they have nature nearby in parks, gardens, greenways, and natural landscaping around homes and workplaces" (p. 2). The University of Wisconsin-La Crosse (UWL) campus is filled with green spaces, trees, and remarkable views of Grandad Bluff. The La Crosse area provides a fruitful landscape for outdoor physical activity and adventure. The bluffs are near enough to campus for students to walk, rollerblade, run, or ride their bikes. Moreover, the Mississippi River and its backwaters weave their way through the community, providing endless opportunities for recreation.

As noted by Plotnikoff et al. (2015), "higher education institutions are an appropriate setting to promote healthy lifestyles" (p. 3). The University of Wisconsin-La Crosse (UWL) Wellness and Health Advocacy division is equipped with the resources and scientific know-how to implement a student-wide program designed to challenge students to get outdoors in a natural setting and to increase physical activity, nature relatedness/connection, and face-to-face social interaction. The Wellness and Health Advocacy division also has the resources to promote a program to engage a large number of students in a "behavior change intervention" (Plotnikoff et al., 2015, p.3).

The David Suzuki Foundation (DSF), a non-profit organization based in Canada believes "we are interconnected with nature, and with each other (DSF, 2017). Moreover, "what we do to the planet and its living creatures, we do to ourselves" (David Suzuki Foundation, 2017). The

mission of the David Suzuki Foundation is to protect nature and citizens' quality of life in relation to it (Nisbet, 2015). The David Suzuki Foundation has created a *30x30 Nature Challenge* to encourage people to spend 30 minutes outside per day for 30 days; it promotes getting outside with a friend, getting active, and connecting with the surrounding environment. This challenge is a way to incorporate physical activity, social interaction, and nature connection among UWL students.

There are a variety of benefits associated with physical activity in an outdoor setting. According to Nisbet (2015), "regular nature contact is associated with feelings of nature connectedness, as well as greater happiness" (p. 2). Moreover, "the 30x30 Nature Challenge strives to encourage people to connect with nature and, as a result, improve their personal health and happiness" (Nisbet, 2015, p.2). 1,896 individuals participated in their 2015, 30x30 Nature Challenge; these individuals reported spending more time in nature; they also reported an increase in nature connectedness and relatedness, as well as moderate improvement in well-being, to include positive emotions and vitality (Nisbet, 2015). These improvements support the following statement as noted by APHA (2013), "access to safe, natural settings has a positive influence on health and well-being, increasing the likelihood of walking and other forms of physical activity, fostering social connections, and reducing stress and illness" (p. 1).

This *30x30 Nature Challenge* is a perfect fit for students at UWL. It provides the opportunity for students to challenge themselves in a positive way, with the freedom to choose their own outdoor activities. Moreover, the *30x30 Nature Challenge* helps encourage students to find activities to do outside of their living areas through incentives and social interaction. College students consistently are busy with school work and technology and thus, it is imperative to help re-introduce healthy behaviors that take them away from the screen and get them

physically active outside, and interacting with others. The implementation of this type of challenge helps get students outside and encourages them to engage in physical activity. The thirty-day challenge is the beginning of forming a habit which will endure over time.

Review of the Literature

College Health

The Spring 2015 National College Health Assessment conducted by the American College Health Association (ACHA) surveyed 7,806 students within the University of Wisconsin System, 26.5% of students who were surveyed "felt very sad in the last two weeks" (American College Health Association, 2015, p. 14). The same study found that 25.3% of students reported "feeling very lonely in the last two weeks" (ACHA, 2015, p. 13). These two questions are indicators of students who are possibly experiencing symptoms of depression. The state of students' mental health during their college years can have a great impact on academic performance, relationships, and well-being (Fountain, Liguori, Mozumdar, & Schuna, 2011; Hefner & Eisenberg, 2009). One way to mediate the symptoms of depression is to build a strong support system (Blau et al., 2016; Hefner & Eisenberg, 2009; Ruthig et al., 2009) and engage in regular physical activity (Plotnikoff et al., 2015).

The Department of Health and Human Services (HHS) (2017) recommends that adults aged 18-64 should get "at least two and a half hours (150 minutes) each week of moderate-intensity aerobic physical activity" (HHS, 2017, p. 6). Only 45.9% of students in the University of Wisconsin system met the recommended guidelines for exercise, categorized as moderate-intensity cardio exercise for at least 30 minutes, 5 or more days per week or vigorous-intensity cardio for at least 20 minutes, 3 days per week (ACHA, 2015). While 45.9% is almost half of the University of Wisconsin system student population, there is room for improvement.

The Spring 2015, National College Health Assessment conducted by the American College Health Association within the University of Wisconsin System asked "on how many days of the past 7 days did you: do moderate intensity cardio or aerobic exercise for at least 30 minutes?" Responses showed 23.1% of students selected 0 days and 14.7% selected 1 day. The impacts of regular physical activity have been shown to decrease risks of chronic disease and increase positive mental health (Lewis & Hannekens, 2016; U.S. Department of Health & Human Services, 2002).

Screen time acts as a barrier for college students to engage in physical activity and face-to-face social interaction on a regular basis. According to Atchley, Strayer and Atchely "adults and children are spending more time interacting with media and technology and less time participating in activities in nature" (p. 2012). Screen time has been an activity that students engage in while being sedentary (Rebold et al., 2014). Increased screen time may also act as a barrier to engaging in face-to-face personal connections and is thus, detrimental to social support. In fact, a study of 4,747 college students investigated the impacts of screen time on physical activity and found that, "low physical activity and high screen time are associated with increased risks of mental health problems and poor sleep quality" (Wu, Tao, Zhang, Zhang, & Tao, 2015, p.1). The same study found that higher amounts of screen time were associated with depression and anxiety (Wu et al., 2015).

Previous reports have documented the amount of time students are spending on their cell phones. College males reported spending almost 8 hours a day texting, sending emails, or checking Facebook (Roberts et al., 2014), whereas females reported spending 10 hours a day on their cell phones texting and checking Facebook (Roberts et al., 2014). It is almost common practice for students to bring their cell phones everywhere with them. When walking on campus,

it is difficult to find a student who is not looking down at their cell phone. The increased use of technology to communicate has hindered human ability to converse face-to-face. In the world today, it is extremely important to reintroduce the concept of social support. While information technology makes connection with those far away easier, there is no substitute for personal face-to-face interactions. Technology is an ever present part of life. It can benefit our society in a variety of ways, especially in the field of health education and college programming. Although, it is important to find a balance between the utilization of technology and social interactions. These interactions are the foundation for building any type of relationship and they play a key role in feelings of belonging to a campus (Nicpon et al., 2006).

Social Support

Human beings are social by nature; most people have an intrinsic motive for meaningful relationships and connections. As noted by Seaward (2011) "we need the companionship of others, if not for physical survival, then at least for moral support on our own human journey" (p. 162). In fact, social support has the ability to positively impact students' life satisfaction across demographic variables (Blau et al., 2016). Social support provides students with a sense of belonging. When there is a feeling of social support associated with their identity, students are equipped with "a psychosocial coping resource that positively affects their personal resources such as self-esteem and self-efficacy" (Hefner & Eisenberg, 2009, p. 491). When students feel they belong at UWL, they would experience a greater sense of connection and college life would become more manageable.

On the other hand, students who were experiencing distress were more likely to be socially isolated (Hefner & Eisenberg, 2009). Moreover, students with a lower quality of social support were more likely to experience mental health issues, including depressive symptoms

(Hefner & Eisenberg, 2009). Fortunately, Khallad and Jabr (2016) found that perceived social support from family and friends was associated with lower levels of depression among students. Similarly, Ni, Yang, and Zhang (2015) noted that "social support is an important protective factor against loneliness and mental health problems" (p. 560). The amount of social support one receives can be greatly influenced by the type of environment in which one resides.

A study conducted by Kuo and Sullivan (2001) focused on the amount of green space near a Chicago housing neighborhood and the levels of aggression among residents. Their results concluded that the level of aggression experienced by those living closer to green spaces were less than their neighbors who did not live in close proximity to green spaces (Kuo & Sullivan, 2001). Kuo and Sullivan (2001) found that lower levels of aggression gives rise to a greater sense of community cohesion and social connection. Specifically, Kuo and Sullivan (2001) indicated that "positive mood has been linked directly with contact with nature, and it seems plausible that positive moods could reduce the propensity for aggression" (p. 549). According to their research, neighborhood social connection and support networks were stronger in green neighborhood areas (Kuo & Sullivan, 2001). This finding aligns with the following statement from American Public Health Administration (AHPA) (2013) "people of all ages are more likely to use open spaces with trees, increasing opportunities for social interaction" (p. 2). Thus, social support is facilitated by proximity to green spaces and those who live close to natural areas exhibit better community cohesion and better moods (APHA, 2013; Kuo & Sullivan, 2001).

Nature Relatedness/Connection

According to APHA (2013), "people of all ages are more likely to use open spaces with trees, increasing opportunities for social interaction" (p. 2). The combination of physical activity with exposure to the natural environment is associated with better mental health outcomes

(Mitchell, 2013). There is an innate connection between humans and the natural world. As noted by Nisbet (2015), "nature contact is good for people, but it also fosters prosocial and pro-environmental behavior" (p. 2). Tapping into the benefits that nature has to offer can increase mental and physical well-being (Mind, 2015). According to Williams (2017), "when we slow down, stop the busywork, and seek out natural surroundings, we not only feel restored, but also improve our mental performance" (p. 108).

The term ecotherapy has been utilized to describe the impacts that nature has on individual well-being. Ecotherapy involves connecting to the natural world, and strengthening an individual's relationship to nature; this can involve gardening, walking in the woods, bicycling the countryside, or simply being outdoors (Mind, 2015). Ecotherapy is utilized as a nature-based intervention to improve mood, enhance physical functioning, and increase self-esteem (Mind, 2015). Mind, a charity based in England, has worked with the University of Essex to conduct studies on the benefits of ecotherapy in treating mental distress (Mind, 2015). Fifty-three group members of Mind, who had been diagnosed with schizophrenia and substance-related mental health disorders, participated in a green exercise study; one group was assigned to weekly swimming while the other group was assigned to walking in green areas (Barton, Griffin, & Pretty, 2012). The Mind members who walked in green spaces reported a significant improvement in self-esteem post exercise; over the six-week study, an increase in mood and self-esteem was found among members (Barton, Griffin, & Pretty, 2012). In another study conducted by Mind, 108 individuals were surveyed to determine their perceived self-esteem and mood after green exercise (i.e., a walk in a country park); 90% felt increased self-esteem, 70% reported a decline in depression, and 88% had an overall upturn in their mood after a walk in nature (Mind, 2015).

These nature-based activities can promote healthy habits and decrease sedentary behaviors that contribute to obesity and serious chronic health issues (Flett, Moore, Pfeiffer, Belonga, & Navarre, 2010; Sackett, 2010; Shin, Yeoun, Yoo, & Shin, 2010). The nature-based activities do not have to be thought of as ecotherapy in order for one to reap the multitude of benefits to physical health and mental well-being. Outdoor activities can be as simple as a walk in the woods or through a park with trees and greenery. Nature-based activities can incorporate physical activity in a green setting along with social interaction to benefit individuals' mental health. Numerous studies have looked at the ways in which the natural environment impacts mental health and well-being.

Nature-based activities have been linked to positive psychological and physiological improvements across the lifespan (Chalquist, 2009; Mind, 2015; Ochiai, et al., 2015; Shalin, Ahlborg, Tenenbaum, & Grahn, 2015). A study conducted in Sweden utilized nature-based activities (gardening, walks at a nature center, guided nature relaxation, and information dissemination on human connection with nature) as a rehabilitation tool for individuals suffering from stress-related mental disorders, such as depression and anxiety (Shalin, Ahlborg, Tenenbaum, & Grahn, 2015). Shalin, Ahlborg, Tenenbaum, and Grahn (2015) reported that participants in the nature-based activities had decreased scores of depression and anxiety; their follow-up scores of well-being increased and there was also a drop in their health care utilization.

Nature-based activities can be useful to college students in a plethora of ways. Results from the 2015, *30x30 Nature Challenge* conducted in Canada by the David Suzuki Foundation showed that, "nature contact was the activity that changed most; participants also increased their contact with friends, and significantly reduced their time using technology (phone, texts, email)" (Nisbet, p.4). In fact, experiences in the natural environment can reduce depression and anxiety

(Shalin, Ahlborg, Tenenbaum, & Grahn, 2015) while helping students take a mental break from studying (Berigan & Pielage, 2013). For example, a study conducted by Berigan and Pielage (2013) at the University of Wisconsin-La Crosse examined the effects of nature on attention. The researchers investigated whether the viewing of natural environments was restorative to attention. The researchers sought to determine the best way to restore attention after mental fatigue due to hours of studying (Berigan & Pielage, 2013). The researchers compared four different study breaks to include: viewing a natural setting near campus, viewing a semi-built environment, watching nature on television, and watching a sitcom (Berigan & Pielage, 2013). The researchers found that "those who viewed nature had a higher mean change in attention" (Berigan & Pielage, 2013, p. 4). This trend is in agreement with attention restoration theory, whereby voluntary attention can be restored through experiences in the natural environment (Kaplan & Berman, 2010).

Theories Related to Human Nature Connection

Attention Restoration Theory

There are several theories that postulate why a connection with the natural world stimulates individual well-being and increases positive mental health. Attention restoration theory (ART) developed by Kaplan describes mental fatigue resulting from draining voluntary, direct attention, which means the attention used to focus on a specific task can be depleted (Kaplan & Berman, 2010). This type of direct attention is subject to fatigue, but can be restored through involuntary attention (i.e., "attention that requires no effort, such as when something exciting or interesting occurs") (Kaplan & Berman, 2010, p.45) in a restorative environment (Kaplan & Berman, 2010, p.45). A restorative environment consists of feelings of separation from the cause of direct attention fatigue, as well as feelings of enjoyment, and fascination, and diversity (Kaplan & Berman, 2010). Natural environments have the ability to restore fatigued,

direct attention, by serving as a positive contrast and evoking involuntary attention (Kaplan & Berman, 2010).

People have constant access and can access to information via technology devices in today's society. It is easy to get caught up in technology devices when people are consistently marketed to. According to Seward (2011), "current estimates suggest that the average person is bombarded with more than 3,000 advertisements a day from television, radio, and the internet" (p. 98). Students are busy utilizing direct attention to focus on technology, homework, and studying. Fortunately, their involuntary attention can be geared towards the natural environment which can support their overall well-being. Humans have lived in harmony with the land for thousands of years. It is only recently that information technology disrupted this harmony and negatively impacted the overall health and well-being of society. Biophilia theory postulates that this disconnect from nature has resulted in ill health.

Biophilia Theory

Biophilia literally means "the passionate love of life and all that is alive" (Fromm, 1973, p.365). The biophilia theory hypothesizes that the survival of our ancestors depended on their connection with the natural world and by hunting and gathering, they were able to live day to day. Although this is not key to survival in our society today, a genetic connection to nature remains an innate part of a human being (Capaldi, Passmore, Nisbet, Zelenski, & Dopko, 2015; Kellert, 2005).

When this connection to the natural world is broken, students can feel lost and begin to take part in behaviors that lead them to exhibit symptoms of depression and anxiety (Louv, 2006). Our society has increasingly removed itself from the natural world towards a virtual

reality. There is no way this virtual reality can fulfill our innate behavioral desire to interact with and appreciate the beauty of the nature around us.

Summary

College is a time when students begin to find themselves, and they have more opportunities to learn and grow through independence and decision making. College also is a time for individuals to develop lifelong healthy behaviors to help them live life to the fullest. The journey through the college years can be fraught with stress, mental health issues, and change. In order to develop a strong sense of self, college students require balance in their lives. A balanced life is key to formulating positive health habits that continue throughout the lifespan. This type of balance can be achieved during the college years when campus divisions, like Wellness and Health Advocacy, encourage and promote programming targeted towards increasing physical activity, social support, and interaction with the natural environment.

Engaging in physical activity while in college during this age of information technology is imperative to student mental health and well-being. The ability to develop a sense of belonging to a university and to the people there increases academic performance and retention (Nicpon et al., 2007). The natural environment of the La Crosse area is extensive. In fact, the Bluffs and the Mississippi River are symbols of the community. These natural areas are perfect for students to explore the land, while finding balance within their own lives. In order to hone in on the benefits that the natural world has to offer, students must be made aware of the positive impacts of the natural world on health and well-being.

SECTION II: METHODS

Project Activities and Procedures

Creation of an Evaluation Tool

An evaluation tool was created to measure the impact that the *30x30 Nature Challenge* had on participants' levels of physical activity, feelings of social support, and nature relatedness. The goal of the *30x30 Nature Challenge* was to increase the amount of time undergraduate students at UWL spend outdoors engaging in physical activity, with others. The program objectives were as follows: At the end of the challenge, participants will report: (a) an increase in time spent outside, (b) an increase in perceived social support, and (c) an increase in nature relatedness.

A review of the literature was conducted to find surveys that measured the aforementioned variables. The principal investigator did not find any surveys that addressed all three of these variables. In fact, there was no single tool in existence to measure nature-relatedness, social support, and physical activity. Therefore, the principal investigator decided to search already established surveys for questions that measured each variable. Two professional colleagues from the Office of Student Life reviewed the first draft of the survey to ensure the questions were appropriate for the target audience. These individuals were chosen because of their knowledge of the population and their knowledge of creating evaluation tools. After the review of the survey questions, brief changes were made to the demographic questions upon recommendation from the Wellness Coordinator. The survey was created utilizing the Qualtrics software and the survey was emailed to two UWL graduate students who reviewed the questions and instructions for clarity.

The final survey consisted of seven demographic questions and nineteen questions related to physical activity, time spent outside, perceived social support, and nature relatedness. More specifically, there were six questions related to physical activity, four related to social connectedness, six regarding nature relatedness, and two addressing the challenge itself (Appendix E). Survey questions were obtained from the selected instruments; specifically, the six physical activity questions came from the Global Physical Activity Questionnaire (GPAQ) (World Health Organization, 2008), the four social connectedness questions came from the Social Integration Scale (Blau et al., 2016), and the four questions regarding nature relatedness came from The Nature Relatedness Scale (Nisbet & Zelenski, 2013). Two questions were created by the principal investigator to specifically address participants' perceptions of the *30x30 Nature Challenge*.

Global Physical Activity Questionnaire

The Global Physical Activity Questionnaire is a 16-item instrument that measures physical activity in three settings, along with sedentary behavior. The questionnaire is administered normally via face-to-face interviews, but it has been validated as a self-reported instrument (Chu, Ng, Koh, & Müller-Riemenschneider, 2015). According to Herrmann, Heumann, Ananian, and Ainsworth (2013), "the GPAQ showed low to moderately-high validity against measures of physical fitness" (p. 230). The test-retest reliability of the GPAQ was found to be strong when evaluated by Herrmann et al. (2013).

For the purpose of the project, the principal investigator utilized 4 total questions relating to physical activity and sedentary behavior from the Global Physical Activity Questionnaire. The questions were not altered in any way. Participants were asked to answer questions related to their amounts of physical activity. Questions included: (1) "Do you do any moderate-intensity

sports, fitness, or recreational (leisure) activities that cause a small increase in breathing or heart rate such as brisk walking, (cycling, swimming, volleyball) for at least 10 minutes continuously?" (Answer options included, yes or no); (2) "In a typical week, on how many days do you do moderate intensity sports (that cause a small increase in breathing or heart rate), fitness or recreational (leisure) activities?" (Answer options included a scale from 0-7); (3) "How much time do you spend doing moderate-intensity sports, fitness or recreational (leisure) activities on a typical day?" (Participants had the option to respond by filling in the blank the appropriate number of hours per day); and (4) "How much time do you usually spend sitting or reclining on a typical day?" (Participants had the option to respond by filling in the blank the appropriate number of hours per day). The last question was added by the principal investigator to determine how many days of the challenge the respondents participated in. The question read, "In the last month, on how many days did you spend 30 minutes or more outside?" Participants reported the number of days utilizing a fill-in-the-blank response box.

Nature-Relatedness Scale

Nature-relatedness was measured using the 6-item version of the Nature-Relatedness Scale developed by Nisbet and Zelenski (2013). Items included: (1) "My ideal vacation spot would be a remote, wilderness area;" (2) "I always think about how my actions affect the environment;" (3) "My connection to nature and the environment is a part of my spirituality;" (4) "I take notice of wildlife wherever I go;" (5) "My relationship to nature is an important part of who I am;" and (6) "I feel very connected to all living things and the earth." Each item was measured on a Likert scale with options including, *disagree strongly*, *disagree a little*, *neither agree or disagree*, *agree a little*, or *agree strongly*.

Social Support Scale

Social support was measured using 4 items adapted from the Social Integration Scale. Questions included: (1) “I feel like I have a lot in common with other students here at UWL;” (2) “I feel a strong sense of ‘connectedness’ with UWL students;” (3) “I have developed close interpersonal relationships here at UWL;” and (4) “When I think about my overall social life here (e.g., friendships, extracurricular activities), I feel good.” Answer options included *disagree strongly, disagree, somewhat disagree, neither agree nor disagree, somewhat agree, agree, or agree strongly*.

Marketing the Challenge

The project population consisted of undergraduate students, between the ages of 18 and 25, attending UWL during the Spring 2018 semester. Undergraduate students were selected because they are more likely to live on or near campus and could benefit from campus-wide initiatives and challenges. The target audience did not have to live on campus, but their outdoor time only included activities on campus or within the La Crosse area, in order to delimit the area for the project. Convenience sampling was utilized by allowing students interested in the challenge to sign-up at their discretion. The *30x30 Nature Challenge* was considered a pilot project as one small group of students filled out the pre-survey before the challenge began and the post-survey afterwards. Ultimately, evaluation results from the pilot project will help to determine the future efficacy of the *30x30 Nature Challenge*.

The challenge began by sending an email to Deans and/or Associate Deans of the Schools and Colleges on campus to include the: College of Business Administration (CBA), College of Liberal Studies (CLS), School of Arts and Communication (SAC), College of Science and Health (CSH), and School of Education (SOE). The email (Appendix C) explained the reason

behind the project and asked for assistance in marketing the *30x30 Nature Challenge*. If the individuals responded, a follow-up email with the project details was sent.

The follow-up email sent to Deans and/or Associate Deans included a "Welcome" message, a copy of the informed consent document (Appendix B), a description of the challenge (Appendix D), a copy of the Nature Challenge Log (Appendix F), and a link to the Qualtrics pre-survey (T1). The principal investigator then asked the Deans and/or Associate Deans to send the "Welcome" email with the Qualtrics link to their students. The informed consent document was included as an attachment to the email, so students could print it for their records. It was also designated as the first page of the Qualtrics survey. The survey included items from the Nature Relatedness Scale, the Social Integration Scale, and the shortened Global Physical Activity Questionnaire, as well as demographic questions and a space for students to fill in their email address. When the students clicked on the link and completed the Qualtrics survey, they acknowledged receipt of the informed consent document sent with the initial email. Students who participated were sent a Nature Log sheet to keep track of their time spent outside. This sheet also asked them to reflect on their experiences to enhance their connection with the natural world.

The challenge also was marketed on social media sites to include: the Office of Student Life's Wellness and Health Advocacy division's Facebook page, the UWL Health Education and Health Promotion Facebook page, and the UWL Active Minds Facebook page. Additionally, a table and poster board were set up along with a sign-up sheet to obtain student's email addresses at the Fall 2017 De-Stress Fest held at the Hall of Nations.

A week before the challenge began, the "Welcome" email and Nature Log attachment were sent to those students who completed the Qualtrics pre-test to remind them of the start date for the challenge.

Implementation of the Challenge

The goal of the *30x30 Nature Challenge* was to increase the amount of time undergraduate students at UWL spend outdoors engaging in physical activity, with others. The behavioral objectives were as follows: At the end of the challenge, participants will report: (a) an increase in the amount of time spent outside, (b) an increase in perceived social support, and (c) an increase in nature relatedness.

At the beginning of each week, motivational messages were sent to participants who had completed the Qualtrics survey. The emails were sent for encouragement and as reminders to grab friends and get outside. During the course of the month, one email was sent a week (4 total, including the "Welcome" message) to update students on campus-wide events, encourage them to include friends in their outdoor activities, and share motivational messages (Appendix D). The student participants were responsible for keeping track of their time spent outdoors during the 30-day event. The week following the close of the *30x30 Nature Challenge*, the principal investigator sent out the post-test (T2) to gain participants' feedback and perspectives on the challenge.

When students had completed the post-test, the principal investigator analyzed the data in comparison to the pre-test information to look for changes and trends. After data analysis, the principal investigator used a random number generator to identify the recipient for the incentive among those who participated in at least 20 days of the challenge.

University Approval

The current project was approved by the University of Wisconsin-La Crosse Institutional Review Board. The timeline for the project was as follows:

Table 1

Project Timeline

Date	Activity/Tasks
November 2017	Complete IRB – Submit for approval
December 2017	Send email to Deans and/or Associate Deans of UWL colleges and schools asking for marketing assistance
December 2017	Send email with <i>30x30 Nature Challenge</i> information to those Deans and/or Associate Deans who wish to forward information to their students
December 2017- January 2018	Market challenge on Facebook/Social Media, digital boards, and De-Stress Fest
January 2018	Obtain email addresses of participants
January 25, 2018	Send email update - Challenge begins
February 7, 2018	Send email update
February 14, 2018	Send email update
February 21, 2018	Send email update
March 2, 2018	Send post-test to participants
March 2018	Complete data analysis
March 2018	Use a random number generator to choose incentive recipient
April 2018	Summarize and report results
April 4, 2018	Complete oral defense
April 4, 2018	Have final meeting with Dr. Pettit

SECTION III: FINDINGS

Survey Results

Data from the survey were collected using Qualtrics software and were analyzed using descriptive statistics (I.e., frequencies, percentages, means, and standard deviations). The Statistical Package for the Social Sciences (SPSS) version 25 was utilized to calculate descriptive statistics and the descriptive statistics. Specifically, frequencies and percentages were

reported for demographic items and means were calculated for each objective, to include perceived social support, time spent outside, and nature relatedness. The mean for each was compared between the pre and the post test to determine differences.

The demographics of participants who completed the pre-test can be found in Table 2. A total of 15 students completed the pre-test. All but one of the participants ($n = 14$, 93.3%) were between the ages of 18-25. The one student over 25 years old was removed from the data resulting in 14 eligible participants. Most ($n = 12$, 85.7%) of the participants who completed the survey identified as female, whereas ($n = 2$, 14.3%) identified as male. All ($n = 14$, 100%) of the participants identified as White, and ($n = 1$, 7.1%) identified as being Hispanic, Latino, or Spanish origin. All of the participants ($n = 14$, 100%) identified as being undergraduate students. The largest segment of student participants were seniors ($n = 6$, 42.9%), followed by super seniors (i.e. 5th year students), ($n = 3$, 21.4%), and sophomores and juniors ($n = 2$, 14.3%) each. A majority of the participants ($n = 9$, 64.3%) reported the REC as their go to place for exercising, followed by outside ($n = 3$, 21.4%), and the YMCA ($n = 2$, 14.3%). A majority of the participants ($n = 9$, 64.3%) reported residing off-campus, followed by on-campus ($n = 4$, 28.6%), and with parents ($n = 1$, 7.1%). A total of 3 (21.4%) students completed the post-test. The demographics of participants who completed the post-test can be found in Table 3.

Table 2

30x30 Challenge Pre-test Demographics

Demographics	Frequency	Percentage
Age		
19	2	14.3%
20	1	7.1%
21	3	21.4%
22	7	50.0%
23	0	0
24	1	7.1%
Gender Identity		
Male	2	14.3%
Female	12	85.7%
Hispanic, Latino, or Spanish Origin		
Yes	1	7.1%
No	13	92.9%
Ethnicity or Race		
American Indian	0	0
Asian American	0	0
African American	0	0
Native Hawaiian/ Pacific Islander	0	0
White	14	100%
Year in School		
Freshman	1	7.1%
Sophomore	2	14.3%
Junior	2	14.3%
Senior	6	42.9%
Super Senior	3	21.4%
Exercise Location		
The REC	9	64.3%
YMCA	2	14.3%
Outside	3	21.4%
Residence		
On-campus	4	28.6%
Off-campus	9	64.3%
With parents	1	7.1%

(n = 14)

Table 3

30x30 Challenge Post-test Demographics

Demographics	Frequency	Percentage
Age		
19	1	33.3%
22	2	66.7%
Gender Identity		
Male	0	0
Female	3	100%
Hispanic, Latino, or Spanish Origin		
Yes	0	0
No	3	100%
Ethnicity or Race		
White	3	100%
Year in School		
Freshman	0	0
Sophomore	1	33.3%
Junior	0	0
Senior	2	66.7%
Exercise Location	100% (n=3) REC	
Residence	33.3% (n=1) On-campus	66.7% (n=2) Off-campus

(n = 3)

Results from Nature Relatedness Questions**Pre-test Survey Results**

A total of 14 participants responded to all questions on the pre-test. On the pre-test 28.6% ($n = 4$) of participants reported they agreed strongly with the statement, "my ideal vacation spot would be a remote, wilderness area." 57.1% ($n = 8$) reported they agreed strongly with the statement, "I always think about how my actions affect the environment." 28.6% ($n = 4$) reported they agreed strongly with the statement, "my connection to nature and the environment is a part of my spirituality." 35.7% ($n = 5$) reported they agreed strongly with the statement, "I take notice of wildlife wherever I go." 35.7% ($n = 5$) reported they agreed strongly with the statement, "my connection to nature is an important part of who I am." 21.4% ($n = 3$) reported

they agreed strongly with the statement, "I feel very connected to all living things and the earth."

The mean for the total nature-relatedness score on the pre-test was 3.98. See Table 4 for a comparison of pre-test and post-test nature relatedness results in relation to each question.

Post-Test Survey Results

A total of 3 participants responded to questions on the post-test. 100% ($n = 3$) of participants reported they agreed strongly to the statement, "my ideal vacation spot would be a remote, wilderness area." 100% ($n = 3$) of participants reported they agreed strongly to the statement, "I always think about how my actions affect the environment." 66.7% ($n = 2$) of participants reported they agreed a little to the statement, "my connection to nature is an important part of who I am." 66.7% ($n = 2$) of participants reported they agreed strongly with the statement, "I take notice of wildlife wherever I go." The mean score for total nature relatedness on the post-test was 4.5. There was an increase in mean for each nature relatedness question, while it was not statistically significant nature relatedness scores went up from pre-test (T1) to post-test (T2).

Table 4

Nature Relatedness T1 & T2 Mean Comparison

	Vacatio n Spot T1	Vacation Spot T2	Affect Environment T1	Affect Environment T2	Spirituality T1	Spirituality T2
Mean	3.57	5.00	4.57	5.00	3.78	4.33
N	14	3	14	3	14	3
Std. Deviation	1.39	.00	.51	.00	1.05	.57

Table 5

Nature Relatedness T1 & T2 Mean Comparison Continued

	Notice Wildlife T1	Notice Wildlife T2	Nature Relationship T1	Nature Relationship T2	Connected to Earth T1	Connected to Earth T2	Total NR T1	Total NR T2
Mean	4.21	4.66	4.21	5.00	4.00	4.67	3.98	4.5
N	14	3	14	3	14	3	14	3
Std. Deviation	.57	.57	.80	.00	.87	.57		

Results from Social Support Questions**Pre-test Survey Results**

On the pre-test, 51.7% ($n = 8$) of participants reported they agreed or agreed strongly, with the statement, "I feel like I have a lot in common with other students here at UWL." 42.9% ($n = 6$) of participants agreed or agreed strongly, with the statement, "I feel a strong sense of connectedness with UWL students. Connectedness meaning a sense of belonging with others." 64.3% ($n = 9$) of participants reported they agreed or agreed strongly, with the statement, "I have developed close interpersonal relationships here at UWL." 64.3% ($n = 9$) of participants reported they agreed strongly or agreed with the statement, "When I think about my overall social life here, (e.g., friendships, extracurricular activities), I feel good." A comparison of the pre-test (T1) and post-test (T2) mean results can be found in Table 6.

Post-test Survey Results

On the post-test, ($n = 3$) 33.3% reported they agreed with the statement, "I feel like I have a lot in common with other students here at UWL." 100% ($n = 3$) of participants reported they agreed with the statement, "I feel a strong sense of connectedness with UWL students. Connectedness meaning a sense of belonging with others." 100% ($n = 3$) of participants reported they agreed with the statement, "I have developed close interpersonal relationship here at UWL." Overall, there was an increase in the mean scores for social support.

Table 6

Social Support T1 & T2 Mean Comparison

	Common with UWL T1	Common with UWL T2	Connected UWL T1	Connected UWL T2	Close Relationship T1	Close Relationship T2	Social Life T1	Social Life T2
Mean	5.00	5.33	5.21	6.00	5.57	6.00	5.28	5.33
N	14	3	14	3	14	3	14	3
Std. Deviation	1.46	.57	.97	.00	1.15	.000	1.13	.57

Results from Physical Activity Questions**Pre-test Survey Results**

Participants reported spending an average of 13.57 days outside in the past month (30 days). During a typical week, participants reported doing moderate intensity sports, or fitness activities on an average of 3.86 days. On a typical day, participants reported an average of 3.79 hours of moderate intensity sports, fitness, or recreational activities. Moreover, the participants reported spending an average of 8.07 hours a day sitting or reclining. A comparison of the pre-test (T1) and post-test (T2) results for physical activity can be found in Table 7.

Post-test Survey Results

Participants reported spending an average of 23 days outside in the past month (30 days). This amount is almost double what participants reported on the pre-test. During a typical week, participants reported doing moderate intensity sports, or fitness activities on an average of 4.66 days. On a typical day, participants reported an average of 2.33 hours of moderate intensity sports, fitness or recreational activities. Moreover, the participants reported spending an average of 6.67 hours a day sitting or reclining. Participants in the challenge spent less time sitting or reclining throughout the day and on average more time physically active.

Table 7

Physical Activity T1 & T2 Mean Comparison

	Days in a week-Moderate intensity T1	Days in a week-Moderate intensity T2	Last Month Days Outside T1	Last Month Days Outside T2	Hours of moderate intensity T1	Hours of moderate intensity T2	Hours reclining/sitting per day T1	Hours reclining/sitting per day T2
Mean	3.85	4.66	13.57	23.00	3.78	2.33	8.07	6.66
N	14	3	14	3	14	3	14	3
Std. Deviation	1.40	1.52	6.66	6.08	5.33	.57	2.89	2.88

Participant Feedback

Participants were asked to comment on the strengths of the *30x30 Nature Challenge*, following are a few responses. Participants reported that the challenge served as motivator to get them outside despite the cold weather. When asked, "Please list some positive aspects of the *30x30 Nature Challenge*," one participant noted, "It got me outside on some really really horribly cold days. I made sure that I had time set aside for outdoor time as many days as I could." Another participant reported the challenge was a way to take a break from studying. "It motivated me to spend time outside and away from my desk studying!" The goal of the challenge was to help encourage participants to spend time physically active, outdoors. Based on the previous response, the challenge did just that.

Another participant even reported feelings of increased nature connectedness after completion of the challenge. This participant reported feelings of pro-environmental behavior, the responsibility to keep the natural world clean and free of trash and debris. The participant shared:

It was really nice getting outside and being apart of nature more. It gave me a better appreciation of the animals, the plants and overall the outside life besides the man made

things. It also made me more aware of how much people litter, and made me want to do more to help clean up.

Ideally, the *30x30 Nature Challenge* is a program designed to increase stewardship of the earth on which we live. It encourages participants maintain a healthy life through physical activity. When people feel a connection with the natural world, they will engage in behavior to help protect it (Nisbet, 2012). Participant responses gave an additional insight into the aforementioned objectives. This qualitative data supports further implementation and statistical calculation of future nature challenges.

Summary of Results

Based on the quantitative results of the survey participants reported a mean increase in time spent outside, an increase in nature relatedness, and an increase in perceived social support, along with less time spent sitting or reclining. These results indicate behavior change in a positive direction. While these results are not statistically significant or generalizable to the population, it is still intriguing to note. This challenge did work to increase time spent outside, nature relatedness, and perceived social support. Qualitative results to questions addressing the strengths of the challenge indicated that participants felt more motivated to spend time outside, along with a greater appreciation of the natural world (nature relatedness). Respondents indicated the time of year acted as a barrier, but the challenge helped to get them outdoors regardless. The challenge acted as a way to encourage participants to find their own activities to do outdoors, giving them a sense of connection to achieve the 30 minutes a day objective. According to a comparison of the descriptive data collected participants spent more time outside, a reduced amount of time sitting, greater feelings of nature-relatedness and an increase in social support. Overall, the results indicate a potential change in behavior in a positive direction.

SECTION IV: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Discussion

The *30x30 Nature Challenge* pilot program was created by the David Suzuki Foundation to encourage people from all walks of life to get active in an outdoor environment. When individuals feel a sense of connection to the natural world, they will be more inclined to protect it for generations to come (Nisbet, 2012). The purpose of the *30x30 Nature Challenge* was to help participants lead happier, healthier lives by connecting with nature and tuning into its benefits. Spending time in a natural environment has been shown to increase mood, reduce stress levels, boost immune system functioning, and increase happiness (APHA, 2013; Nisbet, 2015). The area surrounding the UWL campus was an ideal location to implement this type of challenge. There are nearby parks, forests, and waterways that serve as land for diverse wildlife and recreation. The challenge was a way to motivate students to get active, seek social connection, and to connect with the natural world. The challenge began in February due to principal investigator time constraints and graduation deadlines. While February is considered a winter month, participants were still able to spend time outdoors. The motivational emails that were sent weekly to participants encouraged physical activity and listed benefits of nature interaction as well as face-to-face social support.

The inclusion of social support was purposeful because perceived social support has an impact on college student mental health. In fact, there is a link between use of technology, lack of physical activity, and depressive symptoms (Plotnikoff, Costigan et al., 2015; Ruthig et al., 2008). The *30x30 Nature Challenge* served as a catalyst to encourage physical activity within a natural environment, along with face-to-face interaction among peers.

There were 14 total eligible participants who signed up for the *30x30 Nature Challenge* and participated in the pre-test. Only n=3 (T2) of those n=14 (T1) participants completed the post-test upon conclusion of the challenge. With the high rate of drop out, it was impossible to conduct a paired sample t-test to determine statistical significance. However, it was possible to compare the mean averages of each category of questions; nature relatedness, social support, and physical activity. There was a positive trend associated with each objective to include an increase in nature relatedness, social support, and physical activity. Qualitative results from participant feedback have shown positive feelings of nature relatedness to include pro-environmental behavior, as well as motivation to be physically active outside.

As such, the results of this pilot project cannot be generalized to the student population, it is a challenge that can be utilized again. This type of challenge can be used in a variety of settings from the workplace, to pre-K-12 educational settings, to college campuses. It is the belief of the principal investigator that with warmer weather and increased marketing the *30x30 Nature Challenge* could become a regular program offering through the Wellness and Health Advocacy office to increase the health of the campus population. The evidence suggests that people benefit from experiences in nature but, it is important to note that not everyone will fit this mold.

Participants of the *30x30 Nature Challenge* enrolled themselves and may have been more motivated to connect with nature. These findings are not generalizable to the campus population but the results show change in a positive direction, signifying potential change in behavior after completion of the *30x30 Nature Challenge*.

Conclusions

The challenge was a free way for students to spend time actively engaged in connecting with nature and with their peers. There is such potential for the growth of this challenge to reach more people. While the results cannot be generalized to the college student attending UWL, it would be helpful to conduct another pilot test of the *30x30 Nature Challenge*, potentially within the faculty staff population on campus to determine specific outcomes.

Overall, there is room for improvement as it relates to the marketing and implementation of the *30x30 Nature Challenge*. There were a number of barriers to marketing the challenge, such as willingness of Deans and Associate Deans to market the program to their students. Of the marketing emails initially sent out, only one Dean responded. It would be possible to overcome this barrier by holding the event during a different month, posting flyers, and utilizing the help of the Peer Health Advocates to spread the word about the challenge. One factor impacting the challenge was dropout rate, with only 21% of participants completing the post-test, it was impossible to run a statistical test of results. One way to overcome this barrier would be to market the challenge to the larger student population to have a higher rate of sign-up.

In the future, the *30x30 Nature Challenge* could be implemented as a program for faculty and staff, it would be beneficial to market it through Human Resources. From a personal standpoint, the principal investigator enjoyed the process of conducting a study from start to finish. The benefits of the natural world have helped the personal investigator with stress reduction and served as a perfect way to interact with peers. This challenge was a way for the principal investigator to spread the word about how interacting with nature can benefit others.

This information can be used by others in the field as a supplement to mental health programming at the college level and beyond. It can be used in developing lesson plans for college students to inform them of the benefits of social interaction and nature relatedness.

Recommendations

The principal investigator has the following recommendations for future *30x30 Nature*

Challenges on campus:

1. Begin the event in a warmer month; February was not the ideal timeframe for spending time outdoors.
2. Market the challenge to more students. Specifically, utilize flyers and other methods to get the word out about the challenge. Visit 100-level classes with permission of the instructors to introduce the challenge and collect student email addresses. Inform the Raquet newspaper and Campus Connect about the upcoming challenge to promote.
3. Include more outdoor ideas and options in the motivational emails. It would be beneficial to include a link in each email to the campus event calendar, for students to have an additional resource.
4. Encourage social interaction in the motivational emails, through the construct of perceived benefits of the Health Belief Model. Include the benefits of interacting with peers.
5. Instead of using a pre-test/post-test utilize only a post-test that would ask questions relating to how the participant felt before the challenge, along with questions about how they felt afterwards.
6. A process evaluation should be conducted upon completion of the challenge to determine strengths and weaknesses of the program to ensure it was implemented correctly.

7. Host a challenge kick-off get together on campus for participants to meet others taking part in the challenge. This can help connect students to others for the duration of the challenge.

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APPENDIX A: Certificate of IRB Completion and Approval



Bart Vanvoorhis

Mon 12/4/2017, 10:33 AM

Institutional Review Board; Kristy Pearson; Michele Pettit

Inbox

Flag for follow up. Start by Monday, December 04, 2017. Due by Monday, December 04, 2017.



Kristy Pearson 11.21.17....
3 MB

Download Save to OneDrive - University of Wisconsin-La Crosse

Hi Katie,

The attached protocol has been approved and is **exempt** from further review per **45CFR46, 46.101(b)(2)**.

Bart

—
Bart A. VanVoorhis, Coordinator
Institutional Review Board for the Protection of Human Subjects
Associate Professor of Psychology
341D GMH
608.785.6892
University of Wisconsin-La Crosse
La Crosse, WI 54601

Bart

APPENDIX B: Informed Consent Form

Informed Consent Form

Protocol Title: Implementation of a *30x30 Nature Challenge* Among Students Attending the University of Wisconsin-La Crosse

Principal Investigator:

Kristy Pearson

Master's of Science in Community Health Education Candidate

University of Wisconsin-La Crosse

La Crosse, WI 54601

Pearson.kristy@uwlax.edu

(630) 956-4430

Purpose & Procedures:

The goal of this project is to implement a *30x30 Nature Challenge* for undergraduate students attending the University of Wisconsin-La Crosse during the Spring 2018 semester. The project seeks to motivate and encourage students to spend 30 minutes a day outside for 30 days. The purpose of this challenge is to increase the amount of physical activity and connections made with the natural world. Students are asked to complete a confidential pre and post survey as part of this project. The questionnaire is comprised of 26 questions and will take approximately 10 minutes to complete. Participants have the option to pass on questions they do not wish to answer without consequence.

Results from this study may be disseminated through professional presentations and in a manual to describe how to conduct the challenge. A final report containing de-identified information and summative data will be utilized as a Capstone project to satisfy requirements for a Master's program.

Potential Risks & Discomforts:

Although the researcher has tried to avoid risks, there may be minimal risks associated with being outdoors in February, due to the cold. Though access to the population of interest requires collaboration between administration and the researcher, no identifiable information will be shared with the campus personnel. Regardless of whether or not students choose to participate in the program, it will not affect their grades. Participation in the *30x30 Nature Challenge* will present minimal risks.

Possible Benefits:

Through participating in this program, students may learn about the positive impacts of the natural world on their personal life. In addition, it is anticipated that the outcomes of this project will lead to additional research on the best ways to implement a *30x30 Nature Challenge* in the future.

Costs & Compensation:

There are no costs or associated with taking part in the program. Those who complete at least 20 days of the 30-day challenge will be entered into a random drawing to win health-related prizes (e.g., infusion water bottle, yoga mat, etc.) provided by the Wellness and Health Advocacy division of UWL.

Rights & Confidentiality:

Participants must be 18 years of age or older and students at UWL during the Spring 2018 semester to participate in this program. Data collected from this program will be aggregated to ensure participant anonymity. Electronic data will be collected by the researcher and kept securely for 3 years on a password-protected Qualtrics account.

Voluntary Participation:

Participation in the program is completely voluntary and students can cease participation from the program at any time or refuse to answer any question on the pre and post survey without consequences.

Questions regarding study procedures may be directed to the principal investigator, Kristy Pearson, pearson.kristy@uwlax.edu. Questions or concerns regarding the protection of human subjects may be addressed to the UW-La Crosse Institutional Review Board for the Protection of Human Subjects at (608) 785-8124 or irb@uwlax.edu.

FOR SURVEY: By completing this survey, I am giving voluntary informed consent for my participation in this program.

Participant: _____ Date: _____

Researcher: _____ Date: _____

APPENDIX C: Request to Market Email

Dear (Associate Dean/Dean),

My name is Kristy Pearson and I am a Master of Public Health Community Health Education Candidate. I am currently working on my Capstone project, the implementation of a *30x30 Nature Challenge*, here at UWL. The goal of this challenge is to get students outdoors for 30 minutes a day for 30 days. The *30x30 Nature Challenge* seeks to help students engage with the natural world that surrounds our campus. The *30x30 Nature Challenge* will begin on February 1, 2018 and end on March 2, 2018.

Studies have shown that getting a daily dose of nature can lead to increased mental and physical health, higher levels of happiness and work productivity, and a stronger sense of community (David Suzuki Foundation, 2015).

I am writing because I need assistance marketing the 30x30 Nature Challenge to students. Marketing is an essential part of this *30x30 Nature Challenge*. With your approval, I would like to be able to share the *30x30 Nature Challenge* survey/sign up link with you.

If you so choose, it would be greatly appreciated, if you would send that link to the students you work with.

Students who complete both the pre and post survey, and at least 20 days of the *30x30 Nature Challenge* will be entered into a drawing to win a prize.

Together, I believe we can encourage students to get their daily dose of nature. Please let me know if you would like to receive the link to the survey/sign up for the *30x30 Nature Challenge*.

Regards,

Kristy Pearson

Master of Community Health Education Candidate

University of Wisconsin-La Crosse

pearson.kristy@uwlax.edu

APPENDIX D: "Welcome" and Motivational Emails

Welcome to the 30x30 Nature Challenge!

We would love to have you participate in the UWL 30x30 Nature Challenge. The goal is to spend 30 minutes or more outside in nature for 30 days. This is a great opportunity to get outside and enjoy all of the benefits that the La Crosse area has to offer.

Over the last decade, researchers have documented what most of us know intuitively: nature is good for our health and well-being. Being regularly immersed in a natural setting, like a park, woodland, or forest can reduce stress and improve mood.

The UWL 30x30 Nature Challenge is about fostering a deeper connection with the natural world that surrounds us. This challenge is free for students to participate. The challenge will begin February 1, 2018 and end March 2, 2018.

What counts as time in nature?

Getting outside to local nature preserves, sledding hills, parks, wooded areas, and waterways.

Keeping track

Attached you will find a Nature Log to record the days and amount of time spent outdoors. The log will help you track your activities and reflect on the time you have spent outdoors.

Those who complete the post-survey at the end of the challenge and report spending 20 or more days outside for 30 minutes or longer will be entered into a drawing to win a prize.

Qualtrics Link

UWL 30x30 Nature Challenge (2nd email)

The first week of the challenge is underway! We hope you have had some time to interact with the natural world. Today, grab a group of friends, your roommate, or a classmate and head outside.

Take a bath in nature

Shinrin-Yoku is the Japanese practice of forest bathing. Spending time in a forest setting can help you sleep better, reduce stress levels, and increase feelings of vigor and liveliness.

Winter activities

Head over to Outdoor Connection and rent snow shoes or try cross country skis! Forest Hills Golf Course is a perfect place to ski around.

Grab some friends and build a snowman or hit the sledding hill at Hixon this week!

Make sure to watch for ice when running or walking during the winter. If you are concerned about slipping, pick up some winter running cleats at a nearby sporting store.

UWL 30x30 Nature Challenge (3rd email)

Today is a new day! We are in the third week of the 30x30 Nature Challenge, you are doing an excellent job getting out into nature.

This week throw on your snow boots and head over to Hixon for a hike in the fresh air. Winter is a great time to look for animal tracks in the snow.

(Insert Campus events)

Green your exercise routine

Outdoor exercise makes us feel better. Compared with running on an indoor treadmill, running through a forest improves our mood and lowers fatigue and tension. The most valuable exercise environment in terms of elevating our mood and self-esteem is a combination of green and water. Why not take a walk or bike ride in nature this evening?

UWL 30x30 Nature Challenge (4th email)

Keep up the great work! This is the last week of the UWL 30x30 Nature Challenge. Take some time to get outside during this last week. Grab a friend or two and head over to Myrick Park, you may spot an eagle or two.

Get a better night's sleep

Humans evolved to respond to the daily rhythms of the sun. Natural light enhances our mental performance and darkness increases our desire to sleep. Light bulbs and electronic screens adversely affect melatonin production, a hormone that helps us sleep. Power down tonight, do some stargazing, and get a good night's sleep.

APPENDIX E: *30x30 Nature Challenge* Qualtrics Survey

30x30 Nature Challenge Survey

Please provide your email address: _____

After email addresses are recorded into a password protected database, surveys will be coded using numbers. Your email will be used to send out information regarding the *30x30 Nature Challenge*.

What is your age?

Under 18

18-19

20-21

22-23

What is your gender? _____

Are you of Hispanic, Latino, or Spanish origin?

Yes

No

How would you describe yourself?

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Choose not to respond

What is your year in school?

Freshman

Sophomore

Junior

Senior

Super Senior

Graduate Student

Where do you reside?

On-campus

Off-campus

With parents

Where do you spend the most time exercising?

The REC

YMCA

Outside

Other _____

Instructions: For each of the following, please rate the extent to which you agree with each statement, using the scale from 1 to 5 as shown below. Please respond as you really feel, rather than how you think “most people” feel.

My ideal vacation spot would be a remote, wilderness area.

1	2	3	4	5
Disagree strongly	Disagree a little	Neither Agree nor disagree	Agree a little	Agree strongly

I always think about how my actions affect the environment.

1	2	3	4	5
Disagree strongly	Disagree a little	Neither Agree nor disagree	Agree a little	Agree strongly

My connection to nature and the environment is a part of my spirituality.

1	2	3	4	5
Disagree strongly	Disagree a little	Neither Agree nor disagree	Agree a little	Agree strongly

I take notice of wildlife wherever I go.

1	2	3	4	5
Disagree strongly	Disagree a little	Neither Agree nor disagree	Agree a little	Agree strongly

My relationship to nature is an important part of who I am.

1	2	3	4	5
Disagree strongly	Disagree a little	Neither Agree nor disagree	Agree a little	Agree strongly

I feel very connected to all living things and the earth.

1	2	3	4	5
Disagree strongly	Disagree a little	Neither Agree nor disagree	Agree a little	Agree strongly

Instructions: For each of the following, please rate the extent to which you agree with each statement, using the scale from 1 to 7 as shown below. Please respond as you really feel, rather than how you think “most people” feel.

I feel like I have a lot in common with other students here at UWL.

1	2	3	4	5	6	7
Disagree strongly	Disagree	Somewhat Disagree	Neither Agree nor disagree	Somewhat agree	Agree	Agree strongly

I feel a strong sense of ‘connectedness’ with UWL students. Connectedness meaning a sense of belonging with others.

1	2	3	4	5	6	7
Disagree strongly	Disagree	Somewhat Disagree	Neither Agree nor disagree	Somewhat agree	Agree	Agree strongly

I have developed close interpersonal relationships here at UWL.

1	2	3	4	5	6	7
Disagree strongly	Disagree	Somewhat Disagree	Neither Agree nor disagree	Somewhat agree	Agree	Agree strongly

When I think about my overall social life here, (e.g., friendships, extracurricular activities), I feel good.

1	2	3	4	5	6	7
Disagree strongly	Disagree	Somewhat Disagree	Neither Agree nor disagree	Somewhat agree	Agree	Agree strongly

Instructions: Think about the time you spend doing sports, fitness, and recreational activities. Answer the following to the best of your memory.

Do you do any moderate-intensity sports, fitness or recreational (leisure) activities that cause a small increase in breathing or heart rate such as brisk walking, [cycling, swimming, volleyball] for at least 10 minutes continuously?

1. Yes
2. No

In a typical week, on how many days do you do moderate intensity sports (that cause a small increase in breathing or heart rate), fitness or recreational (leisure) activities? Please answer 0-7.

Number of days _____

In the last month, on how many days did you spend 30 minutes or more outside?

Number of days _____

How much time do you spend doing moderate-intensity sports, fitness or recreational (leisure) activities on a typical day?

Hours _____ Minutes _____

The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent sitting at a desk, sitting with friends, traveling in car, bus, train, reading, playing cards or watching television, but **do not** include time spent sleeping.

How much time do you usually spend sitting or reclining on a typical day?

Hours _____ Minutes _____

Please list some positive aspects of the *30x30 Nature Challenge*.

Please list what could be improved on in the *30x30 Nature Challenge*.

APPENDIX F: Nature Challenge Log

UWL 30x30 Nature Challenge Log

Date	Activity	Reflection: What stood out to you most about your natural surrounding?	Time Spent Outside
February 1			