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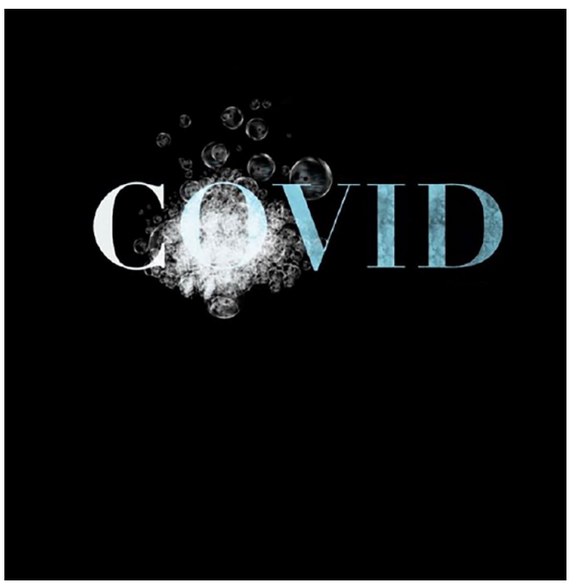
Editor's Note

Scholars Day at SUNY Brockport was held online for two years during the Covid pandemic (2020 and 2021). The online format was challenging for students as well as conference organizers. Courses were forced to pivot to online learning almost overnight. Masks, weekly Covid testing and 6' social distancing were the norm for those on campus. The online version of Scholars Day included a mix of posters, videos and more. This 2021 special issue of *The Spectrum* includes a small sample of student posters published to recognize the quality and commitment to student scholarly and creative activity that continued throughout this period.

Additionally, during the Summer of 2021, the DigitalCommons repository was migrated to a new platform, SUNY SOAR (SUNY Open Access Repository). Brockport's hosted journals like *The Spectrum* have a new look emphasizing individual author contributions that make articles more discoverable at the individual item level and include improved metadata without the appearance of a traditional journal. The change represents an opportunity to consider new forms of scholarly communication and dissemination. We hope you find it engaging and welcome your feedback.



Cover Image: Takara Brundidge

Editors

WHAT ARE STATED GAPS IN INJURY PREVENTION AND TREATMENT AVAILABLE ON COLLEGE CAMPUSES FOR DANCERS?

Statistics of Injury in Dance

The most commonly injured area for dancers is the lower extremities, especially in Western concert dance forms like ballet, modern, and contemporary. Some of the more common injuries include knee cartilage injuries, patellar tendon injuries, anterior hip pain, anterior cruciate ligament injuries, and ankle sprains (Junck et al., 2017). Overuse injuries are typical of dancers due to their extended rehearsal and class schedules and lack of recovery periods.

Injuries by body region	Foot and ankle	61 (29)
	Knee	90 (43)
	Hip	39 (19)
	Shoulder	20 (10)

This data table shows the number of people who sustained an injury to a certain area of the body from a study performed by Emily Junck and associates (Junck et al., 2017).

Contributions to Injury Prevalence

Cultural

Unlike most traditional athletes, dancers aren't given an off season in which they can take time away from their training and recover. Fewer recovery periods can result in fatigue, which can be a consistent risk factor for injuries. Students at universities studying dance are especially at risk for becoming "burnt out" because on top of their rehearsal and dance class requirements, they are also enrolled in academic classes that may consume any rest time they might have after a day of dancing (Dirickson, 2017). This burnout and mental fatigue can lead to injury.

Contributions to Injury Prevalence

Psychosocial

It is common that dancers will injure themselves while trying to achieve the aesthetic nature of dance. For example, many dancers might force their turnout, or hip external rotation, in ballet, resulting in injuries to the knees, ankles, or low back. In a study performed in the Netherlands in 2008 at the Medical Center for Dancers and Musicians, the Brief Symptom Inventory (BSI), a screening tool used to identify psychological distress, was used to discover that 60.1% of the dancers met the criteria for a referral to a clinical psychologist or psychiatrist. 46.6% of dancers demonstrated "above average" distress and 19.6% of dancers demonstrated "high" or "very high" distress levels compared to the general population (Mary Elizabeth Air, 2013). Dancers tend to present with perfectionist tendencies. The unattainable goals set by perfectionists only result in disappointment and feelings of inferiority. The aesthetic value of dance causes dancers to constantly judge their appearance and to have their appearance evaluated by others, such as teachers, choreographers, and audience members. This can lead to the development of eating disorders or excessive exercise in order to maintain a certain weight and body image. All of these behaviors and tendencies can eventually lead to injury (*Resource Paper: Perfectionism - International Association for Dance Medicine & Science*, n.d.).

Treatment Availability

In an article written by Jatin Ambegaonkar and Shane Caswell, they state that "despite the physical demands and rigor involved with dance, relatively little attention has been devoted to the unique health care needs of dancers" (J. Ambegaonkar & Caswell, 2009). In a study performed by Ambegaonkar and Caswell, emails were sent to the administrators of 175 institutions with dance programs to complete a survey about their current availability of medical care on campus and what their thoughts were on the need of medical care for their students. While response levels were low in this study, the researchers found that few collegiate dance programs offer access to medical services offered to intercollegiate athletics or externally contracted medical providers. While the dance backgrounds and knowledge of dance is unknown about these individuals treating the dancers in this study, research suggests that access to performing arts medicine is severely limited in collegiate and professional dance(J. Ambegaonkar & Caswell, 2009).

Language Barriers

According to a study performed by Mary Elizabeth Air, dancers tend to cite misunderstandings by physicians as their primary reason for not seeking immediate medical care after an injury (Mary Elizabeth Air, 2013). "80% of university dancers surveyed reported that they felt their health care providers did not understand dancers and 43% indicated that their health care providers gave unhelpful advice," according to a study performed by Russell and Wang (JA Russell & TJ Wang, 2012).

Recommendations

Participation Alternatives

There are many ways that dance students can still participate or improve their technique while being injured. An article by the International Association for Dance Medicine and Science (IADMS) outlines three evidence-based options for students to continue their dance education while being injured. The first way is participating while modifying movements in class. The second option is considering alternative forms of participation, to include written note taking, mental practice, and assisting the teacher or choreographer. The last method centers around finding useful alternatives to class attendance and participation. Working on conditioning and somatic practices are ways that a dancer can continue to work on their technique and improve as a dancer while healing from an injury (Weiss, n.d.). Options such as Pilates are useful alternatives to class participation. Pilates is often used as a cross training method for dancers because it focuses on developing important muscles dancers use frequently and has a history of being popular among dance communities.

Recommendations

Dance Medicine Facilities

By creating resources that dancers can utilize and a comfortable environment where dancers can get help to treat or prevent an injury, a critical gap can be closed and could result in healthier dancers. An example of a university that has created a dance medicine facility within their dance department is Brigham Young University (BYU). This facility is complete with mirrors, barres, an ice machine, resistance machines, a treadmill, a bike, a stretch station machine, and other equipment that would be useful for the staff to assess, treat, and rehabilitate any of the dancers' injuries. The facility has three certified, full-time athletic trainers along with athletic training students who work in the facility to assist as well as further their clinical education. Outside of the facility, the athletic trainers attend dance team competitions to ensure the well-being of the students. They supervise conditioning and cross-training for dance students, as well as develop individualized conditioning programs (Kaiser, 2002). This model is significant because it represents potential for other programs to invest in and build similar facilities.

This picture shows part of BYU's dance medicine facility. Equipment shown include Pilates reformers, ellipticals, and a rowing machine, all of which can help dancers strengthen their bodies to prevent or rehabilitate and injury (Kaiser, 2002).

Recommendations

Closing the Language Barrier

In a study at Stockton University, 20 students took part in an interdisciplinary educational experience, of which 10 students were dance majors and 10 were graduate doctor of physical therapy students. The purpose of this experience was to teach the dancers more about injury prevention and the physical therapy students more about the nature of dance related injuries. Some of the parts of this experience included physical assessments of the dancers, including the use of the Functional Movement Screen (FMS), ballet classes in which the dancers participated in class and the physical therapy students observed, and Pilates classes in which all students participated. If more experiences like this were made available and more dancers and medical professionals were willing to learn from one another, this interdisciplinary experience could be a model for a solution to the gap in medical assistance availability to the dance community (Lim et al., 2018).

TABLE 2 Common Terminology

Common Dance Terminology	Common Physical Therapy Terminology
Plié	Manual muscle testing
Relevé	Gait analysis
Développé	Myotome testing/dermatome testing
Sauté	Flexion/extension/abduction/adduction
Pirouette	Palpate
Battement	

This table describes terminology that is specific to dance and terminology that may be used by a physical therapist. The dance terms are French and typical of ballet, while the physical therapy terms are more scientific. This makes it clear why it may be confusing for the two populations to understand each other (Lim et al., 2018).

Recommendations

Screenings

Screenings are important in helping dancers maintain a healthy physical and mental state. As an aggregate of data, they can be used to gain information about a dancer in order to prevent injuries, improve performance quality and create training programs to further aid in the success of a dancer. Individually, screenings establish baseline data for medical professionals to identify areas of potential weakness and provide evidence-based programming to help prevent injury incidence. Another benefit of screenings is introducing dancers to a medical professional that they can get to know and who can get to know them. This gives them a familiar resource to reach out to if they ever are struggling physically or mentally with their dance training (Karen Potter et al., 2008).

SUNY BROCKPORT 1835

Insight of the Deepwater Sculpin Reproduction in Lake Ontario

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INTRODUCTION

- Deepwater sculpin *Myoxecephalus thompsonii*, abundant in Lake Ontario until the 1940s, were thought to be extirpated until the late 1990s (Lantry *et al.* 2007, Figure 1). Since then, they appear to have recovered as their population increased 59% per year from 1996 to 2016 (Weidel et al. 2017).
- Negative interactions with alewife and slimy sculpin were implicated in their decline in Lake Michigan (Madenjian *et al.* 2002). Their recovery has been associated with declining alewife and rainbow smelt abundance, as well as reduced nutrient inputs in Lake Ontario (Weidel et al. 2017).
- Juvenile deepwater sculpin are bottom dwellers and are preyed upon by burbot and lake trout, helping to cycle energy from benthic zones to surface waters through their diet of invertebrates such as *Diporeia* and *Mysis* (Brandt 1986).
- Spawning of deepwater sculpin takes place in the winter and the peak hatching period is in March (Nash and Geffen 1991); however, little is known about their reproduction.
- Their size at first maturation in Lake Ontario is 116 and 110 mm for females and males, respectively (Weidel et al. 2017). Females gonadosomatic index (GSI) reached up to 25%, whereas males GSI were up to 3.3% (Weidel et al. 2017).

OBJECTIVES

- Determine health of deepwater sculpin using their condition factor (K).
- Evaluate deepwater sculpin reproductive potential using gonadosomatic index (GSI) and batch fecundity.
- Assess deepwater sculpin oocyte development to test the hypothesis that deepwater sculpin undergo multiple spawning events.

Figure 1: Deepwater sculpin

Figure 2: Oocyte diameter measurement.

MATERIALS AND METHODS

- Deepwater sculpin were collected from Lake Ontario by NYSDEC and USGS in Fall 2018 and 2019 using bottom trawls.
- Fish were weighed (W in g) and measured for total length (L in cm).
- Gonad was excised and weighed (W_g in g). Ovaries were subsampled for batch fecundity estimate.
- K was calculated as $(Wx100)/L^3$ and GSI as $(W_g x100)/W$.
- Absolute batch fecundity was determined by counting the total number of the largest oocytes present in the ovary subsample and the number counted raised to the whole ovary weight.
- Relative batch fecundity was calculated as the absolute batch fecundity divided by the fish weight.
- Oocyte development was accessed using histological procedures. Gonads were fixed in formalin or Bouin's solution, embedded in paraplast, cut at 6 µm sections, and stained with Mayer's hematoxylin and eosin according to Rinchard and Kestemont (1996).
- The diameter of twenty mature oocytes for each mature female was measured under a binocular microscope using Celestron Imaging software (Figure 2).

RESULTS AND DISCUSSION

- The average condition factor (K) was 1.09 and 1.08 for females and males, respectively.
- Total length and body weight relationship is presented in Figure 3. Growth of deepwater sculpin was positively allometric (b > 3) on pooled data.
- GSI reached 1.3 ± 0.7% and 7.9 ± 6.2% in males and females, respectively. Female ovaries were in different stages of maturity, confirming a prolonged spawning period.

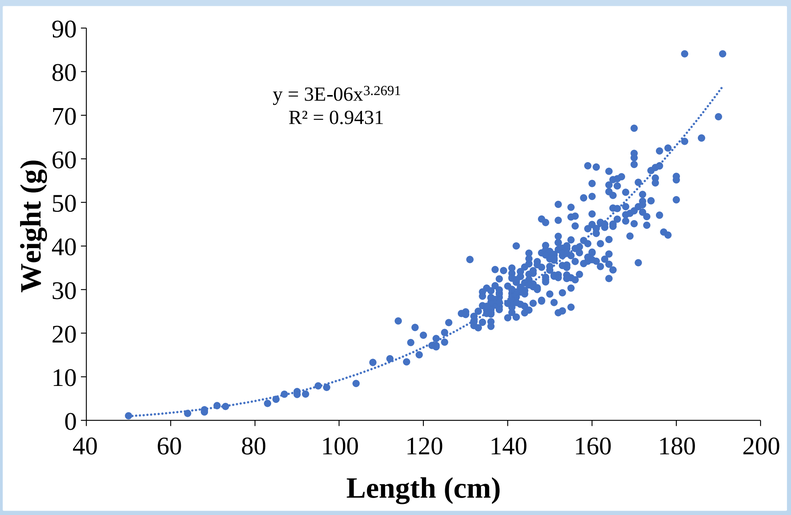

Figure 3. Length / weight relationship of deepwater sculpin collected in Lake Ontario in Fall 2018 and 2019 (n = 167).

- Preliminary histological data revealed the presence of oocytes at different stage of maturity inside the ovary indicating that deepwater sculpin are able to spawn multiple times during its spawning season (Figure 4).
- Absolute batch fecundity averaged 723 ± 196 and 840 ± 268 eggs in 2018 (n = 30) and 2019 (n = 22) and relative batch fecundity ranged from 9 to 27 eggs/g of fish.

Figure 4. Cross sectional view of stained deepwater ovary. Maturity stages also shown. Previtellogenic (pr), endogenous vitellogenesis (ed), exogenous vitellogenesis (ex).

- The diameter of the largest oocytes averaged 1.30 ± 0.23 mm and 1.37 ± 0.20 mm in Fall 2018 and 2019, respectively (Figure 5).
- These results provide new insights about the reproduction of deepwater sculpin in Lake Ontario.

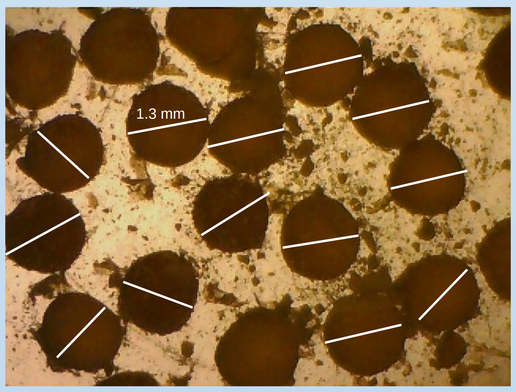

Figure 5. Measurement of the largest oocytes.

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When We Speak Up: Factors That Predict Willingness to Confront Expressions of Racial Prejudice

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Tyra Andrus & Aaliyah Stroman-Surita
Scholar's Day 2021

Introduction

There are two distinct prejudice types: blatant (explicit/obvious) and subtle (ambiguous). Previous research has demonstrated that confrontation of prejudice can be a successful prejudice reduction strategy but bystanders may only confront clear instances of bias. The current research examines the impact of prejudice type on both prejudice recognition and willingness to confront the expresser.

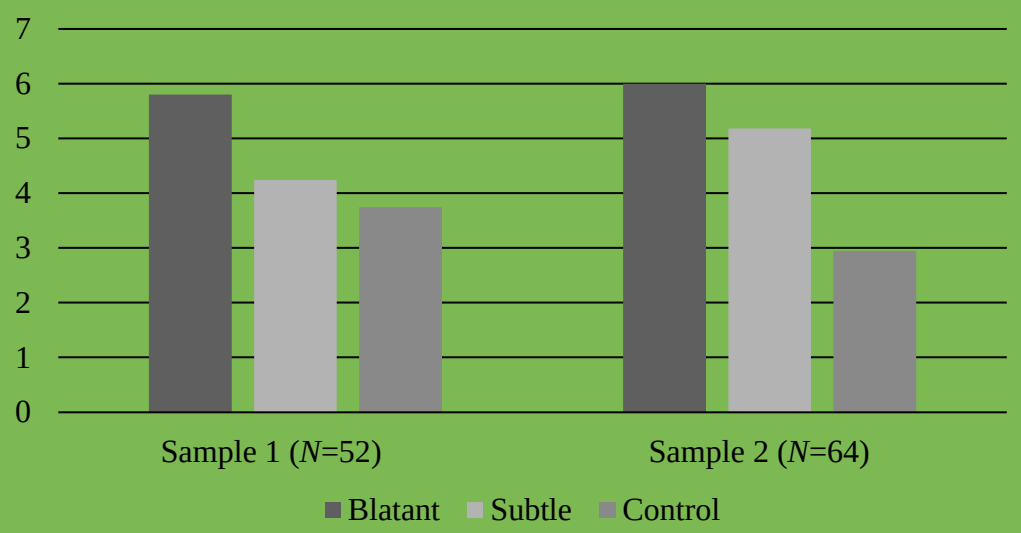
Method

Participants: Participants were pulled from two online samples, including a college student sample (*N*=52; Sample 1) and a community sample (*N*=64; Sample 2).
Instruments: Manipulation of prejudice
Perceived Prejudice
Willingness to Confront Expresser
Political Affiliation and Trump Support
Procedure: Participants read a fictional scenario about a job hiring situation in which they were exposed to subtle or blatant racial prejudice or no prejudice (control). Then prejudice detection and willingness to confront the expresser were assessed.

Discussion

Findings show that discernible bias may go unchecked when expressed in a so-called subtle manner.

Participants exposed to **blatant** racism were **more willing** to confront the expresser than those exposed to subtle racism or the control condition



Results

Figure 1: Perceived manager rationale for application rejection for Sample 1 (*N*=52)

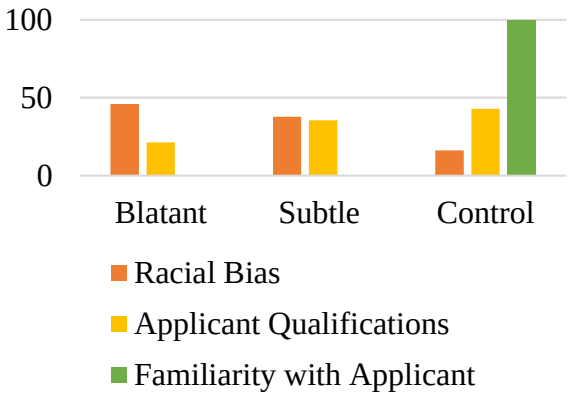
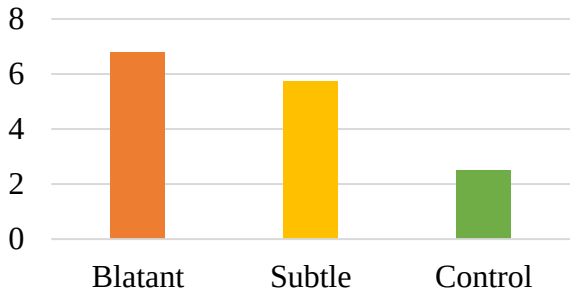


Figure 2: Perceived manager bias for Sample 2 (*N*=64)



Growth and Seed Formation of *Brachypodium sylvaticum* in Genesee County, NY

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Introduction:
- Slender false brome *(Brachypodium sylvaticum)* is an invasive grass that spreads rapidly by seed.
- Information is lacking on seed formation and plant growth requirements (Holmes *et al.* 2010).

Objectives:
- Understand the timing of seed formation, which has implications for future management practice
- Determine which natural factors influence plant growth

Hypothesis:
- We think that *B. sylvaticum* will produce seed heads first in areas of moist, dense canopy cover.

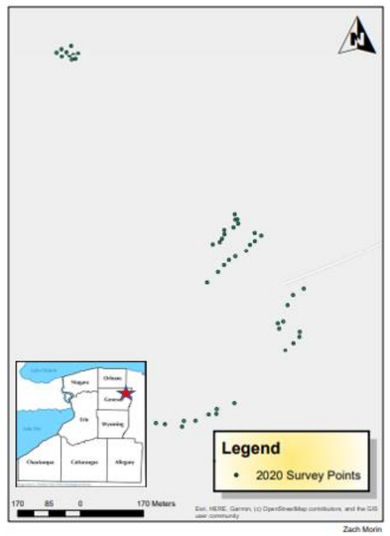

Figure 1. Map of 2020 survey points in Genesee County, NY

Methods:
- In 2020, we randomly selected 50 individual *B. sylvaticum* plants in Genesee County, NY.
- Plants were spaced a minimum of 10 m apart to ensure there was no influence with other plants in study.
- We developed a scale to categorize inflorescence based on visual observations (Table 1).
- Each week, we categorized seed formation based on the scale
- Each week, we measured plant height from the base of the plant to the tip of the longest leaf.
- We collected canopy cover, soil moisture, and soil pH at each plant to determine if these factors influence growth.
  - We used a densiometer to determine canopy cover above each plant.
  - We used a soil meter to gather pH and soil moisture at the base of each plant.
- We ran a multiple linear regression on canopy cover, soil moisture, and soil pH.
- Soil pH was converted to [H+].

Table 1. Scale of inflorescence used to categorize *B. sylvaticum* seed heads.

Scale	Description
S1	No visible inflorescence
S2	Inflorescence present, hidden by leaf sheath
S3	Inflorescence present, extended beyond leaf sheath, not open, single tapering point
S4	Beginning to open
S5	Completely open and drooping

Results:
- Canopy cover showed a significant relationship with *B. sylvaticum* height (P=0.00038, R^2=0.28) (Figure 2).
- There was no significant relationship in soil moisture (P=0.43, R^2=0.06) or soil pH (P=0.94, R^2=0.008).
  - Soil moisture ranged from 0% - 70% across the study sites ($\bar{x}$ = 35%)
  - Soil [H+] ranged 0.000001-0.000032 across the study sites.
- Seed head awns did not develop until Week 5 (July 20- 24).
  - During that week, most plants were scaled 3-4 on our inflorescence scale.

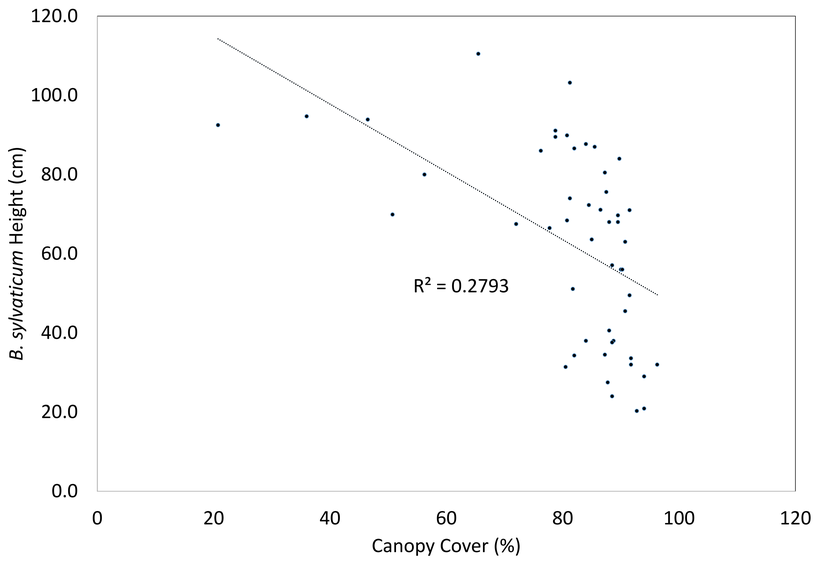

Figure 2. There is a moderate significant relationship (P=0.00038, R^2=0.28) between canopy cover and *B. sylvaticum* height.

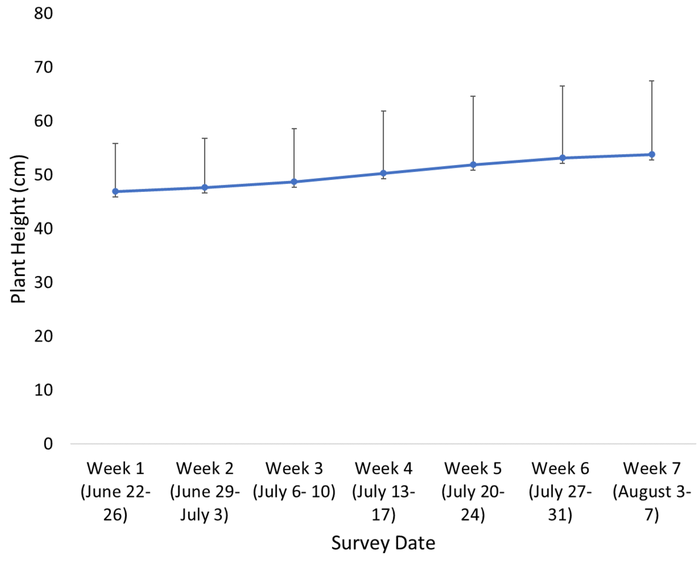

Figure 3. The average plant height of the 50 *B. sylvaticum* plants surveyed from June 22 until August 7. During Weeks 1 and 2, seeds were not present on the plants (S1). During Weeks 3 and 4, the plants exhibited various stages of seed head development (S1- S4). By Week 5*, seed heads had developed, and awns were clearly visible (S3- S4) on all plants. By Week 7, all plants had fully mature seeds (S4- S5).

Figure 4. 4A) 1- No visible inflorescence, 4B) 2- inflorescence hidden by leaf sheath, 4C) 3-Inflorescence closed; single tapering point, 4D) 4- Beginning to open, barbed awns visible 4E) 5- inflorescence completely open and drooping.

Discussion:
- A study by Holmes *et al*. (2010) found that only 9% of *B. sylvaticum* grew in open canopy area.
  - Similarly, our study found that *B. sylvaticum* was more abundant in low-light areas; however, it grew taller in high-light areas
- *B. sylvaticum* is found to grow in limestone and basic soils (Davies and Long 1991).
  - Conversely, the plants in our study were growing in weakly acidic to neutral soils, which suggests that this plant can grow in a variety of soil types.
- Holmes *et al.* (2010) found *B. sylvaticum* growing in a wide variety of soil moisture conditions but found that it prefers moist soils and avoids excessively dry soils
  - Plants in our study were also growing in a variety of soil conditions.
- Little is known about the timing of seed formation, which is important for management.
  - Management practices should occur before the plant forms seeds to prevent the spread.
  - Our study shows that management should occur prior to July 20 in Western NY to prevent seed formation and plant spread.

Literature Cited:
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Acknowledgments:
I would like to thank Andie Graham for assistance of gathering materials, providing insight to ideal locations to tag individual plants. Also, showing me how to properly use equipment, and assistance for any information that I needed during data collection and analysis. I would also like to thank Luka Koziol and Max Mahoney in assistance for measuring and spotting plants in each location visit.

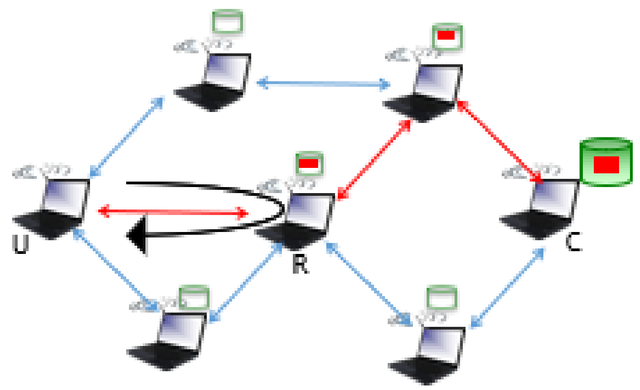
Department of Computing Sciences
SUNY BROCKPORT

Evaluating the Performance of Caching Strategies in Diverse Information-centric Network Settings

Rhonda-Lee T. Forbes & Dr. Adita Kulkarni

Information-Centric Networks

- Information-centric networks (ICN) is a future Internet architecture that rearchitects the current host-centric Internet to a content-centric one.
- In-network caching allows the content requests to be served from the intermediate nodes rather than the origin servers, thus reducing the content access time and the load on servers.



- Our goal is to identify which caching policies performs best in different ICN settings.

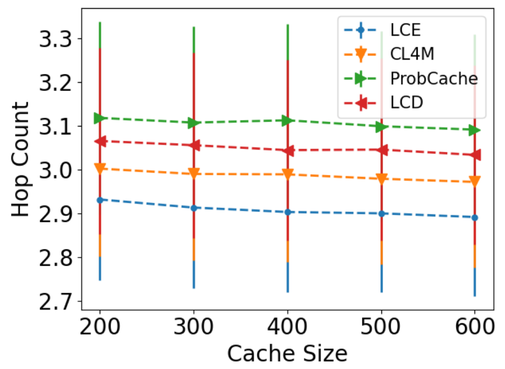
Caching Strategies

- LCE - stores a copy of the content at every visited cache.
- LCD - stores a copy of the content at a cache one hop down towards the requester in each cache hit.
- CL4M - stores a copy of the content in the caches with the maximum betweenness centrality to generate the highest probability of a cache hit.
- ProbCache - uses a probabilistic method to cache content.

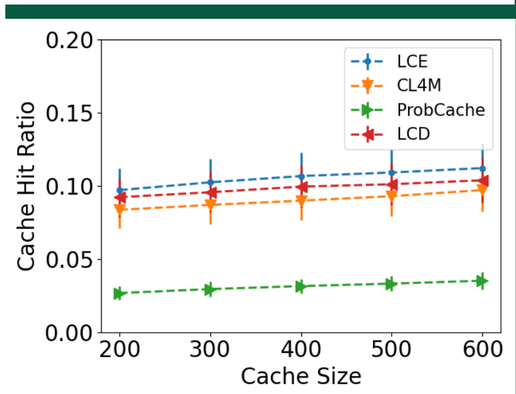
Experimental Setup

- Icarus is a Python-based discrete-event simulator for evaluating the performance of Information Centric Networks (ICN).
- Static Networks: wide, geant, and garr.
- Grid Mobility Model: 7 X 7 grid with 49 nodes.
- Random Waypoint Mobility Model: 60 nodes uniformly distributed in 1000 X 1000 area simulation.
- Stockholm Pedestrian Trace: 300,000 location entries of 587 pedestrians in an area of 5872 sq. m.
- Rome Taxi Cab Trace: 300,000 location entries comprising of 162 taxis.
- Seattle Bus Trace: 300,000 location entries comprising of 1078 buses.

Prediction Results



- This graph represents the hop count of cache eviction policy LRU (Least-Recently Used) for topology Pedestrian.
  - The best performing strategy is LCE (Leave Copy Everywhere) with the lowest hop count.
  - LCE brings in more content within the network leading to more hits closer to the user, resulting in lower hop count.



- This graph represent the cache hit ratio of cache eviction policy LRU (Least-Recently Used) for topology Pedestrian.
  - Best performing strategy is LCE (Leave Copy Everywhere) with the highest cache hit ratio.
  - For most of the other networks and cache eviction policies there were similar results of LCE performing the best out of the other cache insertion policies.

Eco-Anxiety and Mental Health in 2020-2021: The Effects of the COVID-19 Pandemic, The U.S. 2020 Presidential Election, Recent Social Justice Uprisings, and Climate Change on Mental Health

A Research Study by Sabrina Smith, B.S. and Amanda Gaboriault, LMFT; Faculty Advisor Dr. Robert Dobmeier, PhD
Counselor Education Program
The Graduate School at The State University of New York at Brockport; Rochester Regional Health-Evelyn Brandon Health Center

Topic/Abstract

Eco-anxiety can be described as anxiety that arises from events or changes that occur within one's environment. Within the past year, the United States has experienced a significant amount of change within its environment that will undoubtedly have significant effects on the mental health of individuals of all walks of life and the mental health profession as a whole. This study examined the effects of eco-anxiety surrounding relevant current events that have occurred in 2020-2021 including the COVID-19 Pandemic, Social Violence, United States government affairs and climate change on the mental health of the clients that are currently seeking mental health treatment. This study plans to assess mental health therapists at Evelyn Brandon Health Center to see if the themes of the COVID-19 Pandemic, Social Violence, United States government affairs and climate change are or have been present in sessions with current clients. This research will be important in helping plan for future public health crises, adapting to a changing mental health field, and implementing evidence-based practices for eco-anxiety.

Methodology

The research design for this study utilized a descriptive design that focused on analyzing quantitative data collected from EBHC mental health (MH) therapists (and interns) about their clients. The quantitative data collected from this study was used to assess how participating EBMHC clients are currently experiencing eco-anxiety surrounding the COVID19 Pandemic, Social Violence, United States government affairs and climate change. Data was collected from EBHC MH therapists using a survey/grid that asked therapists to recall if any of their clients are citing issues related to the research topics during the client's episode of care. Surveys did not collect any identifying information (from either client or therapist; see survey for details), assuring client and therapist confidentiality. Data was collected from 7 therapists and interns and included data from 446 currently enrolled clients overall. Data collected from this research was analyzed using descriptive statistical analyses.

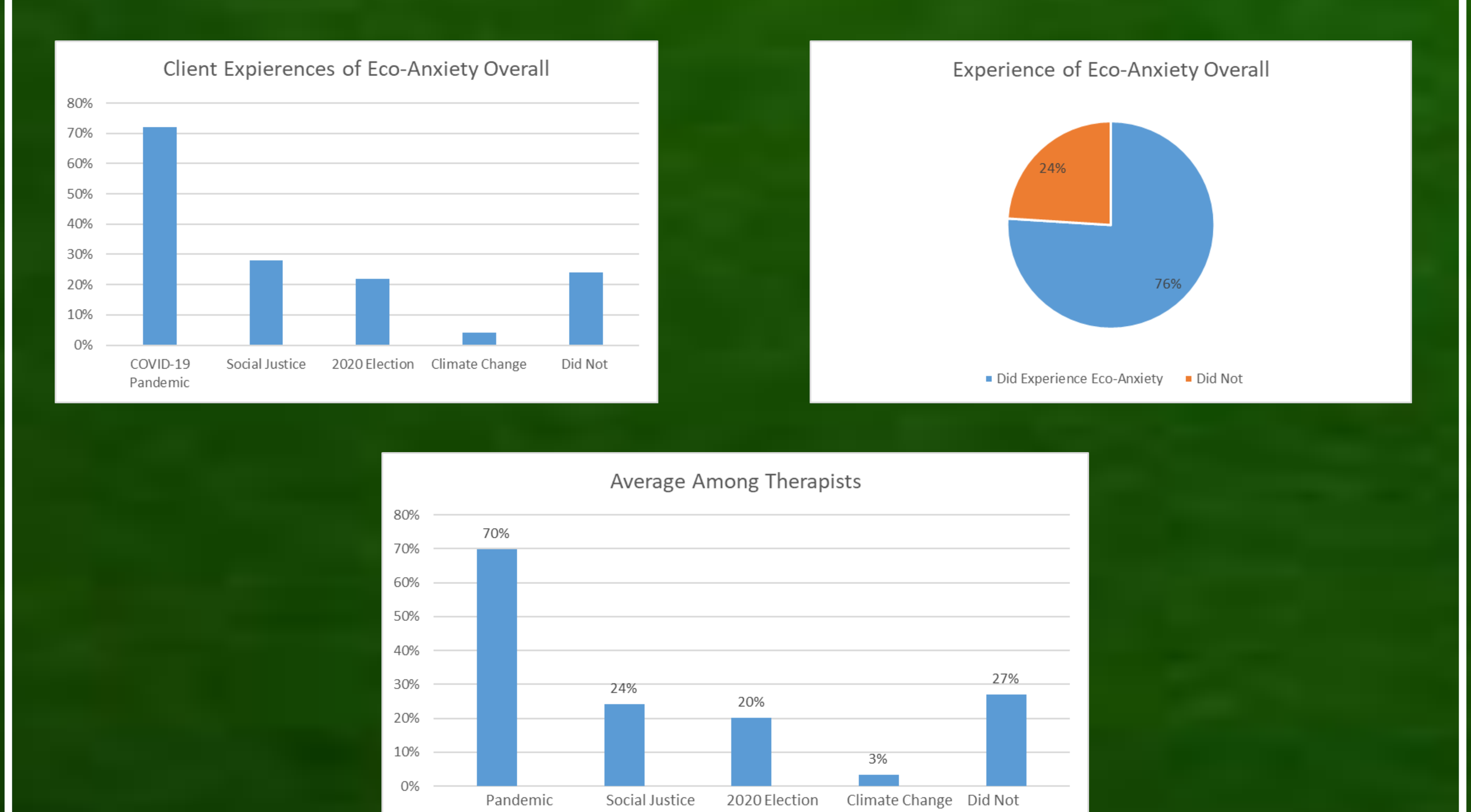
Client	COVID-19 Pandemic	Social Justice	2020 Election	Climate Change
1	x			
2	x			
3	x			
4	x			
5	x	x	x	
6	x			
7	x			
8				
9				
10	x		x	
11	x			
12				
13	x			
14				
15	x			

Caption: Example of unidentifiable data collected from a therapist.

Results

The results of this research showed that overall, 76% of clients had experienced some form of eco-anxiety, and 24% did not report any adverse mental health symptoms associated with eco-anxiety. Specifically, overall 72% of clients reported eco-anxiety about the COVID-19 pandemic, 28% of clients reported eco-anxiety about the recent social justice uprisings, 22% of clients reported eco-anxiety about the 2020 election, 4% of clients reported eco-anxiety about climate change, and 24% of clients did not report symptoms of eco-anxiety.

When looking at averages among individual therapists, 70% of clients reported eco-anxiety about the COVID-19 pandemic, 24% of clients reported eco-anxiety about the recent social justice uprisings, 20% of clients reported eco-anxiety about the 2020 election, 3% of clients reported eco-anxiety about climate change, and 27% of clients did not report symptoms of eco-anxiety.



Caption: Bar and Pie graphs showing the results of the study.

Scope/Research Question

The purpose of this study was to examine how eco-anxiety surrounding the COVID19 Pandemic, Social Violence, United States government affairs and climate change effect the mental health of the clients that are currently seeking mental health treatment from Evelyn Brandon Mental Health Center (EBMHC). Eco-anxiety is defined as anxiety that arises due and in response to events that are occurring in a person's immediate environment. The main question of interest for this research study is: How is eco -anxiety surrounding the COVID Pandemic, recent social-justice movements, United States Government affairs, and/or climate change effecting mental health of clients that seek services from Evelyn Brandon Mental Health Clinic?
The primary objectives of this study were:

1. Whether and how much EBMHC clients are currently affected by eco-anxiety the COVID19 Pandemic, Social Violence, United States government affairs, and climate change

2. Whether clients at EBMH are seeking mental health services or some other form of help for issues related to eco-anxiety surrounding COVID Pandemic, recent social justice movements, United States Government Affairs, and/or climate change.

Conclusion/Discussion

The results of this research showed that a significant amount of clients at Evelyn Brandon Health Center experienced symptoms of eco-anxiety within the past year, with the COVID-19 pandemic being the leading eco-anxiety theme expressed during therapy. Although clients did report eco-anxiety about the other themes measured (the social justice uprisings, the 2020 presidential election, and climate change), significantly less clients reported symptoms of eco-anxiety surrounding the recent social justice uprisings and the 2020 election, and even less reported eco-anxiety surrounding climate change.

One main conclusion that can be drawn from this research is that eco-anxiety is a mental health issue that is relevant and regularly experienced by individuals in the Rochester, NY area. Another conclusion from this study is that the COVID-19 pandemic has had and continues to have a significant impact on the mental health of clients at Evelyn Brandon; This can be generalized to say that the pandemic effected the mental health of many individuals in the Rochester, NY area. Although not as significant, the other three measured themes (the social justice uprisings, the 2020 presidential election, and climate change) also affected clients at Evelyn Brandon Health Center, which if anything, should be at least noted.

Implications

Treating clients that present with eco-anxiety is sure to become a larger part of the mental health literature in the future. Currently, there is some literature in existence regarding evidence-based practice for eco-anxiety and symptoms similar in presentation to eco-anxiety (Albertson, Gadarian, & Cramer , 2018; Lee & Lee, 2018; Park & Yang, 2017; Staggers-Hakim, 2016).

When talking about mental health intervention for eco-anxiety related to illness and disaster, Lee and Lee (2018) found that higher understanding of a disaster leads to reduced reporting of depression and anxiety symptoms. Moreover, a similar study by Park and Yang (2017) found disaster-preparedness associated with higher level of education and disaster confidence. Lee and Lee (2018) also found through their disaster research that the kinds of information given out by the media, particularly the kids of details shared about a disaster and what can be done about the situation, effect the levels of anxiety that arise in disaster-like situations (i.e. the COVID-19 pandemic). These are very important things to consider when formulating successful interventions for those experiencing eco-anxiety Surrounding the COIVD-19 pandemic.

The literature that exists regarding eco-anxiety social justice movements, police brutality, and social violence poses some implications for the mental health field as well. a. Staggers-Hakim (2016) found that Black boys found it cathartic to talk about community violence and national police killings, and the boys also indicated the desire to continue conversations in the community. Staggers-Hakim (2016) also found that acknowledgement of the trauma that Blacks experience, especially related to police killing, was significant for alleviating negative mental health symptoms. This is valuable information for mental health professionals seeking effectiveness in providing interventions to marginalized populations and those experiencing eco-anxiety related to police brutality and systemic racism.

Some of the existing literature on eco-anxiety and politics has a slightly different take when it comes to implications, but still an important one: Albertson, Gadarian, & Cramer (2018) found that eco-anxiety surrounding politics can actually motivate individuals to engage in more community-based behaviors such as community advocacy and an increase in voting behaviors. This may be important with clients that are experiencing eco-anxiety about politics and have issues with motivation.

As with most topics being researched today, continuing research will allow us to better understand the phenomenon of eco-anxiety as well as better-formulate and evaluate interventions tailored at addressing and treating eco-anxiety.

Literature

Eco-Anxiety from Illness and Disease

There have been many studies that have linked feelings of anxiety to illness and disease (Bults et al., 2011; Lau, 2003; Lee and Lee, 2018; Leung et al., 2005; Xu and Peng, 2015; Winter, 2018). However, when looking at anxiety associated with epidemics and pandemics, it is beneficial to consider the subject from a disaster perspective. A disaster can be defined as "a crisis that can cause large-scale damage to a community and hinder its ability to recover" (Lee and Lee, 2018). From this lens, it is easy to see how an epidemic or pandemic can be considered a disaster. Additionally, there are several studies that have examined the effects of epidemic illness on mental health from a disaster perspective (Fullerton, Ursano, & Wang, 2004; Lee et al., 2016; Lee, Han, &Cho, 2016; Lee and Lee, 2018; Neria & Sullivan, 2011; North and Pfefferbaum, 2013; Tolin and Foa, 2006; Wayment, 2004)

Fullerton, Ursano, & Wang (2004) found that Post Traumatic Stress Disorder (PTSD) is the most common disorder experienced by disaster victims, followed by acute stress disorder, major depressive disorder, and anxiety disorders. Several studies have also found females at a higher risk of developing symptoms from disaster-related anxiety (Lee et al., 2016; Lee and Lee, 2019; Tolin and Foa, 2006; Wayment, 2004). In addition to direct exposure to disasters, indirect exposure to disasters (such as through stories or social media) can also cause symptoms associated with disaster-related anxiety (Neria & Sullivan, 2011). Specifically, Lee and Lee (2019) found that as indirect exposure to disaster increases, so does the possibility of experiencing stress, anxiety, and depression. Additionally, some studies have linked more news exposure to disaster to increased anxiety (North and Pfefferbaum, 2013; Lee, Han, &Cho, 2016).

One study that focused on the Ebola epidemic in Sierra Leone in 2014 found the epidemic associated with feelings of anxiety, threat, guilt, and shame (Winter, 2018). Moreover, the anxiety that was experienced by individuals during this study had resulted from the "unconstrucuability" of the virus (Winter, 2018). The people assessed in this study had experienced a total dissolution of core structures as well as a constant threat of death, and some described feeling as if "things were upside down" (Winter, 2018). Given the current state of the United States during the COVID19 Pandemic, this information about eco-anxiety experienced by those in Sierra Leone in 2014 seems extremely relevant.

Risk perception and anxiety. Studies have shown that perception of risk plays a major role in how anxious some individuals feel about illness, epidemics, and pandemics. (Bults et al., 2011; Lau et al., 2003; Lee and Lee, 2019; Leung et al., 2005; Xu and Peng, 2015) Lee and Lee (2018) found that a higher perception of risk of disaster is associated with higher reporting of depression and symptoms. Additionally, some studies have found that the number of "epidemic-related risk perception and protective behaviors increased or decreased consistently with the rising and falling number of new cases" (Bults et al., 2011; Lau et al., 2003; Leung et al., 2005; Xu and Peng, 2015).

In a study focusing on the A(H7N9) flu epidemic in Hong Kong in 2014-2015, Liao et al. (2019) found that psychological responses and behaviors may change "in parallel with the evolution of the epidemic". In the case of the Laio et al. (2019) study, greater number of responses to the epidemic (such as stocking-up on supplies, self-quarantining, and mask-wearing behaviors) were seen in older individuals as compared to younger individuals, and worry was strongly correlated with protective behaviors. Other studies have linked responses to illnesses to herd behaviors (Smith, 2006; Syed et al., 2003).

Eco-Anxiety and Politics

Emotions have been linked to both politics and political beliefs. (Glaser & Salovey, 1998; Marmor-Lavie & Weimann, 2006) Similarly, physical anxiety has been linked to political issues (Renshon, Lee, & Tingley, 2015), such as immigration, that have the potential to cause measurable spikes in physiological reactivity. Additionally, it has been said that people get anxious when their homes are threatened (Heath Kelly, In Press), which can be a popular topic among politicians. Furthermore, Lipzynka (2017) found that political unrest can create mental health issues for existing mental health sufferers. Similar studies on children have found that living in places of high political violence can negatively affect the mental health of children, causing symptoms such as depression, anxiety, community stress, and Posttraumatic Stress Disorder, or PTSD (Cummings et al., 2009; Cummings et al., 2011; Moussa et al., 2015).

Politics and existential anxiety. Some research has suggested that political issues can cause a type of existential anxiety (Browning, 2018), with people using self-identity and "regular routines" to combat existential anxiety surrounding political issues (Giddens, 1991). It has been theorized that this is because humans live for normal routine and tend to concentrate on things they can control (Browning, 2018).

Anxiety on both sides of the political divide. Studies have shown that anxiety is used and experienced by those on both sides of the political divide (Albertson, et al., 2018; Altemeyer, 1996; Crouse & Stalker, 2007; Dollard et al., 1939; Greenberg, Pyszczynski, & Solomon, 1986; Latkin & Curry, 2003; Kessler and Cohrs, 2008; Napier & Jost, 2008; Pihkala, 2018; Roccato & Russo, 2017; Tajfel, 1981; Whitley, 1999; Zhang, et al., 2015). Democrats and other liberals have used eco-anxiety to push their agenda and make change around issues such as climate change (Albertson et al., 2018). Although considered extremely important by many due to it's ability to create change, this kind of eco-anxiety can also cause significant distress (Pihkala, 2018)

Eco-Anxiety Surrounding Social-Justice Uprisings

There is a wealth of research and literature surrounding anxiety and social justice issues. Because the current social justice movement in the United States is focused on the treatment of people of color (most notably Black individuals and the Black Lives Matter (BLM) movement) and police homicide, the research and literature reviewed in this section is focused on these same subjects.

Social violence, police brutality, and Black individuals. Social violence and police brutality have been directly linked to physical and mental distress in Black men and boys (Staggers-Hakim, 2016). Homicide continues to be a leading cause of death for Black men (Heron, 2015), with police homicide being a significant factor to the mortality of Black men (Juzwiak & Chan, 2014). Johnson et al, (2014) found that Black men were killed on average of about twice a week in 2014, and that Black individuals are three times as likely to get killed by police than any other racial or ethnic group. Additionally, Swaine, Laughland, & Lartey (2015) found that out of those Black men killed by police in 2015, more than one in five were unarmed.

People of color and the effects of social inequalities on overall health. People of color, Black in particular, are the most vulnerable to the effects of social inequalities on health (La Veist & Isaac, 2012; Lee et al, 2017; Staggers-Hakim, 2016). Racism causes social inequalities such as unemployment; poor housing quality; neighborhood and community underdevelopment; crowding; poverty; and violence (Staggers-Hakim, 2016). Furthermore, stress from racism (perceived racism, internalized racism, and experienced racism) is related to health difficulties such as obesity; hypertension; physical inactivity; diabetes; heart disease; cancer; mental health concerns; sleep disturbance; breast cancer and premature mortality. (Harrell et al., 2003; Paradies, 2006; Staggers-Hakim, 2016).

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Outpatient Services Provided at Discharge from an Inpatient Psychiatric Unit and Their Link with Readmission Rates

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Topic

This study explores inpatient psychiatric unit readmission rates and how to ensure patients receive the most beneficial level of care upon discharge.

Research Question

Does linkage with a higher level of care upon discharge from an inpatient psychiatric unit result in fewer future occurrences of readmittance?

Purpose

To gain a clearer understanding of patient needs upon discharge in an effort to reduce readmission rates and avoid continued upheaval of patient lives as well as continued strain on hospitals.

Literature Review

Acute psychiatric inpatient services, such as those offered at Clifton Springs Hospital and Clinic (CSH&C), are meant to stabilize and link patients with more appropriate long-term mental health care. As Nelson et al. (2000) state, since the 1980's inpatient mental health care has shifted focus to acute stabilization rather than a primary mode of treatment. Because of this shift, it is paramount that mental health systems ensure patients are linked with appropriate outpatient services to serve their needs and decrease future hospitalizations.

- Level of Outpatient Care
  - Outpatient Mental Health Counseling: Patients who did not attend follow-up appointments were twice as likely to have readmission within a year (Compton et al., 2006)
  - Assertive Community Treatment (ACT): ACT found to be beneficial to those with schizophrenia spectrum disorders and bipolar affective disorder who struggle in standard care (Munetz et al., 2019)
  - Behavioral Health Case Management: Decreased hospital services when intensive case management was used for high utilization patients (Burns et al., 2007)

Literature Review Cont.

- Level of Outpatient Care Cont.
  - Personalized Recovery Oriented Services: Decrease in hospitalizations from pre-PROS to post-PROS enrollment (White et al., 2018)
  - Residential Services and Group Homes: Individuals with severe mental illness in supported housing experienced less time in the hospital than those utilizing standard care or case management (Aubry et al., 2014)
  - Long-Term Hospitalization: Patients reported acquisition of useful life skills and increased social functioning upon discharge (Loch, 2014)
- Risk Factors for Readmission
  - Personal Factors: Diagnosis, age, sex, treatment adherence, symptoms, housing problems, behavioral issues, comorbidities, a history of hospitalizations, socioeconomic status, marital status, insurance type, employment status, education level, and location of residency (Yamaguchi et al., 2019; Han et al., 2020)
  - Institutional Factors: Units themselves, medications, care after discharge, locations of hospitals, hospital size and type, and experience of seclusion or restraint (Yamaguchi et al., 2019; Han et al., 2020; Akram et el., 2020)

Methods

- Participants: This study is a retrospective chart review. The participants are described as patients of Clifton Springs Hospital and Clinic's inpatient psychiatric unit. Charts were selected based on patient's admittance to the unit between November and December of 2020. The only requirement for admission onto the Woodbury 2 unit is that patients are 18 years of age or older.
- Materials: Unit computers will be used to access patient records to collect data and SPSS software will be utilized in data analysis.

Methods Cont.

- Design: The dependent variable will be if patients were readmitted to the unit within 30-days while the independent variable will be the treatment patients were discharged into prior to readmission, and neither variable will be manipulated. This study will be a between-group study, as not all participants received each level of care upon discharge.
- Procedure: Data will be collected via retrospective chart review and information about 30-day readmissions and level of care at prior discharge will be the only data collected. Upon collection, data will be analyzed in SPSS using a chi square test to observe any correlation.

Anticipated Results

Upon data collection and analysis I anticipate findings will show that patients who were discharged only to outpatient mental health counseling will have a higher readmission rate than those discharged to a higher level of care. From there, further research may be done to expand generalizability by including a larger sample size from various locations and looking at longer periods between admissions.

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