

The Effect Outdoor Mindfulness Activities have on Elementary Students' Mental Wellness.

By Julia Fox Hansen

Comprehensive Project

Table of Contents

Introduction	4
Background	7
- <i>InsightLA</i>	7
- <i>Reported Mental Health Difficulties among California’s Youth:</i>	8
- <i>The Urban and Environmental Policy Institute</i>	9
- <i>Los Angeles Unified School District (LAUSD): Mental Health Strategies</i>	10
Literature Review	10
- <i>Mental Health Within United States Youth:</i>	11
- <i>The Relationship Between Mindfulness and Students Mental Health:</i>	14
- <i>Access to Residential Green Space During One’s Childhood and its Effect on Children’s Mental Health.</i>	17
- <i>Conclusion</i>	19
Methodology	20
Data/Findings	22
- <i>Early Exposure to Mindfulness Provides Individuals Lifelong Skills to Attain Feelings of Peace, Wellness and Intentional Awareness</i>	24
- <i>Covid-19’s Negative Effect on Students Mental Wellness</i>	26
- <i>There is a Need for Social and Emotional Support in the Classroom</i>	27
- <i>Time Spent Outdoors Helps strengthen One’s Mental Wellness</i>	29
- <i>Survey Analysis</i>	31
Discussion	38
Policy Recommendations	38
- <i>Building Greener Schoolyards in Los Angeles School</i>	39
- <i>Mindfulness Trainings for Educators</i>	40
Bibliography	42

Acknowledgments

I would like to acknowledge the incredible mentors, professors and supporters in my life who have made a tremendous impact in my academic and overall life. Rosa Romero and Raquel Galarza, thank you for inviting me to be involved in your work with Loreto Street Elementary school. I have loved working with you both and am so inspired by your dedication and determination to help create healthier futures for younger generations. Principal Arciniega, your continuous care and strong belief in your students' wellness will help your students feel more engaged and comfortable in themselves and their community. You help everyone feel heard and respected which is one of the greatest gifts to give someone. Rosamaria Segura, you are an incredible force of change. I greatly admire the work you do to introduce mindfulness practices to those who may otherwise not have the access to be exposed to its healing potential. You help heal one mind at a time which creates a ripple effect of positive change. Professor Matsuoka, Professor Cha and Professor Rodnyansky, thank you for your countless hours dedicated to helping us all feel confident and sure of our work and for your helpful edits and comments. Professor Rodnyansky, without your UEP 101 course my sophomore fall I am not even sure I would have landed as a UEP major, which I know has been the right home for me. Thank you for demonstrating a fierce passion to help educate students of inequities and challenges around us and introducing potential solutions while instilling a sense of power within each of us.

Susan Teare and Suzanne Fox thank you for working alongside me in co-creating an art and wellness curriculum through [The Yellow Tulip Project](#) which I hope will help provide students lifelong creative skills and outlets to tend to their wellness. Thank you to my wonderful parents for your continuous support, love and patience. Without you both I would not be the young woman I am today, and I am proud of who I am. Thank you sweet Eliot Brody for holding me

each time I began to unravel during this process and for always knowing how to help me feel more grounded and centered and loved. Thank you readers for demonstrating interest in creative ways we can help younger generations attain feelings of mental wellness. To anyone who may be struggling with or without mental health challenges, there is help and there is hope out there. It is okay to not be okay, okay?

Resources:

Crisis Text Line	Text “Brave” to 741-741
National Suicide Prevention Lifeline	Call 1-800-273-TALK (8255)
Natioanl Sexual Assault Hotline	1-800-656-HOPE (4673)
Trevor Project (LGBTQIA+)	1-866-488-7386
BIPOC/AAPI Mental Health Resources	Link for more resources

Introduction

The Effect Outdoor Mindfulness Activities have on Elementary Students Mental Wellness

The world is quickly urbanizing, with an estimated 68% of the world population living in urban areas by 2050¹. With this urbanization, many countries and communities will be faced with expansive inequities surrounding issues of housing, infrastructure, employment, education and health care. With these stressors, the mental health of our population is at risk to further decline as basic human needs continue to be unmet and seemingly unreachable.

The statistics of mental health disorders are staggering- one in five American adults experience some form of mental illness today- with this proportion likely to increase as we are faced with the incomprehensible effects of climate change, racial injustices, worldwide inequities, global pandemics and more². With the combination of world-wide urbanization and the rising rates of mental illness, it is crucial we think creatively about ways to address these two issues. As the world becomes more cement based with less green space, the opportunities for young children to explore the outdoors is becoming few and far between, especially for those living in cities.

Research has shown that incorporating natural environments into urban planning is a positive approach to improve one's mental health and reduce the rising global burden of psychiatric disorders.³ Along with this, providing more green spaces may help reduce temperatures in areas with concentrated cement and pavement that usually re-emit the heat rather than absorb the solar heat⁴.

¹ United Nations, (2018)

² The Johns Hopkins University, (2022)

³ Engemann et al., (2019)

⁴ Aram et al., (2019)

It is important that green space is introduced into school environments, so kids can cultivate a healthy relationship with the natural world at a younger age⁵. The benefits of green space on mental wellness is promising, which makes the introduction of these spaces for kids even more crucial as our mental health continues to be put in jeopardy by these prevailing issues.⁶ Because we live in a densely populated city where green space is rare- even more so in communities of color where inequities, racism and systemic oppression have made it so that there is limited access to healthy foods, parks, and health care - integrating a garden onto an elementary school ground is an incredible way to help younger generations have access to green space, learn what it means to grow food and learn tangible methods that helps us tend to our physical and mental health.

During the academic 2021-2022 school year, Loreto Street Elementary School educators and Urban and Environmental Policy Institute professors worked to construct an outdoor mindfulness garden on the Loreto Street school grounds where students would engage in mindfulness practices. Research suggests that mindfulness and nature have immense healing effects on people's wellness and yet these properties are not accessible to everyone. This mindfulness curriculum will hopefully provide students with tools on how to navigate the complexities of everyday life and find mental contentment and/or stability within the self. Urban and Environmental Policy Institute professors, Rosa Romero, Raquel Galarza, Loreto Street's own principle, Principle Arciniega and InsightLA's mindfulness practitioner, Rosamaria Segura, worked to organize Mindfulness Based Stress Reduction (MBSR) activities that help children become more present, aware of their space and surroundings, in touch with their breath and

⁵ Engemann et al., (2019)

⁶ Engemann et al., (2019)

feelings and able to act with intention rather than heated emotion⁷. MBSR has been said to help participants “acquire a more adaptive approach to dealing with life’s challenges” as one may be able to see the bigger picture, think more broadly and exit their immediate feelings⁸.

As we continue to see a rise in youth mental health challenges, it is necessary younger generations have access to tools that may help navigate the complexities of the world while cultivating a respectful relationship with our environment⁹.

In collaboration with staff and students at Loreto Elementary school, this research analyzed the impact that outdoor mindfulness activities have on children's mental wellness. Data and further evidence was gathered through qualitative surveys to better understand the elementary students’ feelings of wellness before and after an outdoor mindfulness activity. Along with a survey provided to the students, conversations with various mindfulness practitioners, educators and researchers helped provide a broad understanding of the effects outdoor mindfulness activities may have on elementary students' mental wellness.

Background:

Introduction

Mental health challenges are a prevailing issue among adolescents today including the youth of California and Los Angeles County. Previous research has connected various determinants of health to an increased impact of mental health issues. Some include: poverty, gender and gender identity, race and ethnicity, immigration status and age among other determinants¹⁰. The specific neighborhood central to this research project is Northeast LA,

⁷ *What is MBSR?*, (2021)

⁸ Economou et al., (2015)

⁹Reback, (2010)

¹⁰ (Torralba, 2021)

where Loreto Street Elementary School is located. Many community members in this neighborhood are native Spanish speakers and experience economic disadvantages¹¹.

1. Demographics of Loreto Street Elementary School

Loreto Street Elementary is a public school located in Northeast LA. This school enrolls 92% economically disadvantaged students with 95.3% of the student body being Latino. The student to teacher ratio is 20:1 which is better than other school ratios in the district¹². Northeast LA has a population of approximately 243,925 with a high population of 20-50 year olds. In this area 52% of households speak Spanish while 30% speak strictly english. The other languages spoken in the Northeast area include indo-european, languages from asian countries and others that are undefined¹³.

2. InsightLA

InsightLA is a local non-profit that has created a meditation community dedicated to providing mindfulness and compassion practices for any and all communities regardless of race, income, gender, sexuality, immigrant status etc. *InsightLA* offers various classes and retreats aimed at engaging people in the healing practice of meditation. They are a secular, evidence based mindfulness training program that follows the traditional Buddhist teachings. Rosamaria Segura has been working alongside Professor Romero's initiative in bringing the mindfulness

¹¹ (2017 CITY OF LOS ANGELES - DEPARTMENT OF CITY PLANNING NORTHEAST LOS ANGELES DEMOGRAPHIC PROFILE 2017)

¹² (Los Angeles Unified School District 2019)

¹³ (2017 CITY OF LOS ANGELES - DEPARTMENT OF CITY PLANNING NORTHEAST LOS ANGELES DEMOGRAPHIC PROFILE 2017)

garden onto Loreto Street Elementary School's ground¹⁴. Ms. Segura is dedicated to bringing mindfulness practices to communities with limited exposure to meditation practices. She teaches in various environments such as non-profit organizations and public schools and facilitates mindfulness activities in both Spanish and English.

3. Reported Mental Health Difficulties among California's Youth:

A briefing published January 27, 2021 shared that 45% of California's youth had reported struggling with various forms of mental health issues, with a third of them experiencing serious psychological challenges that potentially could interfere with their academic and social functionality¹⁵. The authors of this study looked at the social determinants of health that could be playing a role in these staggering numbers and found that poverty, gender and gender identity, race and ethnicity, immigration status and age all affect one's mental health. The authors share that it is "imperative... to increase access to mental health treatments for all adolescents and to improve preventive measures for those groups at particularly high risk" in order to address the rising rates of mental health challenges being expressed today¹⁶. The Los Angeles Unified School District (LAUSD) is aware of these incredibly high numbers of mental health challenges seen among their students. In fact, in their schools blueprint they write that "LAUSD affirms the importance of teaching students to be both physically and mentally healthy by creating and maintaining a school environment that promotes academic achievement and helps promote a healthy community." (LAUSD Blueprint for Wellness p. 23)¹⁷. A 2013-2014 screening of 572

¹⁴ Rosamaría Segura (2021)

¹⁵ Torralba, (2021)

¹⁶ Torralba, (2021)

¹⁷ *Blueprint for Wellness*, (2014)

LAUSD students showed that 88% of students reported experiencing three or more traumatic events in their lives with 55% of these students showing active symptoms of PTSD, depression and anxiety¹⁸.

4. *The Urban and Environmental Policy Institute*

The Urban and Environmental Policy Institute (UEPI) is part of Occidental College and is an applied research and advocacy center. Their mission is to “advance community-driven programs and policies to build healthy, thriving communities while achieving social, economic and environmental justice”¹⁹. Professor Romero is the director of the Farm to Preschool Program and Professor Galarza is the health Education Manager for the LA Farm to School Initiative which is part of the UEPI. In the Spring/Summer of 2021, UEPI staff congregated to develop a plan with the objective of creating a healthier and more holistic school environment at Loreto through community engagement and developing best practices that could be replicated at other urban Title 1 schools. The objective of this project was to develop a greener community campus at Loreto through a mindfulness garden space. Tools would be provided to caregivers and teachers to incorporate mindfulness practices into the students daily experience. The UEPI faculty recognize that many students within the LAUSD system, including at Loreto Street, live below the poverty level, with 92% qualifying for Free and Reduced Lunch. Many Loreto families are also affected by disproportionately high rates of incarceration. This project is aimed to create a space on the Loreto campus that supports the holistic well-being of students and families and is in direct contrast to the prison system affecting many in this community.

¹⁸ *Blueprint for Wellness*, (2014)

¹⁹ Occidental College, (2021)

5. *Los Angeles Unified School District (LAUSD): Mental Health Strategies*

School-Based Psychiatric Social Workers (PSWs) services may be funded by individual schools within The Los Angeles Unified School District. These services are aimed at providing a range of preventive, early intervention, and acute mental health assessments and treatments in group, individual, or family modalities. PSW's are present to help address mental and emotional wellness of students by helping develop and sustain a caring school environment that promotes problem-solving skills and positive behavior support. Currently, LAUSD School Mental Health Clinics and Wellness Centers are providing individual and family therapy for LAUSD students of all ages. These services are currently being held remotely by telephone or video conferencing.

Literature Review

Introduction:

There is a great deal of existing literature on the mental health of elementary students, the effect green space has on one's mental wellness and the role mindfulness has on mental wellness. This research is centered around the role outdoor mindfulness spaces have on elementary students' mental wellness. Analyzing pre-existing research provides a broader and more robust understanding of the beneficial role the outdoors and mindfulness activities have on one's health, with a particular focus on elementary students mental wellness. It is evident that the integration of mindfulness into schools can benefit elementary students mental wellness and

decrease students feelings of mental unrest²⁰. With the staggering levels of mental health challenges seen in youth today, it is necessary schools begin addressing this rising issue of mental health challenges among younger populations. Both worldwide and countrywide school administrators are beginning to think critically and creatively about how to help their student body navigate their mental health challenges. The inclusion of green space into communities and mindfulness activities in schools has shown to help improve younger populations' mental health. Previous literature related to mindfulness, green space and elementary kids mental health all demonstrate how these areas can connect to improve students mental wellness through creative measures. The studies being reviewed are from trustworthy journals and have been published within the past 20 years making the information more relevant and applicable to the research that has been conducted during the academic 2021-2022 year.

Mental Health Within United States Youth:

The statistics of mental health disorders are staggering- suicide being the third leading cause of death in adolescence (15-19) worldwide- with mental health challenges likely to increase with the prevailing effects of climate change, racial injustices, worldwide inequities, global pandemics and more²¹. Globally, depression is one of the leading illnesses and causes of disability among teens²². On a national level, 13.01% of youth (ages 12-17) reported they suffer from at *least* one major depressive episode, a report found in 2020²³. Emergency room visits following suicide attempts by girls age 12 to 17 spiked tremendously²⁴. Even with these

²⁰ Schonert-Reichl, (2015)

²¹ The Johns Hopkins University, (2022)

²² *Adolescent mental health*, (2020)

²³ *2020 mental health in America - Youth Data* (2020)

²⁴ Graham, (2021)

enormous reported rates of mental health challenges and suicide attempts, 59% of American youth with major depression do not receive mental health treatment of any sort²⁵. Beyond adolescence, younger children are experiencing mental health challenges and behavioral difficulties as well with an estimate of 10%-20% of the world population of children having mental health disorders and problems²⁶. Eric Rossen and Katherine C. Cowan's journal article *Improving Mental Health in Schools*, shares how schools are ground zero for the effects of mental health problems in children and are also crucial participants in providing services to their student bodies. And yet, far too many schools are met with inadequate resources and services to provide the necessary care to their student body²⁷. More than one in six students experience some form of mental health challenge and yet this number is likely to be higher as many youth do not receive the help, and therefore the diagnosis, they may need to gain adequate care²⁸. Collectively, this number represents approximately 10 million students who need professional interventions in the K-12 public school systems²⁹. These mental health problems can greatly interfere with a student's ability to concentrate, have positive relationships and cope with adversity. With these staggering numbers it is essential resources are allocated to schools and mental health professions to help provide students with the adequate care and help they may desperately need. In fact, Eric Rossen and Katherine C. Cowan shared that schools are "the largest de facto provider of mental health services" and that within some rural school districts, schools are the only source of mental health support for the students. Providing school-employed mental health professionals can help reduce many of the common barriers students face when

²⁵ 2020 mental health in America - Youth Data (2020)

²⁶ Zhang, (2020)

²⁷ Rossen, 2015

²⁸ AAFP Home (2019)

²⁹ Rossen, 2015

striving to seek help such as cost, schedules, transportation, and stigma. Mental health rates within adolescents are disturbingly high and the Covid-19 pandemic has only intensified these mental health challenges. The increase can be attributed to the multitude of routine disruptions such as school closures, social isolation, financial hardships, and gaps in health care access³⁰. Throughout the pandemic, parents of children ages 5-12 have reported elevated signs within their kids of depression, anxiety, psychological stress and worsened emotional and mental health³¹. Gayle Porter echoes Eric Rossen and Katherine C. Cowan's statement that integrating mental health services into school systems can help provide students with accessible care to tend to their mental wellness. Porter shares in their article *Collaboration Among School Mental Health A Necessity, Not a Luxury* how "school counselors are in a unique position to facilitate the collaborative process needed to ensure the provision of comprehensive, accessible mental health services"³². There are rising rates of mental health challenges among adolescents which are simultaneously being met with *inadequate* and *inaccessible* mental health resources. Including mental health resources and services into school systems could provide equitable services to youth regardless of one's insurance, transportation abilities, stigma etc. The integration of early mental health interventions has the ability to improve children's future outcomes and their way of interacting with other classmates. In Randall Reback article in the *Journal of Policy Analysis and Management*, he talks about the "valuable spillover effects on peers, classmates, teachers and family members" that the inclusion of mental health services in schools can have. Not only is the individual benefiting from this personal work, the overall community can better themselves as well.

³⁰ Nirmita Panchal et al., (2021)

³¹ Nirmita Panchal et al., (2021)

³² Porter, (2000)

It is crucial schools take creative measures to enhance mental health support and care for their student body in order for future generations to feel healthier and happier. Incorporating natural environments into urban planning and schools is a positive and proactive approach to improve one's mental health and reduce the rising global burden of psychiatric disorders³³.

The Relationship Between Mindfulness and Students Mental Health:

Mindfulness is defined as “ maintaining a moment-by-moment awareness of our thoughts, emotions, bodily sensations, and surrounding environment with openness and curiosity”³⁴. Mindfulness provides a clear pathway to engage more fully in one's life and can provide the tools one may need to respond intentionally rather than reacting automatically³⁵.

Kimberly Schonert-Reichl's (2015) study introduces how the integration of mindfulness programs and activities into school systems has been shown to improve students cognitive control and stress physiology and have seen an increase of levels of empathy within their student body³⁶. Along with this, this article showed how the integration of mindfulness activities among students can decrease student's self-reported symptoms of depression and peer-rated aggression which helps them be more sociable. Additionally, the research found the benefits of mindfulness among younger generations in turn found that mindfulness activities benefit elementary students' mental wellness. Mindfulness provides a clear pathway to engage more fully in one's life and can provide the tools one may need to respond intentionally rather than reacting automatically³⁷.

Individuals may develop resources that help them meet the demands of potentially stressful

³³ Engemann et al.,(2019)

³⁴ Okafor, (2021)

³⁵ Ortiz, (2015)

³⁶ Schonert-Reichl, (2015)

³⁷ Ortiz, (2015)

environments through practicing mindfulness. This is particularly helpful in school settings when young people are faced with academic stressors, confusing changes within the body, relationship challenges, difficult home settings, social inequities and much more. Mindfulness can help individuals acquire a more adaptive approach to dealing with life's struggles and navigate the plethora of stressors people face. This can be done so by having internal skills on how to engage with life in a present manner and feel more in control of one's self and emotions/reactions.

Similarly, Dr. Maria Napoli's 2008 article, focuses on the effects that mindfulness interactions have on first, second and third graders, and reifies our understanding that mindfulness can help decrease students' experiences of self-reported mental health challenges, therefore improving one's mental wellness. Interestingly, mindfulness not only can improve students mental wellness, these mindfulness oriented activities can enhance students classroom learning and listening abilities³⁸. This is beneficial information as school educators may be more keen to incorporate mindfulness activities into their classrooms if they were to know it could help their students engage more intentionally with their work. Fascinatingly, Katherine Weare's article *Evidence for the Impact of Mindfulness on Children and Young People*, explores how mindfulness meditation can profoundly alter the structure and function of the brain to improve the quality of both thought and feeling within children³⁹. This was shown through brain images. Weare shares how these improvements further intensifies "young people's ability to pay attention, stay more focused, think in more innovative ways, use existing knowledge more effectively, improve working memory, and enhance planning, problem solving, and reasoning

³⁸ Napoli, (2005)

³⁹ Weare, (2012)

skills”⁴⁰. Mindfulness inclusion in school classrooms can help students attain more mental clarity, stability and therefore perform higher. Mindfulness has expanded beyond its original eastern roots and has been introduced into the western education systems to enhance intentionality which has been shown to provide optimal conditions for learning and teaching for all pedagogical approaches⁴¹. Scientists have been able to analyze the effects of stress on a child which have been shown to be significant factors in the formation of one's mental capacity. For instance, stress damages the architecture of the developing brain which can lead to vulnerability to lifelong problems. The inclusion of mindfulness can help strengthen students ability to relate to any experiences in a responsive manner rather than reactive and reflective which support one's ability to regulate their emotions and be more intention and aware of their emotions and actions⁴². Many children will begin to express learning, behavioral, attentional and/or mental health challenges that can be stress induced within their school days. Because of this, schools make an ideal setting to offer useful interventions to help students navigate these challenges and promote healthy brain development and functionality through educating students and teachers on stress resilience through mindfulness⁴³. It is evident that the inclusion of mindfulness in school systems has many benefits including enhanced attention and therefore learning capabilities, decrease in mental health challenges among kids, more attuned teachers, and lifelong brain development benefits.

⁴⁰ Weare, (2012)

⁴¹ Meiklejohn et al., (2012)

⁴² Meiklejohn et al., (2012)

⁴³ Meiklejohn et al., (2012)

Access to Residential Green Space During One's Childhood and its Effect on Children's Mental Health.

In order to conceptualize green space and its effect on children's mental health, one must understand the definition of 'green space'. The journal article by Matilda Annerstedt van den Bosch et al., defines urban green spaces as “any land that is partly or completely covered with vegetation, such as parks, community, allotment or residential gardens, urban forests or stress trees; however, definitions vary and depend on the local and cultural context...”⁴⁴. There is a great deal of literature exemplifying the healing components green space can have for children's mental wellness. In fact, Dr. Engemann, a postdoctoral researcher in Denmark, has been able to understand how access to green spaces in urban centers can help decrease psychiatric disorders while providing physical health benefits for children⁴⁵. Her research demonstrates the necessity in incorporating green spaces into urban centers in order to improve the communities mental health and reduce the rising rates of psychiatric disorders. This creative mechanism to address mental health challenges is crucial to incorporate into schools systems in order to help create positive impacts on adolescents' mental well-being⁴⁶.

Previous research done in Denmark uncovered that higher amounts of green spaces are often associated with stronger mental health and can enhance psychological restoration through beneficial association with the amygdala- a part of the brain that helps process strong emotions such as fear- and can help alleviate the negative effects of dense and noisy city environments that increase stress⁴⁷. Green space provides a healthy break for the over-stimulated minds which can

⁴⁴ Van Den Bosch, (2016)

⁴⁵ Engemann et al.,(2019)

⁴⁶ Zhang, (2020)

⁴⁷ Engemann et al.,(2019)

help restore one's mental health and decrease stress related disorders. Along with this, green spaces offer an outlet for exercise, space for socialization, a lower amount of noise and air pollution and can enhance immune function due to exposure to healthy microbiota⁴⁸.

The inclusion of green spaces into city planning goes beyond aesthetics. Constructing and conserving outdoor space can lead to long term health benefits for populations, creating healthier cities⁴⁹. Green space can strengthen mental health and resilience, increase in physical activities therefore reducing the risk of obesity, improvements in positive moods and emotions to name a few. It is evident that time spent in and/or exposure to green spaces can provide a space of solace from daily hassles and reduce the risks of psychological and physiological stress in adolescence. These benefits carry on into one's adult years therefore providing lasting mental health benefits from this green space exposure⁵⁰. Beyond the mental and social benefits the outdoors have on children's mental health, outdoor space can benefit one's creativity, problem-solving, focus and self-discipline therefore enhancing a student's ability to learn in school⁵¹. These articles mentioned in this study highlight how the inclusion of green spaces on school grounds can help students interact more smoothly with others, feel healthier and happier, more in control of their mental stability and perform stronger in school. Beyond physiological benefits, greening spaces on school grounds can help provide a safe habitat for native birds, plants, insects and wildlife as a whole to thrive especially as our built environment cover continues to expand⁵². Interestingly, Mary Rivkin, author of *The Schoolyard Habitat Movement: What It Is and Why Children Need It*, discuss' the developmental benefits of outdoor habits for school children, explaining how

⁴⁸ Rocchio & Carlowicz, (2018)

⁴⁹ Dwyer, (2019)

⁵⁰ Zhang, (2020)

⁵¹ Children & Nature Network

⁵² (Danks, 2012)

children are multisensory and therefore the more space the young child has to learn through sensory and physical activity outdoors- such as observing the changing clouds, the moving leaves, the cycling plants, the varieties of colors and sounds, the vast range of permitted behaviors (shouting and running and climbing) and outdoor space offers,— the more physical, cognitive, and emotional development will occur. This increased development happens in a more pronounced manner outdoors than it would from a manufactured indoor environment⁵³.

Conclusion

There is a great deal of previous literature related to mindfulness and mental health, green space and mental health and the current status of children's mental health. These articles have provided a rich understanding of what is currently written that examines the mental health challenges youth face and the impact that green space and mindfulness can have on an individual and a community. It is critical that mechanisms are in place to tend to mental wellness and address the rising rates of mental health challenges in today's world. Younger generations are experiencing higher rates of depression and anxiety-especially now with the pandemic- which can have negative health impacts later in their lives. These articles demonstrate that interactions with green space can enhance one's mental wellness and that mindfulness is a creative and holistic method used to help bring mental clarity to people and communities. In fact, offering mental health counselors, providing greenery in schoolyards and offering mindfulness activities in schools not only improves students mental health but also improves students academic achievements and attention in the classroom. The previous studies on green space and mental health as well as mindfulness and mental health provided detailed background

⁵³ Rivkin (1997)

information in this field. Each study utilized a different method of gathering and analyzing data; using multivariable analysis of variance approach, engaging with minors through interviews and conversations, and providing surveys to children. It is crucial to work both with the school and the children's parents in discussing the necessity of incorporating mental health awareness programs into schools. If introduced in a respectful, educational and inclusive manner, parents may feel more inclined to begin having the hard yet necessary conversation of mental health awareness in their households. While these articles provided a rich understanding of the benefits of green spaces, mindfulness and the rates of elementary kids mental health, it was important to engage further with Loreto Street Elementary School and the collaborators involved in constructing an outdoor mindfulness garden and see how this model can be applied to other school yards as well.

Methodology

This study aimed to analyze the impact that outdoor mindfulness activities have on children's mental wellness, hypothesizing that access to green space and the inclusion of mindfulness activities in younger generations would provide children with holistic tools to navigate life's challenges and provide a skill set on how to tend to one's mental wellness. This, hypothetically, would provide students the ability to think, feel and act in ways that have a positive impact on their physical and social well-being. This study engaged two professors at Occidental College as well as local teachers to integrate a mindfulness garden that includes mindfulness activities into Loreto Street Elementary school in hopes to enhance youths' mental wellness and feelings of security. The primary data gathering was conducted through a detailed pre-post survey of children participating in the wellness program at Loreto Street Elementary

School. This survey was administered before and after students engage with mindfulness activities in the designated outdoor garden space at Loreto Street Elementary. The survey was simple and straightforward: a white board with the prompt “I feel” with 5 predetermined responses students can put a sticker next to that most resonates with them in that moment. The responses are:

1. Happy and excited
2. Relaxed and calm
3. Just ok
4. Nervous and stressed
5. Sad and frustrated

The survey was created to gather data on the effect of the mindfulness garden on their mental health.

Interviews were conducted with multiple mindfulness practitioners, school administrators and educators and international behavioral scientists to gain a better understanding of their perspectives on the inclusion of mindfulness gardens on students' wellness. Some examples of questions asked to interviewees included:

- Did you feel it is important to integrate this outdoor mindfulness garden? Why or why not?
- How do you perceive younger generations' mental wellness?
- How do you think we can make mindfulness more attainable for school children?
- Why do you believe mindfulness is something important to practice?
- How would you describe your students' wellness after engaging with the outdoor space?

Along with these interviews and surveys, pre-existing secondary sources were used to better understand the effect outdoor mindfulness activities have on children’s mental wellness. While the study of mindfulness and nature’s effect on health is relatively new, there are existing studies that offer helpful points on the connection between these topics.

Data/Findings

Over two months, four professionals engaged in the fields of academics, mindfulness practices, mental health, and nature studies participated in this study to better understand the effect outdoor mindfulness practices have on elementary students' mental wellness. See chart below for a full list of interviewees’ names and affiliations.

Table.1 *Research Participants and Affiliations*

Name	Area of Expertise	Organization of Affiliation
Principal Maria Arciniega	Principal of school	Loreto Street Elementary School
Rosamaria Segura	Mindfulness Practitioner	InsightLA
Anna Forward	Kindergarten Director / Mindfulness School Practitioner	Chabot Elementary School

Sigrún Sigurðardóttir	Associate professor and Lecturer in Health Sciences at the University of Akureyri	University of Akureyri, Iceland
--------------------------	--	---------------------------------

Each interviewee offered useful insight that helped better understand the effects outdoor mindfulness activities may have on elementary students' mental wellness. Each individual is an expert in their field and very dedicated to their area of expertise. All share a common motivation to help enhance healing and wellness for others and utilize their specific areas of work to do so. The chart above lists the interviewees and their occupations. From these interviews, it became evident that mindfulness is a highly beneficial teaching practice to incorporate into school settings, that outdoors should not be overlooked as a teaching measure, and that students in today's time are not well as they are faced with tidal waves of anxieties related to ever-changing health unknowns. Mindfulness is an accessible and lifelong tool that helps the practitioner attain more mental clarity and stability. Themes that arose include how mindfulness helps people self-regulate their emotions and take time to process before reacting in situations, that nature helps create more feelings of peace and quiet, and that Covid-19 has negatively influenced the mental health of students and school teachers.

Early Exposure to Mindfulness Provides Individuals Lifelong Skills to Attain Feelings of Peace, Wellness and Intentional Awareness

The main findings identified through these conversations with the mindfulness practitioners is that the practice of mindfulness is an accessible and lifelong skill one can continually use to attain feelings of peace and wellness. The two practitioners who spoke, Rosamaria Segura and Anna Forward, discuss how mindfulness is key in helping one gain tools in how to self-regulate one's emotions and that this can help manage and navigate overwhelming emotions throughout one's life.

A unique component to mindfulness is the accessibility and affordability of this practice. Ms. Segura shares that once you have basic techniques introduced to you, you have the capability to tap into these practices anywhere and at any time. Ms. Segura discussed the importance in introducing mindfulness to younger generations as they can benefit from these practices as it helps them regulate their emotions and help them understand what they may be feeling. She shares how “mindfulness incorporates intentional awareness” and with this intentionality, one can better understand their feelings and therefore how to navigate them. Ms. Segura shares that mindfulness will not take all of someone’s problems away but instead will help them view their issues as more manageable. Having a baseline understanding of how to address one's overwhelming emotions at a younger age can help people feel less engulfed by their moods throughout their lives. Mindfulness, in Ms. Segura’s words, is a “ simple ongoing wellness practice that can offer an opportunity to train the mind to be aware of and within our surroundings. It helps us practice staying connected with what’s happening as we're talking and

breathing” therefore helping the participant stay grounded and minimize catastrophic thinking.

Ms. Segura shares:

I think they (children) can get closer to healing. Mindfulness gives them awareness to what their emotions are and an attempt to regulate or to heal, to express what they are experiencing. Mindfulness helps people see acceptance as acceptance, be more at ease with one’s thoughts and emotions, and helps someone recognize the struggles of daily life without viewing them as a burden but more as being present with the challenges and the joy and the harmonious balance with being with things as they are

Anna Forward shares the belief in the necessity in incorporating these practices into early ages so younger generations have access to these healing activities and mindsets. She echoes Ms. Segura’s beliefs of mindfulness as an accessible form of healing and practice for regulating one’s emotions. She integrates the practice of mindfulness into her school classrooms and shared that the more she prioritizes the practice of mindfulness in her classrooms, the more attentive and focused her students are. Ms. Forward says that:

Five minutes of it (the practice) is worth it because it is such a great opportunity to take a break and get centered... It helps you take time to care about yourself and others. I think that especially these days there’s a lot of stress going on in the world and it gives students the resources and the tools to move through all these social and emotional challenges they are facing in themselves. They are trying to process and more than ever they need tools to do that. Mindfulness helps teach kids how to self regulate and self reflect and process their own emotions and learn how to work out conflicts with others. It is all encompassing.

There's so much more than just breathing , they can use those breathing techniques to help pay attention and take a pause before the reaction. It helps them make better choices for themselves by regulating how they are feeling and not getting so overwhelmed by challenges. To be able to instill that self regulation in a child they can use this for the rest of their lives.

Through these conversations, it became clear that mindfulness practices can have indispensable benefits on people's feelings of wellness. Today, there is an overwhelming number of youth with mental health challenges which can be seen in a 2020 World Health Organization finding titled *Adolescent mental health*. Ms. Segura and Ms. Forward shed light on the accessible and affordable means to attain more feelings of mental clarity and feelings of wellness through the practice of mindfulness.

Covid-19's Negative Effect on Students Mental Wellness

A key takeaway from the conversations with Principal Arciniega and Ms. Forward is that students are unwell mentally. Both educators shared great concerns about students' mental wellness and the negative impacts Covid-19 has had on students' mental health. Principal Arciniega said:

I have never seen so much need for mental health, wellness or support as I have now. And unfortunately our counseling agency that would support our students here at school is so indicative of cases so they are not taking any cases. Because of that the list of people needing help is growing more and more. We have the highest needs among students and staff. There is a lot of high level of anxiety in teachers, support staff and students. The struggle is very real.

Anna Forward sees similar stress levels in her students. She shares:

The stress of Covid-19 has challenged everyone and everyone's mental health. There is a higher need for social and emotional support.

As both educators clearly state, mental health challenges are prevalent issues in today's society and within the health of their classrooms and have only intensified with the ongoing pandemic which continuously disrupts lives.

There is a Need for Social and Emotional Support in the Classroom

The principal of Loreto Street Elementary school was a huge supporter of the inclusion of the outdoor mindfulness garden and worked closely with the Urban and Environmental Policy Institute at Occidental College to help integrate this mindfulness space onto her school grounds. There was initial hesitation within the school's community revolving around the introduction of meditation practices into the curriculum. Cultural differences in approaching mindfulness was important to be wary of which Principal Arciniega navigated through well. She shared that people may be closed to the idea of 'meditation' but open to 'mindfulness' which was how she shaped the introduction of this space to the community. She shared:

I wholeheartedly believe that it (the mindfulness garden) has become a need for our students mainly because of all the things we are going through. My hesitation at the

beginning was that some of our families culturally have a little bit of an initial hesitation with anything that has to do with meditating, so mindfulness as a practice has made people more comfortable than a meditation garden.

Ms. Forward's inclusion of mindfulness activities in her kindergarten classroom have shown to help the students feel more attentive and focused both inside and outside of the classroom. She shares:

I think that especially these days there's a lot of stress going on in the world and it (mindfulness) gives students the resources and the tools to move through all these social and emotional challenges they are facing in themselves.

An interesting finding Principal Arciniega shared is how she has come to understand that students with behavioral problems often don't know of healthy ways to cope with various challenges and therefore react negatively towards themselves and/or others. She believes it is important to integrate mindfulness because students "need the social and emotional aspect of their character nurtured especially at the elementary level to help them bring a sense of wholeness about the way we cope". Principal Arciniega believes that integrating mindfulness into the elementary level is a proactive measure to help students attain tools to help them cope or navigate challenges that arise. She shares:

It's making it a habit of the mind to be able to have this as a coping mechanism to be readily available that they can do anywhere and everywhere.

Principal Arciniega and Ms. Forward view mindfulness as an accessible and achievable method to integrate self-awareness and care into the school days that have both immediate and lasting effects on students' wellness.

Principal Arciniega orchestrated monthly professional development meetings where teachers would be introduced to mindfulness techniques and practice them themselves. Principal Arciniega noticed that “once they (teachers) experienced the benefits of it (mindfulness) they began to buy into why it is an essential part to include in the social and emotional program” at their school. Teachers at the elementary school frequently bring their students outdoors to the garden to take some mindful breath and get some fresh air. They feel it is important to break up the routine of every day. Principal Arciniega shares how she sees students walking independently towards the garden to do some outdoor silent reading and take some deep breaths after having recognized the healing effects the outdoor spot has on their feelings of wellness.

Time Spent Outdoors Helps strengthen One's Mental Wellness

Professor Sigurðardóttir has studied the effects nature can have on ones' wellness in Iceland, concluding there is a positive correlation between an increase in one's wellness after time spent outdoors. Professor Sigurðardóttir shared:

Nature can do so much for mental health especially because it's something relaxing and nurturing. Just being in nature...there's some kind of energy. The mindfulness and

quietness comes to life with the energy, it is in this quietness we can find simplicity and healing.

European countries are being intentional to increase younger generations' time spent in nature. In fact, doctors in Nordic regions are now prescribing 2 hours a week in the woods, Professor Sigurðardóttir shared. This professor has worked closely with other Nordic Schools and educators on understanding the importance of including nature into a classroom. An academic she works with in Norway shares with Professor Sigurðardóttir:

One day a week in Norway kids go into the woods for school. It's important so they can get to know the possibility of going into nature. It's just one way to feel better. They need to learn that. It's important to teach that in school because where else would they learn that? It also creates more compassion for the earth we stand on.

While the mindfulness practitioner, Ms. Segura, does not strictly practice *outdoor* mindfulness with her clients, she shares that the inclusion of nature and the outdoors during these practices offers someone an opportunity to train the mind to be aware of our natural surroundings. She says that the outdoors can help people practice staying connected with what is happening as people go through mundane actions such as talking and breathing. Attaining skills of mindfulness practices with the opportunity to do so outdoors at a younger age offers younger generations the tools to regulate their emotions and find balance among the struggles and the joys of life.

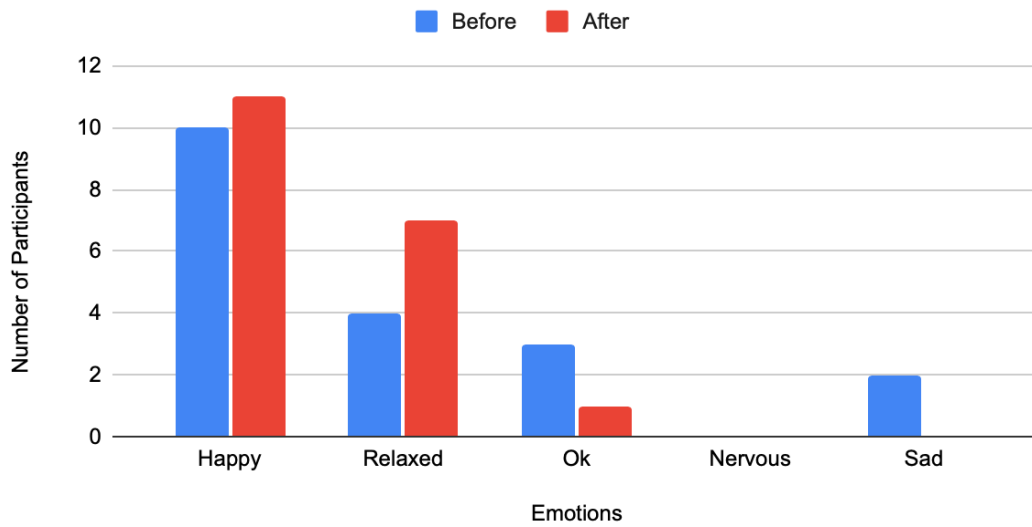
Survey Analysis

During three months, the Urban and Environmental Policy Institute faculty members, multiple teachers and administration at Loreto Street Elementary School, and one of InsightLA's mindfulness practitioners worked to conduct outdoor mindfulness activities in the newly constructed garden space at Loreto Street Elementary.

In addition to the interviews mentioned above, a simple and accessible survey was created by the UEPI professors to gain a greater understanding of how these outdoor mindfulness practices affected the elementary students' feelings of wellness. Conversations helped provide a broader and more in depth understanding of the benefits the outdoors and mindfulness can have on someone's mental health but it was important to provide surveys to the participants at Loreto to *see* if there were numbers supporting this hypothesis. The survey was constructed with measurements of emotion: 1. Happy and Excited 2. Relaxed and Calm 3. Just Okay 4. Nervous and Stressed 5. Sad and Frustrated. These five categories were chosen as they are simple and common emotions elementary kids may experience. For the sake of space on the graphs seen below, only one adjective signifies what category the students put their sticker next to but on the actual board "Happy and Excited" were shown rather than just "Happy" which can be seen below.

Graph 1.

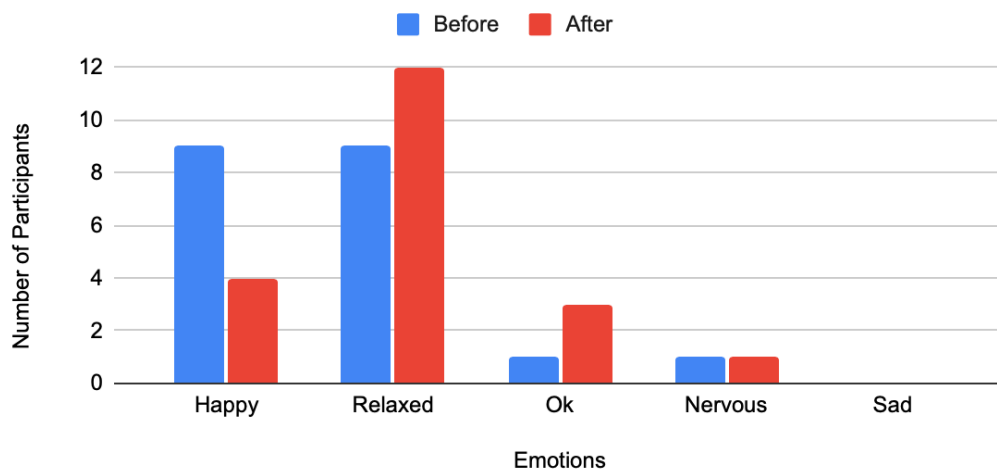
The Effects of Outdoor Mindfulness Activities on 3rd Graders Emotions (Kim's Class)



In Graph 1 there are two students entering the space feeling “sad”, although after the activities there is an increase in “happy” and “relaxed” and zero in “sad”.

Graph 2.

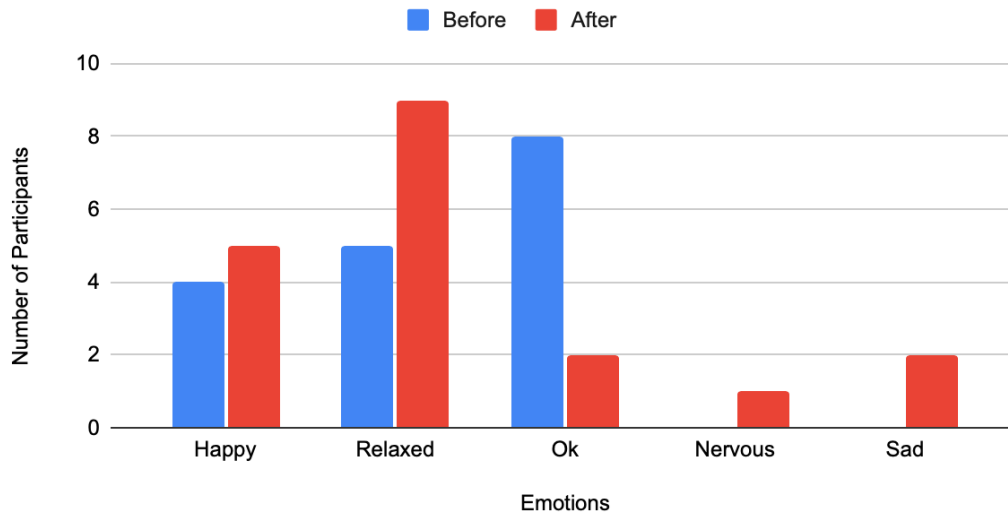
The Effects of Outdoor Mindfulness Activities on 3rd Graders Emotions (Chavaria's Class)



Similarly in Graph 2, the majority of students are feeling “happy” and “relaxed” while the amount of “nervous” students did stay the same.

Graph 3.

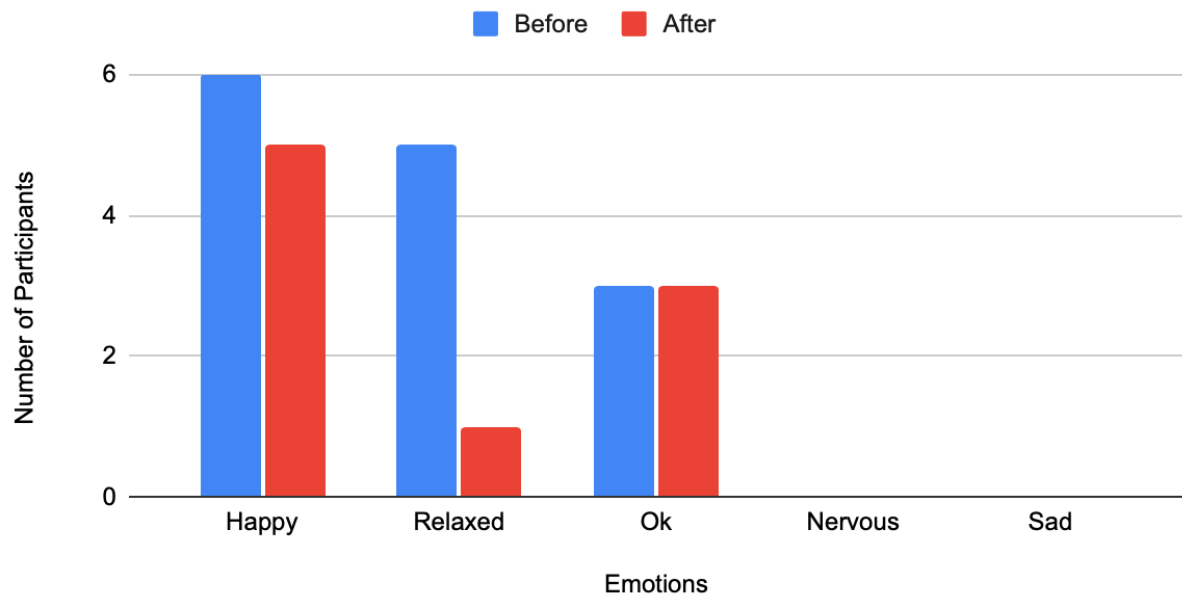
The Effect of Outdoor Mindfulness Activities on 4th Graders Emotions (Bernal's Class)



Graph 3. demonstrated outlying data. While the majority of participants remained feeling “excited” and “relaxed”, participants also reported feeling “nervous” and “sad” *after* participating in the mindfulness activities. This was not anticipated. No other classes participating in this study demonstrated an increase in negative feelings after engaging in the practices and yet these numbers are important to take into account. While mindfulness has been discussed as a positive inclusion into a classroom setting by professionals (mentioned above), it is possible that students can feel an increase in negative emotions during these activities or that other unknown emotions can surface during this time creating nervousness.

Graph 4.

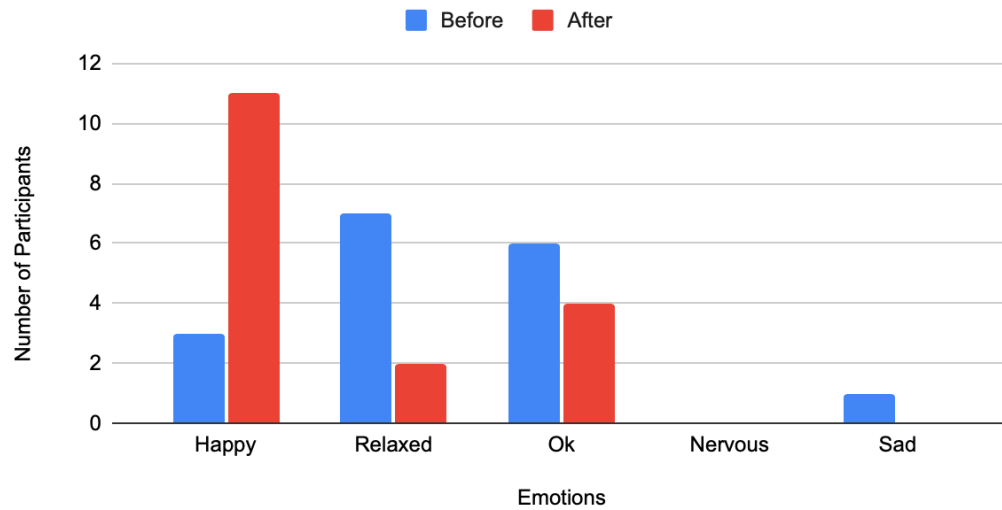
The Effect of Outdoor Mindfulness Activities on 4th Graders Emotions (Escalada's Class)



Graph 4 suggests a sampling error where not all students participated in the survey after the activities. From the information present, students remained feeling positive and did not experience an increase in negative feelings after participating in the outdoor mindfulness activities.

Graph 5.

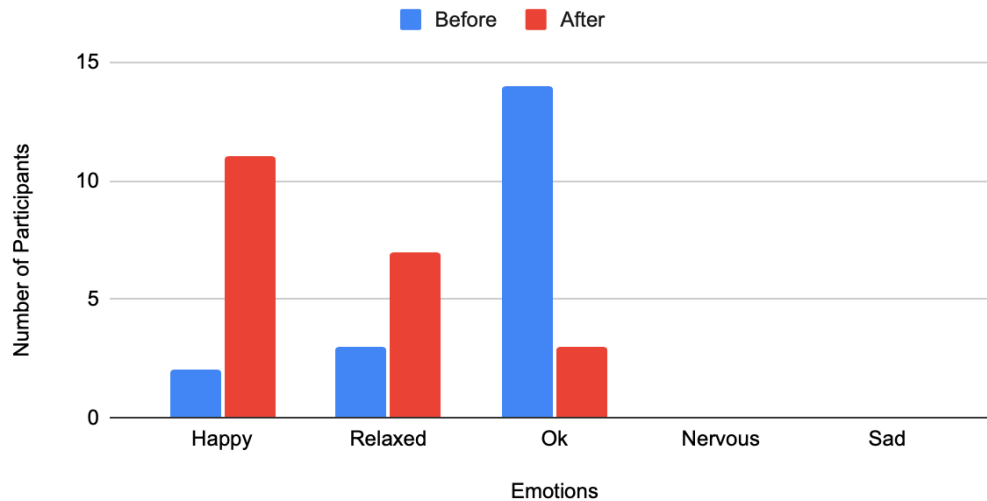
The Effect of Outdoor Mindfulness Activities on 5th Graders Emotions (Chang's Class)



Graph 5 depicts a clear increase in participants' feelings of being “happy” after engaging in the activities. While one student reported feeling “sad” before engaging in the mindfulness practices, there were zero reports of feeling “sad” after the activity.

Graph 6.

The Effect of Outdoor Mindfulness Activities on 5th Graders Emotions (NG's Class)



Lastly, Graph 6 shows a positive effect mindfulness has on students' feelings of being “happy”. While the majority of students initially reported feeling “ok”, the number of students feeling “happy” and “relaxed” increased tremendously after participating in the outdoor mindfulness activities

Overall there is a general trend of participants moving from ‘nervous’ and ‘sad’ emotions to being “Happy”, “Excited”, and/or “Ok” after participating in the outdoor mindfulness activities. Something to be aware of is that a potential decrease in one's feelings of relaxation, for instance, does not mean the participant becomes less relaxed, it means that that participant may have moved from feeling relaxed to feeling happy, as an example. There is no interrelation

between emotions as one cannot see individual movements between emotions and rather the larger group's observation.

From these graphs, one can presume a positive effect the outdoor mindfulness activities have on the students' wellness. Overwhelmingly, students felt “ok” before engaging in the activities which altered their emotions, making them feel “happy” and “relaxed” after participating in the outdoors mindfulness practices. It is important to consider how these data collections may be biased measurements. There is no one clear definition of what being “happy” may mean so because of this, there is a lot of subjectivity within these findings. This goes to say for all of the various emotions included in this study.

Another thing to make note of is that every student is coming from a very different home life and morning routine when met at the mindfulness garden. There are different attributes affecting their moods and emotions in the mindfulness moment which may sway where the participant decides to place their sticker on the “Temperature Board”. Along with this, because there are no individual student observations and instead classroom aggregated data, one cannot make an assertion about one students' emotions in relation to the mindfulness activities. If there was more time with this study, it would be useful to apply these activities to 2nd graders and 1st graders and then repeat these outdoor morning practices many more times to see if there are more consistent measurements.

Discussion

These findings demonstrate the positive impact outdoor mindfulness activities have on elementary students' mental wellness. This is an important finding as mindfulness is an accessible and affordable way to help strengthen the students' feeling of wellness. Published in

January of 2021, a briefing shared that 45% of California's youth had reported struggling with various forms of mental health issues, with a third of them experiencing serious psychological challenges that potentially could interfere with their academic and social functionality⁵⁴. With these staggering numbers, it is crucial creative and useful measures are taken to help students attain healing and tools to navigate the stressors in their lives. The conversations as well as the qualitative survey depicted in this study demonstrate the healing effects outdoor mindfulness activities have on students' mental wellness and show how and why these practices could be used more widely. These findings further cement Kimberly Schonert-Reichl's study from 2015 which introduces how integrating mindfulness programs and activities into school systems has been shown to improve students cognitive control and stress physiology along with an increase of levels of empathy within their student body⁵⁵. This study demonstrates how access to the outdoors and mindfulness practices can help improve younger generations mental health and wellness. It is imperative that educators begin to incorporate these practices into schools as mental health challenges become more widespread among youth.

Policy Recommendations

The proposed recommendations seek to address the gaps in funding and programs for greener school yards and elementary school mindfulness practices in Los Angeles. The gaps include: limited access to green space, narrow understanding of mindfulness, and the lack of

⁵⁴ Torralba, (2021)

⁵⁵ Schonert-Reichl, (2015)

prioritization of self care techniques in schools. All of these gaps are interconnected by the central issue of insubstantial funding in the Los Angeles Unified School District (LAUSD). While grant funding can help include green spaces and mindfulness practices onto *some* school grounds, grant funding is unsustainable and limited, which in turn limits access to green space and mindfulness activities to community organizations and individuals who are awarded these grants. The benefits of outdoor mindfulness practices goes across all genders, races, socioeconomic backgrounds and deserves to be accessible to all elementary school children in LAUSD.

Building Greener Schoolyards in Los Angeles School

Los Angeles needs to incorporate greener schoolyards in their city to enhance students' ability to engage in green and healthy environments through utilizing funds from bond-funded programs. This would also create a safe and natural space for local communities to engage in where there is no park within walking distance. The first proposed solution uses the city of San Francisco's Green Schoolyard Program as an example for Los Angeles to follow. Since 2003, San Francisco Unified School District (SFUSD) has been working on greening schoolyards with bond-funded programs. They have invested more than 19 million dollars into greening schoolyards in San Francisco which has helped develop green schoolyards at 90 schools across the city. The Green Schoolyard Program provides funding primarily to elementary schools to expand or create a "green schoolyard" at their school-site. The goal within this funding is to "help schoolyards become healthier environments that are more climate resilient, provide vibrant places where kids can learn and play, and increase access to green space for the local community, which doesn't have a park within walking distance of every resident yet". LAUSD needs to

incorporate this model into their school district. Apparently LAUSD has had issues complying with Proposition 39 and have experienced lawsuits centered on LAUSD's continued non-fulfillments to share public school space with all public school students in the LAUSD area, despite clear and unequivocal obligations under the law. Since then the LAUSD Bond Citizens Oversight Committee has met more regularly to discuss the distribution of funds, such as the repair of school facilities, but have not mentioned creating greener schoolyards at their schools. A reallocation of the Social Bonds finances can help increase the possibility of creating equitable green schoolyards for elementary schools in LA. The inclusion of green schoolyards would be a community wide project including participation from parents, students, teachers and administrators regarding the design of their green schoolyard. While the yard would provide a space for fresh air and engagement with nature, it also would provide agency to the community as everyone would have a potential voice in the creation of the garden.

Mindfulness Trainings for Educators

The inclusion of mindfulness practices into elementary schools is essential to provide students with accessible tools on how to navigate the challenges that arise in everyday lives. Educators forums where teachers can learn about mindfulness and how to engage students in this practice should be created. Having teachers be able to lead these activities will mitigate outside personnel from coming in. Therefore mindfulness practices can always be accessible from teachers within the community. On July 25, 2019 the California Department of Education introduced the implementation of Staff Training Days, which allow center-based child care contractors to utilize state funding to schedule up to two professional development days. Principal Arciniega has utilized these professional development days to introduce mindfulness to

her educators. Other school administrators should follow suit and use these professional development training days to introduce and educate faculty on mindfulness- both the healing effects of this practice and how to facilitate mindfulness activities on their own. Since the state funding is already present for these days, schools can hire mindfulness educators to help train school teachers on how to implement mindfulness into their classrooms. Alternatively - since school funding is scarce- schools can connect with *Insight in Action* which is under the organization InsightLA, which connects with community outreach programs to partner with other nonprofits and schools to provide free online mindfulness training to vulnerable populations, teachers, caregivers, and first responders. Free and attainable mindfulness education exists and is a great and affordable way to help all schools have access to mindfulness training that they can bring to their classrooms. While school days are incredibly busy, teachers can take 5 minutes during recess and/or as students arrive to practice micro- mindfulness moments.

Bibliography

Schonert-Reichl, K. A., Oberle, E., Lawlor, M. S., Abbott, D., Thomson, K., Oberlander, T. F., & Diamond, A. (2015). Enhancing cognitive and social–emotional development through a simple-to-administer mindfulness-based school program for elementary school children: A randomized controlled trial. *Developmental Psychology, 51*(1), 52-66.

Okafor, J. (2021, September 10). *History of mindfulness & the Mindful Movement*. TRVST. Retrieved September 12, 2021, from

Ortiz, J. A. (2015, September 0). *Bridging the gap: Adapting mindfulness-based stress ...* Retrieved September 12, 2021,

Aram, F., García, E. H., Solgi, E., & Mansournia, S. (2019, April 8). *Urban green space cooling effect in cities*. Heliyon. Retrieved December 3, 2021, from

Dr. Maria Napoli, Paul Rock Krech & Lynn C. Holley (2005) Mindfulness Training for Elementary School Students, *Journal of Applied School Psychology*,

Weare, K. (2012, April). *Evidence for the impact of mindfulness on children and ...* The mindfulness in Schools Project . Retrieved October 29, 2021,

What is MBSR? Institute for mindfulness-based approaches :: What is MBSR? (2021).

Retrieved December 3, 2021, from

Meiklejohn, J., Phillips, C., Freedman, M. L., Griffin, M. L., Biegel, G., Roach, A., Frank, J., Burke, C., Pinger, L., Soloway, G., Isberg, R., Sibinga, E., Grossman, L., & Saltzman, A. (2012, March 14). *Integrating mindfulness training into K-12 education: Fostering the resilience of teachers and students*. Mindfulness. Retrieved October 30, 2021,

Rosamaría Segura. InsightLA Meditation. (2021, August 27). Retrieved December 6, 2021,

Engemann, Kristine, et al. "Residential Green Space in Childhood Is Associated with Lower Risk of Psychiatric Disorders from Adolescence into Adulthood." *PNAS*, National Academy of Sciences, 12 Mar. 2019

Zhang, Y., Mavoa, S., Zhao, J., Raphael, D., & Smith, M. (2020, September 11). *The association between Green Space and adolescents' mental well-being: A systematic review*. International journal of environmental research and public health. Retrieved October 31, 2021

Torralba, E. (2021, January 27). *Nearly half of California adolescents report mental health difficulties*. Search Press Releases | UCLA Center for Health Policy Research. Retrieved December 3, 2021, from

Blueprint for Wellness: Healthy Choices for Lifelong Health. (2014). *Blueprint for Wellness*. Los Angeles Unified school District.

Urban & Environmental Policy Institute. Occidental College. (2021, December 1).

Retrieved December 3, 2021,

Charles, C., Louv, R., Bodner, L., & Guns, B. (2008, January). *Children and nature 2008*.

Children and Nature Network.

Danks, S. G. (2012, November). *Asphalt to ecosystems: Design ideas for schoolyard ...*

New Village Press. Retrieved October 31, 2021, from

Rivkin, M. The Schoolyard Habitat Movement: What It Is and Why Children Need It.

Early Childhood Education Journal 25, 61–66 (1997). <https://doi.org/10.1023/A:1025694100870>

VAN DEN BOSCH, MATILDA ANNERSTEDT, et al. “Development of an Urban Green Space Indicator and the Public Health Rationale.” *Scandinavian Journal of Public Health*, vol. 44, no. 2, Sage Publications, Ltd., 2016, pp. 159–67,

Rossen, Eric, and Katherine C. Cowan. “Improving Mental Health in Schools.” *The Phi Delta Kappan*, vol. 96, no. 4, Phi Delta Kappa International, 2014, pp. 8–13,

Nirmita Panchal, R. K., Kamal, R., Cox, C., Garfield, R., & Chidambaram, P. (2021, May 25). *Mental health and substance use considerations among children during the covid-19 pandemic*. Kaiser Family Foundation. Retrieved November 1, 2021, from

Porter, Gayle, et al. "Collaboration Among School Mental Health A Necessity, Not a Luxury." *Professional School Counseling*, vol. 3, no. 5, American School Counselor Association, 2000, pp. 315–22,

Reback, Randall. "Schools' Mental Health Services and Young Children's Emotions, Behavior, and Learning." *Journal of Policy Analysis and Management*, vol. 29, no. 4, [Wiley, Association for Public Policy Analysis and Management], 2010, pp. 698–725,

"68% Of the World Population Projected to Live in Urban Areas by 2050, Says UN | UN DESA Department of Economic and Social Affairs." *United Nations*, United Nations, 16 May 2018,

Engemann, Kristine, et al. "Residential Green Space in Childhood Is Associated with Lower Risk of Psychiatric Disorders from Adolescence into Adulthood." *PNAS*, National Academy of Sciences, 12 Mar. 2019

Rocchio, L., & Carlowicz, M. (2018). *Green space is good for mental health*. NASA. Retrieved September 12, 2021, from

Dwyer, A. (2019, March 26). *Study finds access to nature in childhood helps mental health*. Landscape News. Retrieved September 12, 2021, from

Okafor, J. (2021, September 10). *History of mindfulness & the Mindful Movement*. TRVST. Retrieved September 12, 2021, from

Zhang, Y., Mavoa, S., Zhao, J., Raphael, D., & Smith, M. (2020, September 11). *The association between Green Space and adolescents' mental well-being: A systematic review*. International journal of environmental research and public health.

Ortiz, J. A. (2015, September 0). *Bridging the gap: Adapting mindfulness-based stress ...* Retrieved September 12, 2021, from

Browning, A., & Romer, N. (2020). *Mindfulness-based practices for schools*. WestEd. <https://californias3.wested.org/wp-content/uploads/Mindfulness-Based-Practices-for-Schools.pdf>

“Mental Health Disorder Statistics.” *Johns Hopkins Medicine*,

World Health Organization. (2020, September 28). *Adolescent mental health*. World Health Organization. Retrieved September 12, 2021, from

Marsh, Sarah, and Amanda Boateng. “Quarter of 14-Year-Old Girls in UK Have Self-Harmed, Report Finds.” *The Guardian*, Guardian News and Media, 28 Aug. 2018,

Study: One in six U.S. children has a mental illness. AAFP Home. (2019, March 18). Retrieved October 22, 2021, from

<https://www.aafp.org/news/health-of-the-public/20190318childmentalillness.html>.

Parker, A., Kupersmidt, J., Mathis, E., Scull, T., & Sims, C. (2013, January 7). *The impact of Mindfulness Education on elementary school students: Evaluation of the master mind program*. Taylor & Francis. Retrieved October 22, 2021,

Los Angeles Unified School District, “Loreto Street Elementary” US News, 2019

American Community Survey. (2017). *2017 CITY OF LOS ANGELES - DEPARTMENT OF CITY PLANNING NORTHEAST LOS ANGELES DEMOGRAPHIC PROFILE*. 2017 CITY OF LOS ANGELES - DEPARTMENT OF CITY PLANNING.