

BALANCE AND BLOOM:
ENCOURAGING SELF
REGULATION AND RESILIENCE
THROUGH YOGA AND
MINDFULNESS

Presentation Overview

Literature Review

Program
Development

Program
Implementation

Discussion

Limitations

Future Implications

Acknowledgments



LITERATURE REVIEW

ADVERSE CHILDHOOD EXPERIENCE STUDY

- **Abuse:** psychological, physical, and sexual
- **Neglect:** physical and emotional
- **Household dysfunction:** parental separation or divorce, violence against mother, and household members who were mentally ill, substance abusers, or incarcerated

Broadening the Definition of Trauma

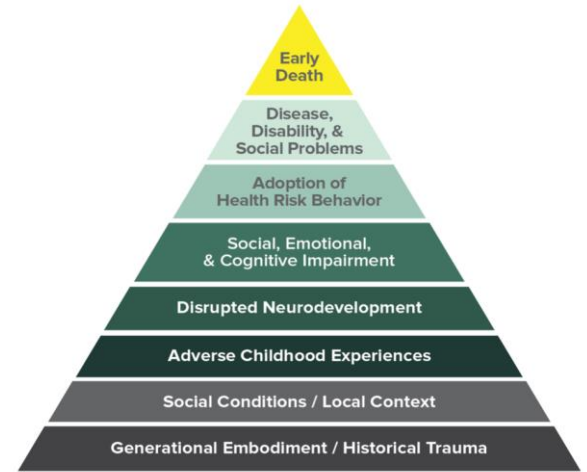
- “Childhood trauma occurs whenever both internal and external resources are inadequate to cope with an external threat”
- Include: Low socioeconomic status, low education, risky family environments, bullying
- Environmental Factors
- Not always an isolated instance
 - Complex or Developmental Trauma
- Individual Perception
- Toxic Stress

Impact on Health

Health issues: High Inflammation levels, cardiovascular disease, gastrointestinal problems, heart attack, diabetes, obesity, chronic lung disease, headaches, autoimmune disease, sleep disturbances, and general poor health. Five out of 10 of the top leading causes of death are associated with ACEs

Psychiatric issues: PTSD, depression, mood disorders, bipolar disorder, anxiety disorders, eating disorders, dissociative disorders, personality disorders, simple and social phobias self-injury and substance abuse, and accelerated cognitive decline

Unhealthy behaviors: smoking, abusing drugs or alcohol, engaging in risky sexual behaviors, living a sedentary lifestyle and having a poor diet



Mechanism by which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

(Brown et al, 2009; Palmier-Claus, Berry, Bucci, Mansell, & Varese, 2016; Danese & McEwen, 2012; Kalmakis, & Chandler, 2015; Merrick et al., 2019; Monnat & Chandler, 2015; Peres, Moreira-Almeida, Nasello, & Koenig, 2007; Shonkoff, 2016; Spinazzola, Rhodes, Emerson, Earle, & Monroe, 2011)

How Does this Impact OTs?

- In the United States, 61% of adults have experiences at least one type of ACE
- In Arizona 70,000 children have more than five ACES
- Arizona ranked 49th/50 in youth mental health
- OTs and other healthcare professionals needs to fill the gap

Impact on Occupational Performance

- Social participation
- Play/leisure
- Education
- ADLs
- Work
- Sleep

Cumulative ACE's associated with higher-level functional limitations in adulthood

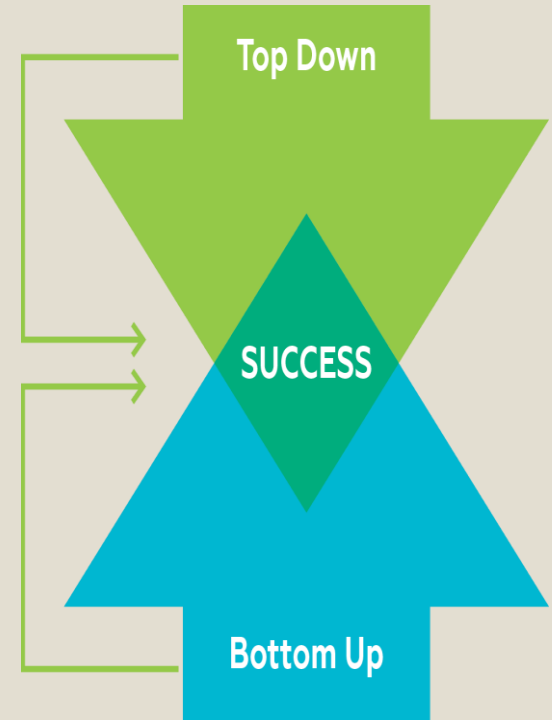
Healing of Trauma

Top-down therapies → centralize on the mind, interpreting how information is perceived.

- regulation of attention, affirmations, intention setting, grounding, meditation, and cognitive restructuring
- decrease psychological stress and SNS activity, while increasing emotional adaptation and improve immune functioning and inflammation

Bottom-up therapies → focus on learning and accepting sensations and feelings that arise in the body.

- breathing exercises, movement practices, sensorimotor therapy, eye movement desensitization and reprocessing
- influence the musculoskeletal, cardiovascular and nervous system, SNS and HPA axis, and subsequently improve immune functioning and emotional well-being



Three Components of Yoga:

Postures(asanas):

- Safe and grounded
- Build self-esteem
- Explore interception

Breathwork(pranayama):

- Elicits the relaxation response

Meditation:

- Decreasing psychological stress, increasing self-esteem, and improving psychological inflexibility
- Decrease ruminations, anxiety, depression, substance abuse, and stress.
- Having mindfulness was linked to increased resilience
- Greater dispositional mindfulness associated with healthier behaviors, better quality of life and fewer health condition

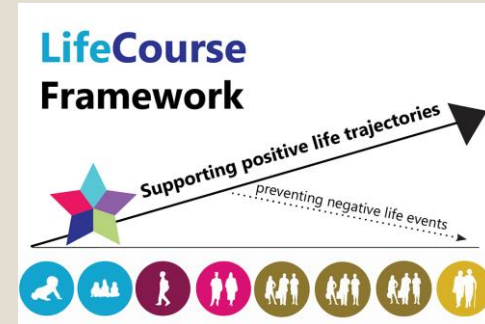
(Cameron et al, 2013; Gard et al., 2014;Ortiz & Sibing 2017
& Martin, 2015;Sullivan et al., 2018)

Yoga & Children

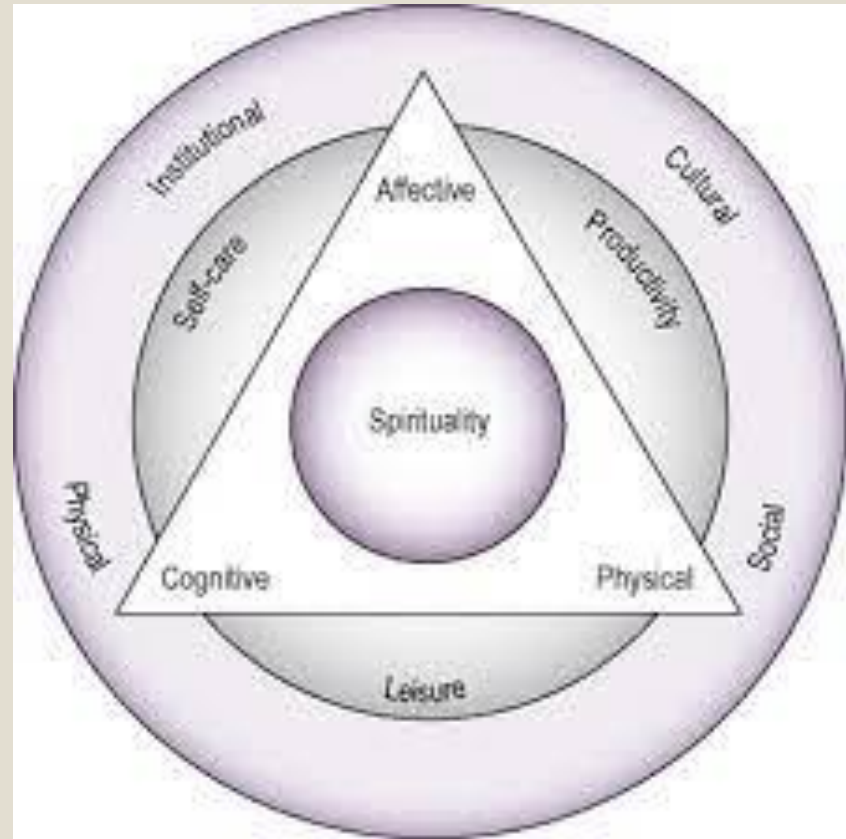
- **Supports development of all children:**
 - motor planning, strength, endurance, flexibility, self-regulation, focus
- **Improves negative behaviors** → screaming, yelling, throwing objects, hitting, as well as being irritable, lethargic, withdrawn or noncompliant
- **OT led program:** potential to reduce anxiety, improve adaptive skills, self-regulation, sensory response and function in daily activities in students
- **Trauma:** Can be used as an adjunct treatment to treat symptoms of trauma and comorbid conditions in many subgroups
 - Fosters resilience and self-efficacy

Theoretical Framework: Life Course Health Development (LCHD)

- **Explains how an individual's life early experiences sets the development health trajectories in the future.**
- Based on four key components:
 - Context (genetics, biological, behavioral, social, and economic factors) throughout the lifespan influences a person's health
 - Health is a developmental and adaptive process that is influenced by an individual's behavioral and physiological systems, and context
 - Health trajectories influenced by protective and risk factors that get implemented into the behavioral and physiological systems
 - especially during critical sensitive periods of development.
 - Timing and sequence of events may impact health development trajectories throughout the lifespan.



CANADIAN MODEL OF OCCUPATIONAL PERFORMANCE AND ENGAGEMENT (CMOP-E)





PROGRAM DEVELOPMENT



a new leaf

HOUSING • HEALTH • COMMUNITY SERVICES

- Served 26,973 individuals last year
- Promotes “growth, hope, change and new beginnings.”
- **La Mesita Apartments**- long-term solution for low-income families
 - Over 55% of La Mesita Apartments residents are children.
 - Consisting of 110 apartments
 - 50 serve households at or below 60% of the area median income.
 - 58 serve households at or below 30% of the area median income
- **La Mesita Homeless Shelter**
 - 16-unit family shelter
 - Only shelter in the East Valley that allows parents to bring their children with them
- **A New Leaf’s East Valley After School** → La Mesita Campus
 - Children aged 5-12

Project Development

- 1 hour yoga and mindfulness session consisting of meditation, yoga and breathing exercises
 - 2-3 days per week
 - Each session had a social-emotional theme
 - Lights dimmed and/or off
- **Program Objectives:**
 - Create a yoga and mindfulness program to promote resilience through improved self awareness and self-regulation for children.
 - Implement a yoga and mindfulness program at A New Leaf afterschool program that results in decreased challenging behaviors in participants.



Modules

Module 1 Introduction and Insight	Week 1	Introductions
	Week 2	-Introducing zones of regulation -Naming emotions
Module 2 Putting Tools in the Tool box	Week 3	Mindful breathing + Movement
	Week 4	Mindful breathing + Movement
Module 3: Getting to Know Yourself	Week 5	Strengths + Weakness What makes you unique
	Week 6	Self-compassion Being Assertive
Module 4: Creating Connection with Others	Week 7	Empathy Perspective Taking
	Week 8	Compassion for self+others
Module 5: Collaboration with others	Week 9	Mindful listening/listening with attention Disagreeing Respectfully
	Week 10	Teamwork
Module 6: Healthy Mindset	Week 11	Gratitude
	Week 12	Choosing Optimism Appreciate Happy Experiences
Program Evaluation	Week 13	Program Evaluation
	Week 14	Program Evaluation

Format of Each Session

Beginning (5): take shoes and socks off, roll out yoga mats

Calming(5): rainstick game

Development(10-15): mini lesson or mindfulness based game

Sequence:

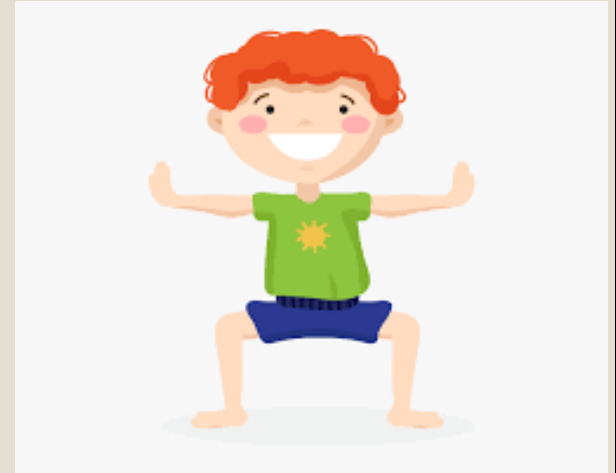
- Introduction (5): breathwork, affirmations, set up theme for the class
- Warm up(5): floor poses to warm up body
- Fire(10): most active poses, fluid/dynamic flow
- Cool down (5) : floor poses to cool down body

Relaxation(5-10): guided meditation/savasana

Plenary(5): open discussion, provide feedback. What did you like?

What went well?

Ending and Exit(5): put on socks and shoes, clean up matt



Sequence Example

- **Introduction:** Three part breath (Breathe in through your belly, through chest, up to your mouth. Exhale through your mouth, release chest, release belly.)
- **Warm up:** Neck stretches, arm rolls, staff pose, butterfly
- **Fire:** sun salutation, cat/cow, warrior sequence
- **Cool down:** seat or lying down twists, bridges, happy baby

Examples of Mindfulness Activities:

Mirror	Dog Relay
<ul style="list-style-type: none">● Partner activity● One leader/ one follower● Look at partner, but no talking● Bring palms together● Lead partners hands up and down/side to side● Slowly pull hands apart & keep mirroring each other● Switch leader and follower	<ul style="list-style-type: none">● Divide class into 3-4 groups● Have teams stand in a line shoulder to shoulder and come into downward dog, creating a tunnel● Say GO and the team members in the back will crawl through the tunnel and come back into downward dog.● After all team members go they will sit in easy pose with their hands up● Repeat 3-4 times

Sample Program Components

Yoga poses:

- Standing: Mountain, Forward Fold, Chair, Warrior 1, Warrior 2, Warrior 3, Tree, Triangle, Goddess, Pyramid, Dancer, Eagle
- Seated: easy poses, bound angle, cat, cow, side bend seated, seated twist, camel, hero, lotus
- Floor: child's pose, plank, cobra, locus, supine twist, corpse, happy baby, figure four, bridge, pigeon, phinx
- Inversions: downward dog, half shoulder stand, bridge, wheel

Breathing techniques: three part breath, box breath, nadi shoda breath, rainbow breath

Meditation techniques: 61 point focus, guided imagery, yoga nidra, mindful moving, sensory based meditations, progressive relaxations.

Program Culture

- Be adaptive to the needs of A New Leaf and participants
- Provide safe and supportive environment
- Encourage personal boundaries
- Use invitational language and cues
- Recognize individuals as experts of their bodies
- Be self-paced
- Encourage meeting feelings with compassion
- Have participants involved in set up of practice
- Allow for restorative restorative pose at anytime
- No hands on assists

Participants

Inclusion criteria:

-All children that attended A New Leaf Summer and Afterschool program.

-Age ranged 5-11 years old

Total of 11
participants
throughout the
program

Summer Program: 9
participants
- 4 participants completed
summer program only

After School Program: 7
participants
-5 from summer program
-2 new participants

Qualitative analysis based on



Staff interviews and
feedback



Participant feedback
and responses



Authors observation



PROGRAM IMPLEMENTATION

JUNE 2021-SEPTEMBER 2021

Themes



Behavioral Developments



Context of Experience



Purposeful Regulation



Behavioral Developments

Initial Behavioral Indicators

Staff Indicated behavioral challenges in the classroom: noncompliance, hitting, pushing difficulty with transitions, not asking for help when needed or impatience when asking, not being able wait a short period of time, difficulty being corrected and redirected, lack of empathy towards others, difficult with peer to peer interaction and limited insight to how their behaviors impact others.

Observation:

- Difficulty modulating volume of voices
- Sensory seeking behaviors
- Hyper independence, withdrawn, reluctant to participate
- Difficulty with transitions after gym

Behavioral Developments

Directly after each session:

- Notable improvement in overall classroom behavior
- Staff commented it takes the children an hour or so to “wind back up again” after yoga
- Transition into following activity without difficulty.

Halfway point and beyond:

- Staff indicated children more responsive to behavioral redirection
- Able to identify how actions impact others
- Emerging self-advocacy skills: Asking for a break or alone time, verbalizing what is bothering them and asking for assistance



Context of Experience

Gaining Experience

Students indicated they had limited exposure to yoga and breath work prior to program

Heavy reliance on modeling:

- Struggled to use verbal cues to navigate between poses
- Poor body awareness, special awareness and motor planning
 - Needed exaggerated modeling to initiate participant participation in breathing exercises

As participants became familiar with poses:

- Spatial awareness and motor planning improved
- Developed ability to engage breath without exaggerated cues

Older participants:
Ability to flow and interpret familiar yoga sequences
Perform breathwork independently for 5 rounds

Initial Impressions

- Group of children would complain they “didn’t like yoga”.... At the same time they would eagerly run and grab their yoga mats, sit in yogi seat, and actively participate in all games, yoga poses, activities
- When asked why?
 - Said they “didn’t like meditating a sleeping”.... This group was typically restless during meditation
 - Expressed previous teachers used meditation for long periods of time
 - Viewed meditation as a punishment
- In response I introduced more engaging mindfulness techniques...
 - Participants liked walking meditation, eating meditation, 61-point body point and shouting meditation
 - Demonstrated less resistance overtime

MINDFULNESS ACTIVITY: Based on Context of Experience

Mindfulness Activity: Eating Through the Senses

Strawberry

- See: red, green, yellow, little seeds, fur, pink, wet, like a triangle,
- Touch: rough, wet, hard, squishy, soft, bumpy
- Smell: nice, fresh, sweet, tart,
- Taste: sour, sweet, juicy
- Hear: quiet, soft crunch, juicy

Banana



- See: white, rough, sticky, yellow, brown in the middle, strings, circular
- Touch: smooth, wet, sticky, round
- Smell: sweet, like fresh bananas
- Taste: chewy, soft, sweet,
- Hear: stickiness, chewing

Popcorn

- See: different shapes, yellow, white, sugary, cracks, kernels
- Touch: bumpy, rough sticky, soft, like a cloud,
- Smell: sweet, good, salt, like kettle corn
- Taste: sweet and salty, caramel
- Hear: crunchy, pops when you bite it

Chocolate

- See: brown, square, dents and words in it
- Touch: hard, but soft if you left it out
- Smell: super sweet, chocolatey
- Taste: super sweet, chocolatey, melts in your mouth
- Hear: a snap, quiet, soft



Purposeful Regulation

Purposeful Regulation Through Routine and Sequencing

Fire:

- Active part, adjusted based on participant fatigue
- Participants more likely to talk, get off mat, disrupt flow of class
- Consistent verbal cues essential to reinforce positive behavior, sustain attention and encourage challenging self

Cool Down:

- Transitioned with ease into cool down
- Needed less frequent verbal cues at this stage
- Demonstrated motivation to use self-calming strategies

Introduction:

- When hearing the rain stick participants would shift from talking, and joking around with each other to sitting “good yogi seat”

Relaxation:

- If meditation was not active, some participants would fall asleep
- One participant typically restless



Participant Feedback Supporting the Use of Purposeful Regulation

“My favorite part of all the yoga classes when we we were allowed to yell and let out all of our anger, and then after I felt a lot better”

“My favorite part of yoga is when we do the fast yoga poses in a row and we get to move a lot quick but still have to breathe.”

“I liked that we get to exercise and then we get to lay down. It makes me feel calm.”

Coregulation

Leo had their eyes open and was fidgeting with their hands, and moving their yoga mat around with their feet during meditation. The person next to them, Jason, was being extremely conscientious of their controlled breathing during this time. When realizing Leo was restless, Jason closed his eyes and began using a more animated and expressive breath while holding their stomach and heart, as has been modeled to them by the instructor previously in response to Leo's movement. After observing this, Leo placed their hands on their heart and stomach, and gradually started syncing their breathing with Jason's until they were both completely relaxed.



Discussion

Self Advocacy

Importance of developing emerging self-advocacy skills:

- Asked for help breaks, space, further explanation or more support when needed
- In order to self-advocate the children needed to be able to identify needs, understand what support they needed, and communicate needs:
- Program enabled individuals to find unique strengths and foster independence
- Self advocacy can be viewed as a protective factor and has significant impact on a person's health and overall quality of life (Schmidt, Faieta & Tanner, 2020)

Use Engaging Meditation Techniques

Use engaging and developmentally appropriate meditation techniques:

- Consider participants prior experiences
- APA Recommendations for meditations by age:
 - **Preschool children:** A few minutes per day.
 - **Gradeschool children:** 3-10 minutes twice a day.
 - **Teens and adults:** 5-45 minutes per day or more based on preference.
- Explore sensory based meditation

Purposeful Regulation

Like other mind-body practices, this program gave participants the opportunity to explore and regulate various states of alertness in a safe environment

Greatest transformation between fire-->cool down-->mediation phases of session

“Widening the window of tolerance”

Sensory Modulation and Regulation

Importance of progressive verbal cueing for calming

Coregulation

- A dynamic and interactive process
 - Enable children to better cope with their thoughts feelings and bodily sensations
 - Our nervous system responses to others... when we feel safe, others feel safe as well
 - Collective coregulation

Importance of Trained OT and Yoga Instruction :

- Strength based, predictable, fun, Fun, FUN!!!!!!
- Create connection
- Framework for development of sequence of class and postures that allowed for exploration of various states of alertness and regulation.
- Physical cueing
- Alignment
- Follow up cues

Trained OT
and Yoga
Instruction

Limitations

No use of standardized assessment tool

Influence of A New Leaf's Program

Inconsistent participant attendance

Conclusion and Future Implications

- Natural connection between yoga and OT
- Yoga can be used a therapeutic intervention
- Trained OTs can provide sensorimotor arousal regulation interventions
 - SMART
- Trauma Release Exercises (TRE)
- Including the whole family

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at A New Leaf



Kids at A New Leaf

Questions?

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