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Mindfulness-Based Interventions for Adolescents With Cancer and Teen Cancer Survivors

Daniela Ramirez-Ibarra
California State University, Monterey Bay

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Running Head: MBIs FOR ADOLESCENTS WITH CANCER

Mindfulness-Based Interventions for Adolescents With Cancer and Teen Cancer Survivors

Daniela Ramirez-Ibarra

A Capstone project for the Bachelor of Arts in Human Development and Family Studies

Introduction

Adolescence is a significant period for identity construction and self development (Jones, Blunda, Biegel, Carlson, Biel, & Wiener., 2013). This critical development period is quickly disrupted for adolescents with cancer. With the challenges of undergoing cancer treatment, come abnormal daily routines and changes to the developing self, which may cause anxiety, depression, and other mental health disorders (Jones et al., 2013). Even after an adolescent survives cancer, he or she may be likely to face chronic adjustment difficulties, cognitive challenges, struggles at school, social deficits, post-traumatic stress disorder (PTSD), anxiety, and depression (Jones et al., 2013). To address the stressful experiences adolescents with cancer and cancer survivors commonly have to cope, I created a day-long activity on stress and mindfulness-based interventions (MBIs) for adolescents receiving services at Jacob's Heart Children's Cancer Support Services in Watsonville, California.

Needs Statement

Many of the adolescents who are diagnosed with cancer as well as cancer survivors experience psychological distress that may evolve into anxiety, depression, and post-traumatic-stress disorder. MBIs have shown positive outcomes in mitigating and alleviating psychological distress in the clinical setting (Jones et al., 2013). Mindfulness may be defined as the practice of introspecting one's current-state thoughts and emotions in a way that the individual may positively accept experiences with self-compassion (Chiodelli, Mello, Jesus, & Andretta, 2018). Although there are limited studies specifically pertaining to adolescents with cancer, past research in the application of MBIs in adults with a cancer diagnosis, and teens with anxiety have suggested that MBIs may serve as a healthy coping mechanism for teen cancer

survivors (Malboeuf-Hurtubise, Achille, Sultan, & Vadnais, 2013). Psychological distress experienced by adolescents affected by cancer may also be due to identity formation and independence disruption, rumination pertaining to cancer, and neurocognitive deficits (Jones et al., 2013).

Adolescence is a developmental period for increasing independence (Jones et al., 2013). When teens are diagnosed with cancer, they are forced to rely heavily on their caretakers. Treatment in the form of chemotherapy, radiation or surgery may last anywhere between months to years (Jones et al., 2013). The disturbance of independence in adolescence may instill emotional effects, so much that some adolescents will dismiss activity restrictions to reassert some independence (Jones et al., 2013). Avoiding medical restrictions often lead to medical complications; hence, health is negatively affected causing additional stress on the adolescent (Jones et al., 2013). During treatment time, an adolescent is also often unable to attend school, thus time with peers is significantly reduced. Relationships with peers are disrupted, and this may cause emotional changes such as depression. Identity formation is an important developmental process which also occurs at adolescence (Becht, Nelemans, Branje, Vollebergh, Koot, Denissen, & Meeus, 2016). Identity formation has been found to be connected with parental values and, is also strongly influenced by peers and school (Betch et al., 2016). With prolonged hospital stays, and isolation from friends and majority of family, identity formation may be disrupted.

Teens who are diagnosed with cancer often ruminate about how cancer will physically affect their bodies internally and externally (Jones et al., 2013). Adolescence is a period in which teens worry deeply about their self-image. Adolescents who are diagnosed with cancer often

ruminate about how cancer may change their appearance, and sexuality, leading to a growing concern for self-image (Jones et al., 2013). Adjustment to a new physical appearance after cancer may be difficult. Having a poor self-image has been linked with decreased psychological health at adolescence (Di Blasi, Cavani, Pavia, Lo Baido, La Grutta, & Schimmenti, 2015). Teen cancer survivors commonly will also ruminate about any possible cancer recurrence even after the period of remission. Frequent thoughts of the possibility of cancer recurrence often is a trigger for anxiety disorder and PTSD (Jones et al., 2013).

Adolescents who undergo chemotherapy may commonly experience neurocognitive deficits. Teen cancer survivors who undergo chemotherapy subsequently experience impairments in their working memory and long-term memory (Wang, Apple, Schroeder, Ryals, Voss, Gittleman, Sweet, Butt, Cella, & Wagner, 2015). Wang, et al. (2015) articulated that cancer survivors who received chemotherapy as treatment had decreased activity in their frontal cortex, among other areas of the brain, when performing tasks which require the use of memory. A decreased short and long-term memory function may result in academic problems. Remembering simple everyday tasks and learning new material may become increasingly difficult for cancer survivors who received chemotherapy in comparison to healthy teens who have never been exposed to chemotherapeutic agents (Wang et al., 2015). Studies have demonstrated that prolonged chemotherapy decreases neurogenesis in the hippocampus, which is part of the limbic system, and is associated with emotion, and memory (Wang et al., 2015). The reduction of hippocampal neurogenesis may result in learning difficulties (Wang et al., 2015). Memory and learning deficits subsequently cause school work to be increasingly difficult, therefore may cause additional stress.

The routine use of MBIs have demonstrated to have positive outcomes in psychological and physical well-being of adults, adolescents and children (Dunning, Griffiths, Kuyken, Crane, Foulkes, Parker, & Dalgleish, 2018). Past research in the application of MBIs in adults with cancer demonstrated that MBIs may be a helpful treatment option to aid with pain management and mitigate symptoms of stress (Malboeuf-Hurtubise, et al., 2016). Dunning, et al. (2018) research review found that the routine use of MBIs enhanced cognitive skills, therefore supported academic and healthy social functioning for children and adolescents ages 6-18. Furthermore, a research study performed on 14 pre-teens and adolescents ages 11-18 with a cancer diagnosis and no mental-health-related diagnosis, reported that different MBI techniques helped increase treatment acceptability for the participants (Malboeuf-Hurtubise, et al., 2016). Past research have provided strong findings that lead me to believe that MBIs may show positive psychological, social, and cognitive outcomes for adolescents with cancer, and teen cancer survivors.

Given that there are many abnormal changes adolescents undergo when treated for cancer, it can be beneficial for teen cancer-survivors to be given MBIs to support and promote psychological well-being. To address psychological distress caused by the cancer-related changes adolescent cancer survivors go through, I have developed a day-long curriculum on MBIs to help teens at Jacob's Heart Children's Cancer Support Services in Watsonville, California cope with stress to prevent the development of depression, anxiety, and PTSD.

Theory Application

Erik Erikson states that the establishment of identity is the predominant psychosocial crisis experienced during adolescence (Steinberg, 2016). Erikson's, fifth stage of psychosocial

development, identity versus identity diffusion, indicates that teens have the intellectual and mental capacity to build their identity through exploration (Steinberg, 2016). Erikson emphasized the importance of identity exploration through an adolescent's interactions with others as the base for overcoming the identity versus identity diffusion crisis. Adolescents who experience cancer lack social interactions, due to long periods of isolation in hospitals and away from their peers. The lack of peer relationships and daily interactions with society, interrupts and limits the identity exploration stage for youth with cancer; thus, teen cancer survivors are at an increased risk of identity diffusion (Jones et al., 2013). Identity diffusion can be described as an underdeveloped sense of self (Steinberg, 2016). Identity diffusion can be triggered by continuous self-consciousness, academic difficulties, problems in forming relationships, and distress over sexuality (Steinberg, 2016). Self-consciousness is common in teen survivors due to rapid physical changes, such as losing hair, or the removal of body parts (Jones et al., 2013). Teen cancer survivors who had chemotherapy as treatment may experience cognitive disturbances and are at an increased risk of academic problems (Jones et al., 2013). Adolescent cancer survivors' long isolation from peers decrease peer relationships, which may cause problems in forming intimate relationships. Lastly, adolescent cancer survivors often ruminate about how their sexuality will be affected by cancer (Jones et al., 2013). Given that sexuality is often how adolescents also explore their identities, this concern may be unaddressed for cancer survivors. Teen cancer survivors may benefit from receiving identity development support during treatment, while in remission, and even after remission, to help them adjust back to their daily routines and peer relations, through the use of healthy mindful coping techniques. I have developed a mindfulness-based intervention curriculum to give teen cancer survivors healthy

coping skills to mitigate psychological distress caused by cancer and foster healthy identity development.

Consideration of Diversity

Jacob's Heart Children's Cancer Support Services provides services in response to referrals from specialty hospitals, such as Lucile Packard Children's Hospital, and UCSF Benioff Children's Hospital. Services provided are for families who reside in Santa Cruz, Monterey, San Benito, and South Santa Clara County. Families are categorized by their level of need. Families who are categorized as level five receive frequent check in calls and receive more groceries as well as financial aid. A child who has been off active treatment will move down to a level four. A child who has been cancer-free for over a year will be level three, and so on.

As of April, 2019, Jacob's Heart serves 26 teens who are considered levels fours and fives. As figure 1 demonstrates, 18 teens are level 5, and 8 are level 4. Of these 26 teens, 8% are from San Benito County, 31% reside in Santa Cruz county, and 61% are in Monterey County (Jacob's Heart, 2019). Out of Jacob's Heart level 4 and 5 teens, 77% identified as Latino, 11% as White, and 12% marked other. 76% of the adolescents come from families of high-financial need. 12% are of medium-financial need, and the remaining 12% are of low-financial need. A family's financial need is categorized depending on extent/severity of risk factors, which include: number of parents working, loss of job/hours due to a child's treatment, seasonality/stability of employment, and late payment of basic living expenses due to money shortage (Jacob's Heart, 2019).

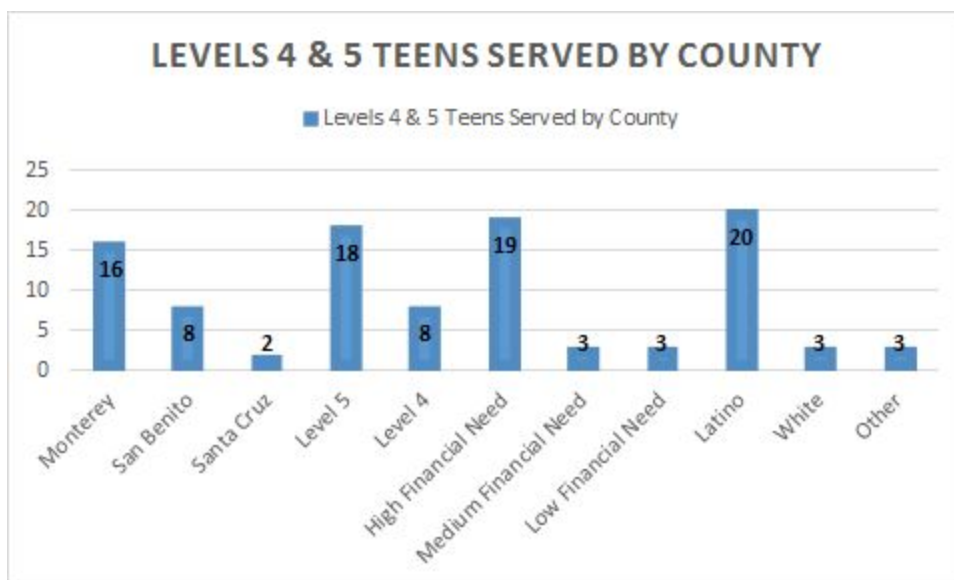


Figure 1. County of residence, level of need, financial-need, and ethnicity distribution of Jacob's Heart 26 adolescents who are categorized as levels 4 and 5 (2019).

My project will be about mindfulness techniques taught to adolescent cancer survivors at Jacob's Heart Children's Cancer Support Services in Watsonville, California. My target sample size of 7 reflects the socioeconomic composition of those of the entire 26 adolescents who have the highest needs (i.e., level fours and fives). However, ethnicity was not fully represented. My 7 participants all identified as Latino/a. Also, my participants have different cultural backgrounds. For example, some parents follow more Western cultural practices, some come from the city in Mexico, and some parents are of Mexican-Indigenous backgrounds. The culture variation may impact a teen's belief in the benefits of mindfulness-based interventions because of their parents' understanding of these types of practices. Lastly, I conducted my lesson in English. All adolescents must speak and write proficient English to participate in the interactive portion of my lesson, fully understand my curriculum content, and to be able to complete pre and post surveys.

Learning Outcomes

I intend to provide one, 60 minute curriculum to teen cancer survivors at Jacob's Heart Children's Cancer Support Services in Watsonville, California.

By the end of the project, participants will:

1. Identify the effects of long-term stress on the body.
2. Describe stressors in their lives.
3. Identify one MBI they would incorporate into their life to cope with stress.

Method

My curriculum was taught after my participants had participated in a brief meditation practice, which was led by Mariela Medina, the Adolescence Family Support Specialist. In the brief meditation, the teens practiced 10 minutes of breathing exercises and meditation. My lesson was held from 10:30 am - 11:30 am on March 23, 2019. Before starting my lesson, I handed out a pre-questionnaire. See Appendix A. Subsequently, I introduced myself again, and explained to the teens why I was there. I informed the participants that I was there to teach them about stress, and introduce mindfulness-based interventions that they may utilize in the future to cope with stress. My introduction included a mindful reminder to the teens that if at anytime during my lesson they felt like stepping out or speaking to someone, we had Lily Rich, our onsite psychologist, and Mariela Medina, our Adolescence Family Support Specialist, available to talk to, as well as a quiet room.

Before presenting I handed out cardstock paper squares where I invited the teens to write what stressed them out the most while in treatment, or after treatment? For our sibling participants, I asked them to write about frequent life stressors relevant to them. See Appendix B.

After the teens were done writing down some of their stressors I invited them to a different room, which was a living room styled environment. All participants sat in couches and beanbags. The goal was for my participants to feel comfortable. I sat in front of them and started presenting my presentation.

A PowerPoint presentation that was used with the purpose to help guide my participants through my lesson, and provide visual aids. See Appendix D. My first slide included a brief schedule of my presentation. The fourth slide gave a brief definition of stress. Slide 5 provided supporting details to help teens understand how the body reacts to the presence of stress. Slides 6-12 had an activity for teens to practice differentiating good stress from bad stress. Slides 13-14 gave a basic description of how the body physiologically reacts to the exposure of long-term stress. Slides 15-16 transitioned onto introducing a definition of what it means to be mindful. Slides 17-18 demonstrated ways in which one may utilize mindfulness-based interventions to cope with stressors, thus potentially preventing anxiety, depression, and PTSD.

After having finished presenting my participants took a brief lunch break back in the symposium-styled room. While my participants ate I informed them that I would be collecting their cardstock paper squares with stressors. I pasted these up on a Chutes and Ladders-styled visual board. I placed the stressors on rainy clouds, which represented the chutes in an original game. See Appendix B. At the end of my presentation I handed out blank cardstock squares and invited my participants to jot down some healthy coping techniques they can incorporate in their life to alleviate stress. I then pasted their answers on the Chutes and Ladders game. I placed the interventions above of the rainbows, which would represent ladders in a traditional Chutes and Ladders game. See Appendix C. The Chutes and Ladders game served as a visual representation

for adolescents to see what helps them and what helped other teens cope with stress. After the board was completed, we had a group discussion about thoughts and feelings on the visual board. Common themes included teens noticing that most were also stressed out by the same experiences such as school, isolation, scancxiety, and worrying about their health. The Chutes and Ladders visual board also gave me a visual idea of what the adolescents might have learned from my project.

At the end of my curriculum, I gave my participants a post survey to analyze what the teens did or did not learn about stress, MBIs, and healthy coping mechanisms. I closed by thanking the participants for participating, and taking the time out of their Saturday to attend. I gave each teen a bag with positivity-centered books, stress jars, essential oil, and thank you cards. These gifts were funded by Jacob's Heart Children's Cancer Support Services.

Results

To measure my results I utilized a seven item pre and post, true or false assessment with one free response. See Appendix A for pre assessment format, and Appendix F for post assessment form. Statements 1-6 I used to try and assess my participants' knowledge on stress. Statement 4 incorporated MBI and stress, it read, "Mindfulness-based interventions can reduce stress." For this statements, all of my participants selected "True" on their pre and post assessments. Statement 7 was also related to MBIs and it read, "Mindfulness practices mean to think of the past and future." Statement 7 was placed in my assessment to help me measure what my participants potentially knew of mindfulness practices prior to my curriculum, and how many learned what it meant to be be mindful after my curriculum. Prior to my curriculum, five of my seven participants marked statement 7 as "True." The pre-results of statement 7 indicated that the

majority of my participants did not know what mindfulness practices are. My pre free response read, "Please describe any coping mechanisms which you've used in the past to deal with stress." My post free response read, "Please describe any new coping mechanisms which you will use in the future to deal with stress." My free response was used to measure if teens would possibly incorporate MBIs into their lives to cope with stress in the future.

My learning outcome 1 was that by the end of my Teen Symposium, participants would gain insight of stress and identify the effects of long-term stress on the body. I believe that this outcome was mostly met. From my presentation on stress, I believe the teens were able to reinforce that prolonged stress causes many adverse effects on the body. From my true or false assessment, statement 1 read, "Too much stress can lead to disease and conditions such as high blood pressure, headaches, fatigue, anxiety, and depression." All of my participants marked this statement as "true," both on their pre and post assessments. My data indicated that my participants already knew that prolonged stress was harmful to the body from prior to my presentation. I do however believe that my presentation on stress was supplementing information on stress which they already knew a bit about prior to my presentation. However, I think learning outcome 1 was only mostly met because I received mixed results when comparing my pre and post results. See Tables 1 and 2. For example, for statement 2 "only unpleasant experiences cause stress," prior to my curriculum all of my participants had marked the statement as false. Post my curriculum, 6 of my participants marked statement 2 as false. Statement 3 read, "part of managing stress is to recognizing its causes and signals." Prior to my curriculum, 5 out of my 7 participants marked statement 3 as false. After my curriculum, 6 out of my 7 participants answered statement 3 correctly. My pre and post results indicated to me that my learning

outcome 1 was mostly met because my participants seem to mostly all have a general understanding of stress, and successfully identified the effects of long-term stress on the body.

My learning outcome 2 was for my participants to describe stressors in their lives. I believe this outcome was met. To measure my participant's ability to describe stressors in their lives, I utilized an interactive Chutes and Ladders-styled activity where my participants were asked to place major stressors in their lives above the "chutes" on the wall. All of my seven participants shared two to three events or things that provoke prolonged stress for them. See Appendix B. My participants identified school, not knowing what to do, time management, catheters, cancer, worrying about their health, sports, learning new things, isolation, scancxiety (waiting for scan results), tests, and being stuck in a room for long periods, as stressors in their lives. After my participants placed their stressors on the Chutes and Ladders board, we looked at what everyone wrote as a group. After we took a couple of minutes to see what stressed everyone out I asked my participants, "Does anyone have any thoughts or comments after seeing our board?" During our discussion I noted a common theme where most found their peer's stressors to also be stressful to them. For example, "scancxiety," and "isolation" were common major stressors within my cancer survivor participants. School was a common stressor for all 7 of my participants. After reading all of their stressors, and hearing my adolescents discuss stressors within themselves, I concluded that my learning outcome 2 had been met.

My learning outcome 3 was for my participants to identify at least one MBI that they would incorporate into their lives to cope with stress. I believe that this learning outcome was partially met. Towards the end of my teen symposium, I asked my participants to jot two to three MBIs that they would use in the future to cope with stress. My participants were asked to place

their answers up on the “ladders” portion of my Chutes and Ladders visual board. See Appendix C. Some of the answers placed up on the Chutes and Ladders-styled visual board included, making tea, find laughter, giving back, mindfulness walks, exercise, connecting with others, telling stories to calm nerves, paint, draw, listen to music, knit, yoga, meditation, alone time, photography, and naps. Although I strongly believe all of the answers provided by my participants are healthy coping techniques, out of these 16 answers, only 3 came from my presentation on stress and MBIs. On my presentation I recommended mindful meditation, body scans, yoga, and mindful breathing techniques as MBIs. My participants said they would incorporate mindful walks, meditation and yoga. For my pre and post assessment, my last statement read, “ Please describe any new coping mechanisms which you will use to cope with stress.” I received many diverse answers, mostly including healthy coping skills similar to those on the Chutes and Ladders visual board. Refer to Tables 1 and 2 below. Because my participants did not all mention MBIs on their answers, I believe my learning outcome 3 was only partially met.

Stress and Mindfulness-Based Interventions Pre Assessment Results	TRUE	FALSE	NUMBER CORRECT
Too much stress can lead to disease and conditions such as high blood pressure, headaches, fatigue, anxiety, and depression.	7		7 of 7
Only unpleasant experiences cause stress		7	7 of 7
Part of managing stress is to recognize its causes and signals	5	2	5 of 7
Mindfulness-based interventions can reduce stress.	7		7 of 7
The only way to effectively deal with stress is to run away from it.		7	7 of 7
There is no way to reduce stress		7	7 of 7
Mindfulness practices mean to think of the past and future.	5	2	5 of 7
Free Response: Please describe any coping mechanisms which you've used in the past to deal with stress	Be alone and play music		
	Punch a punching bag, go on my phone or computer or watch videos or cartoons and or comedians.		
	Listen to music or paint.		
	Exercise		
	Play video games		
	Reading and my phone		
	Draw, or go on walks with music.		

Table 1. Results of my Stress and Mindfulness-Based Interventions pre assessment.

Stress and Mindfulness-Based Interventions Post Assessment Results	TRUE	FALSE	NUMBER CORRECT
Too much stress can lead to disease and conditions such as high blood pressure, headaches, fatigue, anxiety, and depression.	7		7 of 7
Only unpleasant experiences cause stress	1	6	6 of 7
Part of managing stress is to recognize its causes and signals	6	1	6 of 7
Mindfulness-based interventions can reduce stress.	6	1	6 of 7
The only way to effectively deal with stress is to run away from it.		7	7 of 7
There is no way to reduce stress		7	7 of 7
Mindfulness practices mean to think of the past and future.	1	6	6 of 7
Free Response: Please describe any coping mechanisms which you've used in the past to deal with stress	Listen to music and be alone.		
	Be with friends and talk.		
	Yoga, read or even laugh.		
	Play games		
	Mindful walking		
	Yoga and reading		
	Meditation and body scans		

Table 2. Results of my Stress and Mindfulness-Based Interventions post assessment.

Discussion

I believe that my project on stress and MBIs was beneficial, but somewhat unsuccessful. From my pre and post assessment, free response, and visual board measurement tools, I concluded that, for the most part, my seven participants achieved my learning outcomes which I had expected from them to learn. My participants demonstrated the effects of long-term stress on the body, major stressors in their lives, but they only partially identified at least one mindfulness practice which they can use in the future to cope with stress. My participants were all engaged and participated in my project's activity in which they differentiated good stress from bad stress as well as the discussion on stressors and coping techniques.

Although I think the participants found my teen symposium on stress and MBIs to be beneficial, I believe that for future applications, it could be improved. Since MBIs are a daily or ongoing practice, I theorize that a curriculum which is executed throughout multiple days would be more successful. For example, my participants did not all identify at least one MBI which they would use in the future to cope with stress. According to my results, of my seven participants, four included at least one MBI as a coping mechanism they would use in the future. On my visual board activity, out of the 13 responses, only two coping techniques were considered mindfulness practices.

I strongly suspect that if I had taught my participants mindfulness practices continuously over multiple days, my participants would have gained more insight on the topic of MBIs and its applications because they would be able to practice them over time. The most commonly used

forms of MBIs include mindfulness-based stress reduction and mindfulness-based cognitive therapy, which are practiced over an 8-week training (Young, Maj van der Velden, Craske, Pallesen, Fjorback, Roepstorff, & Parsons, 2018). To apply past research implications on MBIs, I believe that executing my project over multiple days will increase my participant's awareness of MBIs, and my participants likelihood of practicing MBIs beyond my project's period.

Lastly, if I could change something else about my approach, I would have started recruiting my participants with more time. During my recruitment phase, I experienced many challenges. From the 26 level four and five adolescents, three of them had passed away, four were at the hospital, and one had an SAT practice exam. Excluding those 7 teens who couldn't attend, I had a pool of 18 teens who either have a cancer diagnosis, or have had a cancer diagnosis. When making my calls to families to invite the teens to my teen symposium, 10 did not answer my phone call, and five said they would call me back with an answer but never did. I believe I failed to take my participant's family's diversity into consideration. For example, many families lived up to 40 minutes away from Jacob's Heart Children's Cancer Support Services in Watsonville, CA. Proximity could have been a major decision-making factor for families who are far from the Jacob's Heart office. Prior to my recruitment phase, I did not consider that parents may not have transportation or working phones. Perhaps, if I had started my recruitment earlier, I could have achieved increasing my number of participants by going on home visits, offering gas cards as incentives, or offer giving rides.

In closing, I do believe my curriculum on stress and the application of MBIs was beneficial because I got to give a brief introduction of MBIs to my participants. Past research studies have demonstrated that MBIs served as healthy coping techniques for adults with cancer,

and teens with anxiety, which suggests that adolescents with cancer and cancer survivors may also benefit from mindfulness practices. Furthermore, to make this a more successful project in the future, I believe that executing the project out through different days, increasing the opportunities to practice MBIs, and increasing participant size can help. However, I am grateful to have had the opportunity to introduce MBIs to my participants from Jacob's Heart Children's Cancer Support Services, and I look forward onto improving my curriculum for future use.

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Appendix A

True/false pre test for learning outcomes

What do you know of stress and mindfulness based interventions?

T F 1. Too much stress can lead to disease and conditions such as high blood pressure, headaches, fatigue, anxiety, and depression.

T F 2. Only unpleasant experiences cause stress

T F 3. Part of managing stress is to recognize its causes and signals

T F 4. Mindfulness-based interventions can reduce stress.

T F 5.. The only way to effectively deal with stress is to run away from it.

T F 6.. There is no way to reduce stress

T F 7. Mindfulness practices mean to think of the past and future.

8. Please describe any coping mechanisms which you've used in the past to deal with stress

Appendix B

Major experienced stressors described by my participants, and placed on Chutes and Ladders visual board.



Appendix C

Participants' answers to the question, "What is an MBI which you would use in the future to cope with stress?"



Appendix E

Presentation on stress & mindfulness-based interventions

Jacob's Heart Teen Symposium

California State University Monterey Bay

Daniela Ramirez-Ibarra



Introduction

Thank you all so much for being here.

Today we will be talking about sensitive topics, if you ever feel the need to step aside, or take a breather, please do so.

Lily, our awesome onsite psychologist will be here at all times if needed.

We are here to support you, and we want you to feel safe, happy, and comfortable.

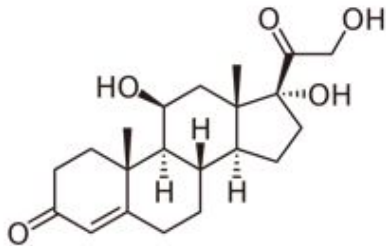
Schedule

1. Introduction
2. What is stress?
3. What does it mean to be mindful? What are mindfulness-based interventions? (MBIs)
4. How can you use it in your life?

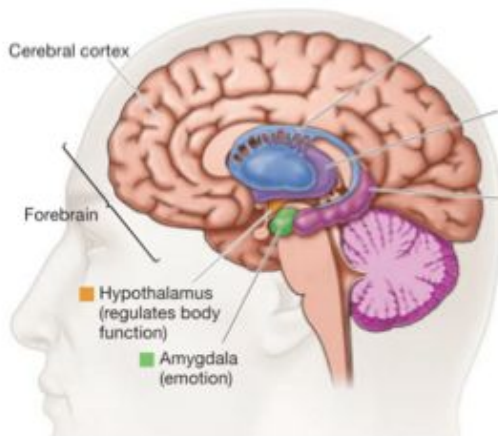
Definition of stress:

Your body's reaction to a challenge or need. In short periods, stress can be positive; for example, when it helps you avoid danger or meet a deadline.

When stress is prolonged, it may harm your health.



Fight or Flight Response



When your body detects stress...

1. your brain will send a message to the **amygdala**.
2. the amygdala then sends an alert signal to the **hypothalamus**.
3. The hypothalamus is like the body's control center, it will tell your body to be ready to **fight or run**.

Activity: Good stress or bad stress?



Riding a roller coaster...



Skydiving



Continuously worrying about school deadlines due to an over-crowded class schedule....



Falling in love...



Constantly being bullied...



First times...



When stress becomes bad...

When stress is continuous, your brain keeps releasing stress hormones



Your muscles tense up, and your heart-rate increases



Staying alert may also cause you to become forgetful, loose sleep, lack energy, &/or experience headaches.

- If your body stays alert it places you at a higher risk for high blood pressure, heart disease, diabetes, obesity, ulcers, depression, anxiety, & skin problems (such as acne).

What does it mean to be mindful?

Experiencing the current-state moment in a nonjudgmental way and by being fully aware of your own thoughts, emotions, and current experience, free of distractions.

Bringing your undivided attention to the present moment.



Mindfulness-based interventions (MBIs)

- Mindfulness is inspired from Buddhist philosophy
- The goal is to help you be in tune with your present emotion, and activity.
- MBIs promotes inner peace and happiness
- MBIs may help you calm your mind and body
- MBIs have clinically shown to reduce stress
- MBIs can help strengthen emotion regulation

Practicing MBIs...

- Mindful meditation
- Body scans
- Yoga
- Breathing techniques



BODY SCAN MEDITATION



Thank you!



Appendix F

True/false post test for learning outcomes

What do you know of stress and mindfulness based interventions?

T F 1. Too much stress can lead to disease and conditions such as high blood pressure, headaches, fatigue, anxiety, and depression.

T F 2. Only unpleasant experiences cause stress

T F 3. Part of managing stress is to recognize its causes and signals

T F 4. Mindfulness-based interventions can reduce stress.

T F 5.. The only way to effectively deal with stress is to run away from it.

T F 6.. There is no way to reduce stress

T F 7. Mindfulness practices mean to think of the past and future.

8. Please describe any new coping mechanisms which you can use to cope with stress
