

Loma Linda University

TheScholarsRepository@LLU: Digital Archive of Research, Scholarship & Creative Works

Loma Linda University Electronic Theses, Dissertations & Projects

9-2022

The Community Resiliency Model in Health Decision-Making

Michelle Ngo

mngo1@students.llu.edu

Follow this and additional works at: <https://scholarsrepository.llu.edu/etd>



Part of the [Health Psychology Commons](#)

Recommended Citation

Ngo, Michelle, "The Community Resiliency Model in Health Decision-Making" (2022). *Loma Linda University Electronic Theses, Dissertations & Projects*. 1638.

<https://scholarsrepository.llu.edu/etd/1638>

This Doctoral Project is brought to you for free and open access by TheScholarsRepository@LLU: Digital Archive of Research, Scholarship & Creative Works. It has been accepted for inclusion in Loma Linda University Electronic Theses, Dissertations & Projects by an authorized administrator of TheScholarsRepository@LLU: Digital Archive of Research, Scholarship & Creative Works. For more information, please contact scholarsrepository@llu.edu.

LOMA LINDA UNIVERSITY
School of Behavioral Health
in conjunction with the
Department of Psychology

The Community Resiliency Model in Health Decision-Making

by

Michelle Ngo

A Project submitted in partial satisfaction of
the requirements for the degree
Doctor of Psychology

September 2022

© 2022

Michelle Ngo
All Rights Reserved

Each person whose signature appears below certifies that this doctoral project in his/her opinion is adequate, in scope and quality, as a doctoral project for the degree Doctor of Psychology.

_____, Chairperson
David Vermeersch, Professor of Psychology

Adam Arechiga, Associate Professor

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to Dr. Adam Arechiga, who introduced me to and guided me along the path of my education in Clinical Psychology. I would also like to my project committee members for their advice and direction. Similarly, I am grateful to the faculty and staff at the Loma Linda University Department of Psychology for the willingness, the kindness, the humor, and the grace that they have so generously shared with me during my time with them.

To my family and friends, your love and support through this long endeavor have carried me through. Special thanks to my parents for giving me the freedom to pursue my dream and showing me what hard work looks like. Thank you for waiting these long years with such love and patience.

CONTENT

Approval Page.....	iii
Acknowledgements.....	iv
Abstract.....	vi
Chapters:	
1. Introduction.....	1
Health Decision Making	4
Health Behavior Change	7
Why Health Behavior Change Fails	8
Decision Making Under Stress	9
Adherence to Medication.....	12
2. Amygdala Hijack	15
3. Community Resilience Model (CRM).....	18
CRM Skills.....	19
Tracking	19
Resourcing	20
Grounding	20
Help Now	21
Shift and Stay.....	21
4. Clinical Implications	22
Future Recommendations	23
References.....	25

ABSTRACT OF THE DOCTORAL PROJECT

The Community Resiliency Model in Health Decision-Making

by

Michelle Ngo

Doctor of Philosophy, Department of Psychology
Loma Linda University, September 2022
Dr. Adam Arechiga, Chairperson

This doctoral project reviews the literature to support the utilization of the Community Resilience Model (CRM) for health-related decision making, such as health behavior change and medication adherence. Research has shown that decision-making under significant stress can lead to making less advantageous choices, as the nervous system becomes dysregulated. The evidence in this literature review suggests that self-regulation using skills in the CRM Model can increase one's ability to effectively making decisions.

CHAPTER ONE

INTRODUCTION

According to the Center for Disease Control (CDC), a chronic illness is defined as a condition that lasts for one year or more that limits activities of daily living or requires ongoing medical attention. Examples of chronic illness include heart disease, cancer, diabetes; these are the leading causes of death and disability in the U.S. and contribute to the increase of the nation's health care costs. Many chronic illnesses are caused by major risk behaviors including tobacco use, poor nutrition, lack of exercise, and excessive alcohol use. Interestingly, these risk factors are modifiable lifestyle behaviors that if changed, could make a significant impact on overall health. Although changing these lifestyle factors could potentially change the course of an illness, we are still unsuccessful in making an impact.

In the U.S., cardiovascular disease account for one in three deaths, totaling up to 859,000 people every year, and costing the health care system roughly \$213.8 billion a year. Main risk factors include high blood pressure, high cholesterol, diabetes, and smoking. Other risk factors include overweight and obesity, prediabetes, unhealthy diet, and insufficient physical activity. CDC's Division for Heart Disease and Stroke Prevention (DHDSP) partners with public health, health care, and private sectors across the country to improve detection, prevention, and control of heart disease and its risk factors. The DHDSP funds different management and prevention activities and organizations across the country to reduce risk factors for heart disease and eliminate health disparities. Another organization called WISEWOMAN funds 21 states, three tribal organizations to reduce heart disease for low-income women ages 40-64. The Paul

Coverdell National Acute Stroke Program funds 9 states to use coordinated systems of care to improve care for patients who have experienced a stroke. The Sodium Reduction in Communities Program funds 8 sites across the country by offering low-sodium options in food being sold to schools, hospitals, and work settings. The organizations listed are only a small portion of what is being done to help reduce the rates of heart disease. However, given these efforts, we are still not able to control the high rates of heart disease.

Diabetes is another leading cause of death in the U.S. It is a serious health condition such that blood sugar levels are higher than normal. More than 30 million people in the U.S. have diabetes and 1 in 4 people don't know that they have it. An individual with prediabetes is also at a higher risk of acquiring type 2 diabetes. Having diabetes in general also increases the risk of heart disease and other serious complications such as kidney failure, blindness, and amputation of a limb. Risk factors for type 2 diabetes include overweight or obesity, having a family member with type 2 diabetes, physical inactivity, and being African American, Hispanic or Latino, American Indian, Alaska Native, Pacific Islander, or Asian American. Though some risk factors cannot be modified, such as age or genetics, all the other risk factors such as exercise and diet can be modified. CDC currently funds many programs that aim to decrease rates of those with diabetes. In April 2018, lifestyle change programs for diabetic patients became a covered service for Medicare, which was the first preventive system that was expanded into the Medicare program and indicated a landmark in public health.

Obesity and chronic illnesses have been a growing issue in America (CDC, 2016). Obesity is one of the biggest drivers of preventable chronic diseases and healthcare costs

in the United States. According to the CDC National Center for Health Statistics (NCHS) data brief, the prevalence of obesity was 39.8% in 2016 and affected 93.3 million adults in the United States. Obesity in adults is defined by having a BMI greater than or equal to 30 and was also found to be associated with other health conditions including heart disease, stroke, type 2 diabetes, and certain types of cancer. The current estimates for America's annual cost for obesity is \$147 billion to \$210 billion per year, accounting for 90% of the nation's annual health care costs are for people with chronic and mental health conditions (CDC, 2017). The issue of chronic illness in America is skyrocketing, and though efforts are made, we have been unsuccessful in significantly reducing those numbers. As compared to other illnesses that may have a shorter duration of symptoms, such as acute infectious diseases, chronic illnesses require much more resources, money, and consistent effort to manage. Conversely, an acute infectious disease is characterized by a rapid onset of the illness, a brief period of symptoms, and resolution within days. For example, the influenza is an acute infectious disease that involves millions of individuals a year and resolved once the virus is eliminated by the host system. Since the period of symptoms is brief, the resources and money involved in managing the illness is not as intense as an individual with a chronic illness, which has a longer period of symptoms that may last a lifetime.

The following document serves to explore and identify potential solutions to manage chronic illness. The role of decision making is an important component to health behavior change and can be affected by physiological responses under stress. The current literature about decision making, stress, and adherence are reviewed.

Health Decision Making

In any given health condition, there are two factors to consider: nonmodifiable and modifiable factors. A nonmodifiable risk factor is simply a predisposed condition that puts an individual at risk for an illness such as one's genetic code. Modifiable risk factors include diet, exercise, and lifestyle choices. During health maintenance, decision making plays an especially important role for modifiable risk factors, such that it can improve or exacerbate an illness. For example, these two components can be seen in obesity. Nonmodifiable risk factors such as genetics can make it difficult for these individuals to lose weight and maintain an appropriate BMI, which can result in negative health consequences as noted before. As such, individuals can take advantage of modifiable risk factors such as diet and exercise to lower their risk of negative health outcomes. Therefore, one of the biggest ways to assist these individuals is to modify lifestyle factors through diet and weight loss programs. However, weight loss programs have indicated low to moderate success long term.

Low to moderate success rate for weight loss programs have been attributed to different factors such as psychological distress during the process. Research has indicated that psychological distress and executive functioning are important barriers to effective weight loss management and maintenance (Raman, Smith, & Phillip, 2013). Psychological factors such as emotional dysregulation, mood, and habitual behaviors interact with executive functioning to impact overeating behaviors of obese individuals. Emotional regulation is being aware of internal sensations (positive, negative, or neutral emotional states), identify the emotion, and effectively cope with the emotion. Obese individuals demonstrated a dysregulated physiological response to intense emotion by increasing their food intake during emotional arousal, also known as emotional eating. In

other words, these individuals regulated their physiological response by using food as a coping mechanism. Emotion regulation has been described as a dynamic system responsive to all emotional experience, consisting of autonomic and controlled processes (Bargh & Williams, 2007).

In efforts to assist obese and overweight individuals modify their lifestyle, weight loss programs aim to help these individuals lose the weight by making healthier lifestyle choices. It is important to keep in mind that obesity is a multi-dimensional disease that consists of somatic and psychological symptoms that can result in chronic distress and poor quality of life (Mannucci et al., 2010). As such, many weight loss programs for obese and overweight individuals struggle with the issue of attrition. A modifiable risk factor is an individual's lifestyle choices. Losing and maintaining weight is more than simply making a decision to change one's eating habits, especially if eating a coping mechanism. Many may enter programs motivated to lose weight, but may drop out or are unsuccessful in maintaining their diet regimen over time.

In an attempt to add a psychological evidence-based treatment, one study incorporated the use of Cognitive Behavioral Therapy (CBT) to examine the influence of descriptive values and psychological profile as predictors of burnout in a weight loss program (Michelini et al., 2014). Participants met criteria for being obese or overweight. They were randomly assigned to either the "diet only" group who received only a diet plan, or the "CBT and diet" group who received 7 sessions of CBT in addition to their diet plan. Attrition was examined at the end of six months. Results suggest that the combination of anxiety, insomnia, severe depression, and somatic symptoms determine a diet program's failure. Additionally, significant stress was the strongest predictor of

dropout for this group. The results suggest that psychological symptoms related to distress greatly impact an individual's success in a health behavior change. The researchers of this study hypothesize that psychological troubles could potentially represent the most important cause of dropout in weight loss programs. Thus, diet programs alone are not sufficient therapy for overweight and obese individuals, as they encounter psychological distress. It may be beneficial for programs to develop psychological treatments in conjunction with diet programs to decrease attrition rates.

Research has also found that stress may play a very important role that affects an individual's success in both losing the weight and maintaining it over time. One study specifically examined the relationship between chronic stress and weight management in African American women, who were well-educated, obese, and reported moderate to high stress levels. This pilot study randomized participants into two groups: one group was a stress management behavioral weight control program and the second group was a traditional behavioral lifestyle program. Researchers hypothesized that the stress management program would have greater program adherence, produce greater weight loss, and have greater reductions in stress levels than the standard behavioral approach. Group one measured participants' level of stress quantitatively using Cohen's PSS self-inventory scale in addition to asking participants to collect saliva in the morning to provide a physiological measure of stress. The saliva collection is collected in a collection tube and then sent to the research lab to measure the cortisol levels. The stress management group were taught different stress management techniques every week including relaxation, behavioral approaches, cognitive strategies, and self-monitor stress management techniques that also included in-class practice. Additionally, they were

asked to provide periodic ratings of their stress level during the day as well as before and after stress management skills practice. The results of this study suggest enhancing a lifestyle intervention with stress management techniques may lead to improved outcomes, as indicated by the “lifestyle + Stress” group resulted in greater weight loss and reduction in salivary cortisol level. Though this intervention was only twelve weeks long and longitudinal results could not be analyzed, this study suggests that stress management is crucial to healthy decision making in making lifestyle changes (Cox et al., 2013). Diet programs alone may be successful in the short-term, but stress reduction and other psychological treatments should also be incorporated to assist in maintaining weight loss in the future.

Health Behavior Change

When individuals are made aware of their physical illness by their primary care physician (PCP), the next step usually is to engage in a health behavior change in order to prevent, reduce, or maintain their illness. Health prevention can be categorized by three types: primary, secondary, and tertiary. Primary prevention is when interventions are implemented before an illness has occurred such as through vaccinations and health education. Secondary prevention involves screening for a specific illness before the onset of its symptoms. This includes measures such as mammography and regular blood pressure testing. Tertiary prevention is aimed at managing a disease once an individual is diagnosed, such as chemotherapy and rehabilitation. Providers have used the Health Belief Model (HBM) to help explain and influence behavior change. This social learning theory was initially developed in the U.S. Public Health Service to explain why people

failed to participate in programs to prevent and detect disease (Hochbaum, 1958; Rosentock, 1960, 1974). This model was later adapted to include people's responses to symptoms (Kirscht, 1974) and their behaviors in response to a diagnosis and their adherence to behavior change. The model examined how "modifying factors" such as demographic variables including age, gender, ethnicity, etc can affect "individual beliefs" including perceived susceptibility, benefits, barriers, and self-efficacy, and how that leads to individual behaviors. Health educators have found it useful to assess different aspects of this model to assist in health behavior change. When it comes to chronic diseases, the focus of an intervention is need on increasing self-efficacy. One avenue in which providers can increase self-efficacy is to provide skills training to the individual. By doing so, individuals can feel more empowered and thus, have more control over their illness. Health educators can also help modify other aspects of individual beliefs, with conjunction of increasing self-efficacy, to assist in successful health behavior change.

Why Health Behavior Change Fails

Chronic illnesses are disorders that persist for long periods of time and affect a person's ability to function normally. After patients are diagnosed, they are now presented with new challenges in which they will need to find new ways of coping to adjust to their current condition. Psychological adjustment to chronic illness can prove to be very difficult (Ridder, Geenen Kuijer, & Middendorp, 2008). Though most patients may eventually reach a state of good psychological adjustment, 30% of patients are unsuccessful (Taylor & Aspinwall, 1996). Self-management is an important aspect of chronic illness management, which includes medication use, lifestyle changes, and long-

term complication prevention (Barlow, Wright, Sheasby, Turner & Hainsworth, 2002). Recent studies have focused on examining the association between poor adjustment and poor self-management. Good adjustment was found to predict increased participation in self-management and vice versa. Patients who maintain good moods seem to be more willing to engage in lifestyle changes. Those who practice self-management behaviors also report improved well-being.

It can be very difficult for many individuals to maintain their health behavior change. There is no one solution that will help people set and attain their goals, however, research has looked at self-regulation on health behavior. Self-regulation begins with adopting a goal that can guide you to reach a certain outcome. A goal is an achievement toward which effort is directed. In the example of a health behavior change, a goal to be healthy could be incorporating exercise throughout the week. However, people may also frequently abandon their goals, which may indicate a failure to self-regulate. When difficulties arise, individuals have the choice to continue their effort or abandoning their goal. When individuals increase their efforts to strive toward a goal, which consists of two self-regulatory challenges: developing a plan to execute behaviors to promote the goal and protecting valued goals from disruption (DeRidder et al., 2013). There are many external and internal factors that can effect achieving one's goals. One can easily be thrown off track if self-regulation is not in place.

Decision Making Under Stress

Researchers believe that examining an individual's judgment and decision making under stress could help us better understand how people reach the choices they make

(Trakofler, Vaught, & Scharf, 2003). The authors of this article suggest that the ability to cope with stress depends on an individual's perception of the event. They also suggest that under stress, people may fail to gather correct information, which prevents them from making appropriate responses. One of the key conclusions was that stress narrows one's focus. Under time pressure, individuals may adopt simpler modes of information processing and may potentially negate alternatives related to the situation.

Though decision making under stress can prove to be difficult, acute stress can be even more difficult. Decision making typically includes a cost-benefit analysis of the situation. This cost-benefit decision making is a form of cognition mediated partly by the prefrontal cortex (PFC) that may be sensitive to acute stress. Earlier research has examined highly skilled pilots who fell victim to mental errors and poor decision making during stressful situations (Broadbent, 1971). Current research has found that during acute stress, flexible decision making that is usually dependent on normal PFC functioning is impaired (Arnsten, 1998), which causes an organism to rely more on habitual behavior. This theory can be generalized to a population such as obese patients participating in a weight loss intervention in hopes to modify lifestyle behavior. If an individual uses food or eating as a coping mechanism, this can get in the way of successful weight loss, therefore, this individual can no longer use this habitual coping of food as a form of emotion regulation. Thus, when a stressful event triggers occurs, an individual's PFC may be impaired such that they will result in utilizing their habitual behavior of coping with food. Acute stress may interfere with decision making in that it alters the manner in which individuals evaluate the relative costs and benefits associated with different options, potentially leading them to make more disadvantageous choices

(Shafiei et al., 2012). In a research study looking at decision making in rats, results indicate that the stress response reinforces the selection of less physically demanding options, potentially in an attempt to increase energy conservation.

Another study examined prolonged effects of acute stress on decision-making under risk. Participants were divided into a stress or control group and was asked to perform a decision-making task two hours after no exposure of the stressor. The results indicated that acute stress has prolonged influences on decision-making even hours after exposure to a stressor (Yamakawa et al., 2016).

When we need to make decisions, we must balance between reason and emotion. Since decision making is a cognitive process, many believe that reason and emotion are separate parts during decision-making. Studies in neuroscience have challenged the idea that emotions and cognitive functions are separate in the brain. Research from Damasio has shown that the “newer” parts of the brain, such as our PFC, do not differ from the “reptilian”, or more primitive parts of our brain (Damasio, 1994). He also found that input from subcortical emotional systems into cognitive systems are stronger than input from the cognitive system to the emotional ones, suggesting a primacy for emotional processing over cognitive processing. Finally, he found that structures associated with the limbic system, or the “emotion system”, such as the hippocampus, have been shown to be actively involved in cognitive processes as well. Additionally, structures associated with cognitive processes, such as the PFC, have been shown to be actively involved in processing emotional information. Results from Damasio’s research suggests that reason and emotion are almost inseparable and work together to make decisions. In fact, individuals who have damage to the emotion information processing parts of their brain

showed impaired learning and decision making, despite having attention, memory, and reasoning capabilities still intact (Pessoa, 2008). Therefore, emotions play a crucial part in our functioning. Not only does emotion and cognition interact in the brain, but areas are often integrated in that they jointly contribute to behavior in an attempt to soothe the nervous system (Damasio, 1997).

Cognitive science research suggests that subjective emotions can play a role in shaping cognitive processes including perception, memory, and attention. Since attention and perception are the first stages of information processing, factors that can affect these will also affect subsequent stages of processing such as memory and reasoning. For example, an individual's interpretation of an event may reflect the individual's current emotional state. When an individual has anxiety, an ambiguous stimulus, such as social situations and facial expressions, may be perceived as threatening (Blanchette & Richards, 2003) (Nabi, 2003). Thus, it proves difficult to disengage attention from the emotional qualities of a stimulus. Research indicates that emotion is processed rapidly and automatically in the brain. Early detection of emotion can rapidly signal the presence or absence of a threat, thus cueing changes in cognitive strategies to produce a response.

Adherence to Medication

Another difficult health related decision-making is medication adherence. Although patients may know that medication is beneficial in alleviating their symptoms, many still have problems complying with medication. Adherence to prescribed medications is associated with improved clinical outcomes, especially for individuals with a chronic illness. On the other hand, nonadherence is associated with higher rates of

hospital readmissions, negative health outcomes, increased morbidity, and increased health care costs. According to the CDC, health care costs associated with nonadherence is approximately \$100-\$300 billion annually. As previously mentioned, stress can play a significant role in decision-making and indirectly affect an individual's adherence to medication, thus worsening their illness. A longitudinal study conducted by Sherbourne and colleagues examined patients with chronic illnesses including hypertension, diabetes, and heart disease to identify antecedents related to medical adherence. The researchers found that nonadherence in the beginning of the study was the strongest predictor for nonadherence two years later. Patients who were distressed about their health used avoidant coping strategies. Those who were younger and relied on avoidant coping were less likely follow their doctor's specific instructions (Sherbourne, Hays, Ordway, DiMatteo, & Kravitz, 1992). These individuals, like many other, struggle with making the decision to adhere to their prescribed medication in ways like avoidance. Patients can highly benefit from a quick and easy psychological intervention that would assist in regulating their nervous system so that they can make better decisions for their health.

Though it is very important to consider stress management for patients, it is also crucial to consider the potential stress that physicians face given the nature of their environment and duties. Physicians often experience work-related stress such as burnout, depression, and impaired professional performance (Wallace et al., 2009). These types of stress may compromise performance including medication errors and reduced attentiveness toward their patients. Thus, stress management is crucial for these providers to regulate themselves so that better decisions can be made and they can function at the most optimal level. Stress management is characterized as a range of processes that aim

to mitigate aspects of psychobiology of stress (Lemaire, Wallace, Lewin, Grood, & Schaefer, 2011). Physician wellness has been linked to quality of patient care, which may in turn have an effect on the patient-physician relationship and other health outcomes such as medical adherence (Wallace, Lemaire, & Ghali, 2009). To assess for stress management in physicians, one study utilized a biofeedback-based stress management device to help physicians track their physiological stress. The device is the size of a deck of cards and is light-weight and battery-operated. It is able to calculate changes in heart rate to produce a measure of physiological coherence, which is comprised of rhythmic breathing coupled with active self-generated positive emotions, such as appreciation for something or someone remembering a special place. Results for this study found a statistically significant decline in mean stress levels for physicians in the intervention group. Additionally, when the control group was exposed to the intervention during the extension period, results also showed a significant decrease in measured stress. This study illustrated the effectiveness of using a portable biofeedback device that tracks heart rate and self-generated positive emotion. This self-management tool is similar to CRM in its aspects of Tracking, Resourcing, and Grounding skills. The benefit of using CRM is that it is a set of wellness skills that one can access to self-regulate and stress management without the use of a device, making these skills easily accessible to all individuals, regardless of their education level.

CHAPTER TWO

AMYGDALA HIJACK

The limbic system is considered to be one of the most primitive region of the brain and is related to the basic emotions of our system. It's also considered as the animal brain in our thinking box. The amygdala, thalamus, hippocampus, fornix, and bodies form this system in our brain. The limbic system is unable to differentiate between physical and emotional threats, so if someone puts us under emotional stress, the amygdala can react before the involvement of the cortex. The cortex is associated with logical reasoning and is what differentiates humans from other animals. This structure allows us to think, decide, and take logical decisions to avoid unfavorable disputes. The term 'Amygdala Hijack' was first coined by Daniel Goleman to represent what happens when our logical brain gets impaired due to emotional outbursts caused by the amygdala (Goleman, 1998). When a stressful stimulus occurs, the signals are directed to the thalamus, which acts as the 'Traffic Police' such that it bypasses the signal directly to the amygdala instead of sending it straight to the cortex. Sending the signal to the cortex would take up too much time in the face of a threat, so as a survival mechanism, our body sends the signal to the amygdala for instant action. However, the immediate result of the amygdala hijack is decreased working memory and a flood of hormones that may create unsteady emotions (Kulkarni, 2014). Thus, unsteady emotions and decreased working memory can have drastic effects on an individual's decision-making in a given moment.

Research has shown that stress affects our body and brain, and over time can produce a wear and tear on the system, even altering brain structure and function. The

body reacts to stress in many ways in efforts to create homeostasis. Stress hormones, autonomic nervous system, metabolic system, and immune system all work together to mediate the effects of stress on the body. There are three primary brain regions that are most affected by stress are the hippocampus, amygdala, and prefrontal cortex (PFC). When an individual undergoes stress, the body tries to recover through these mechanisms. Thus, resiliency in the face of stress is the key component of a healthy brain. Though the effects of stress on the brain cannot be completely reversed, it can adapt. Resilience is an active process of adaptive plasticity (McEwen et al., 2015). Resilience allows the individual to return to a proper level of functioning.

With the large body of research that illustrates the consequences of stress on health-related decision-making, health behavior change programs have often utilized a top down processing, typically involving a health education component in which patients are given the information and taught how to modify their lifestyle. However, as mentioned in previous studies, this has not been effective in the long run due to psychological distress that activates the hedonic pleasure drive in the limbic system, which if dysregulated, needs to be soothed. When this happens, individuals may not be competent in making effective and healthy decisions beneficial to their health. Individuals will resort to coping mechanisms such as avoidance, eating, drinking, and more. CRM is unique not only because it is a biologically-based, but also for its bottom-up approach. CRM is beneficial for in-the-moment decisions where an individual has to decide whether they will make the rational choice to benefit their health or reach for a coping mechanism that they are most likely familiar with and have used over the course of their life. This intervention teaches individuals to be aware of their physiological

sensations of distress, regulate their nervous system, and then make a decision. CRM allows individuals to have an opportunity to make those decisions rather than defaulting to a coping mechanism. It can be likened Marsha Linehan's model of the Wise Mind in DBT, which incorporates the use the Emotion Mind and Logical Mind to reach the state of Wise Mind. Under distress, the emotion mind dominates. The use of CRM can help an individual soothe the nervous system so that they can also take into account their Logical Mind in order to have the opportunity to be in Wise Mind and make an effective decision. Each of the six CRM skills can be used individually but can also be used in conjunction with each other to more effectively manage distress.

CHAPTER THREE

COMMUNITY RESILIENCE MODEL (CRM)

The Community Resilience Model (CRM) is a set of wellness skills that utilizes sensory awareness to aid in emotion regulation, created by Elaine Miller-Karas (Miller-Karas, 2015). The purpose of this model is to empower the individual and increase self-efficacy through skills training. These skills are not only beneficial for these individuals, but it can also be taught to other members in the community to overcome trauma and other hardships. The model includes five skills: Tracking, Resourcing, Grounding, Gesturing, and Help Now. The purpose of these skills is to help an individual self-regulate and stay within the Resilient Zone. This zone represents a state of well-being where one can function without getting bumped into the High or Low Zone. The High Zone is when an one gets too angry, manic, or upset to the point where they might say or do something they regret. Conversely, the Low Zone is when one falls into a depressive-live state that may include low energy and lack of motivation to do things. The Resilient Zone represents the zone where one is able to function as their best self while facing obstacles. An important part to note about the Resilient Zone is that it can be deepened as one learns how to better self-regulate.

Whereas CRM can be generally taught to laymen or professionals, the Trauma Resiliency Model (TRM) is a set of therapeutic skills which encompass the five foundational skills of CRM, but also includes four additional ones. However, the purpose remains the same: the model is used to increase sensory awareness and emotion regulation (Grabbe and Miller-Karas, 2018). The effectiveness and use of TRM was

evaluated. The article found that the effectiveness of TRM lies in the focus of internal sensations to alter trauma responses. Similarly in CRM, the wellness skills can be used for patients with trauma, physical illness, chronic illness, etc to regulate themselves, thus regulating their symptoms.

CRM Skills

Tracking

Tracking means noticing what's happening in your body. Most of us do not know how to describe sensations, but it is very helpful to learn the language of sensation because that's how we "talk" to the nervous system. Tracking helps you to learn how to bring balance back into your nervous system by managing inner sensations.

At first you may only be aware of uncomfortable sensations. But there are usually places in your body that are not in distress or are in less distress, or even feel good. To get back into your Resilient Zone, it is necessary to pay attention to places of more comfort in your body. This will help you put the brake on if the accelerator is stuck on high. Paying attention means you notice the sensations inside as you focus on those parts of your body that are less distressed, neutral, or positive (calm and more relaxed).

If you have many symptoms because you have been bumped out of your resilient zone, your own body can feel like the enemy. Tracking inner sensations, even ones that are comfortable, can be difficult at first. As you get more experience in tracking, finding inner sensations of comfort will get easier and easier for you.

The 'language of sensation' refers to using words that help you describe what you are noticing inside. Sensations tell us what is happening within the nervous system.

Sensation words like warm, cold, tight, tingly...and sensation words that you create to describe what you are noticing.

Resourcing

A resource can be anything that helps a person feel better. It can be a characteristic the person likes about him/herself, a positive memory, a person, place, animal, spiritual guide, or anything that provides joy, peace, or calm. The resource is simply brought to mind and at least three details about the resource are remembered and then one's attention is directed to the sensations that are pleasant or neutral on the inside.

As you describe the resource, bring your attention to what is happening inside. Where in your body do you feel sensations that are pleasing or neutral to you about your resource? Notice what is happening inside as you think about the resource and notice the sensations that are pleasant to you and/or neutral. Know that you can return to this resource anything you are bumped out of your Resilient Zone or you can select a new resource and repeat the exercise.

Grounding

Grounding refers to the relationship between a person's body and the present moment. When we are anxious, we are often focused on something that has happened in our past or something that might happen in the future. However, by bringing our attention to the present moment, we can communicate a greater sense of safety to our nervous system. Grounding can be accomplished with the hands, feet, or entire body.

Help Now

This skill refers to activities that can reduce activation in the moment right now. Examples include drinking a glass of water, noticing one's surroundings, or pushing against a wall. These activities allow the attention to be brought back to the present moment.

This skill refers to activities that can reduce activation in the moment right now. Examples include drinking a glass of water, noticing one's surroundings, or pushing against a wall. These activities allow the attention to be brought back to the present moment.

Shift and Stay

This skill involves shifting your attention from something unpleasant or distressing that can include thoughts, feelings, or sensations to a place in the body that is neutral or pleasant and staying with those sensations. You shift your attention to a place inside that feels neutral or more comfortable, a resource, grounding, or a self-soothing gesture.

CHAPTER FOUR

CLINICAL IMPLICATIONS

Chronic illnesses such as cardiovascular disease and diabetes are some of the leading causes of death and biggest drivers of healthcare costs in the United States. In order to tackle this issue, we must consider the modifiable and nonmodifiable risk factors associated with chronic illnesses. Modifiable risk factors are aspects of one's life that can be changed such as diet and exercise, whereas nonmodifiable risk factors cannot be changed, such as one's genetics. Since not much can be changed in nonmodifiable risk factors, many programs target modifiable risk factors such as diet and exercise. Interestingly, chronic illnesses such as Type 2 diabetes and obesity, have the highest rates of morbidity that are typically caused by modifiable risk factors. This suggests that many chronic illnesses are almost completely modifiable, yet even knowing so, individuals have difficulty managing the onset and progression of their illness.

The issue with chronic illness is that it is ongoing, therefore, the symptoms will persist for longer periods of time, unlike acute infectious diseases that can be resolved in a much shorter time period. Thus, health-related decision making plays a crucial role in managing one's illness. Research has shown that decision-making under stress has been proven to be risky because the brain and body is not regulated in the time of stress. This makes decision-making especially important when it comes to chronic illness because the decisions can affect the progression of an illness. Under stress, the nervous system becomes activated and the individual is not given the opportunity to make good health decisions. The term 'amygdala hijack' can be used to describe this phenomenon; stimulus

information is no longer sent to the PFC for executive function processing, but rather sent straight to the amygdala in order to make a quick decision. This can be faulty and cause individuals to make wrong decisions. When making decisions related to health behaviors, this same process is occurring. When the amygdala hijack happens, individuals are robbed of the opportunity to make a decision. Instead, they are automatically making those decisions, which can be detrimental to their health status. One way to avoid this phenomenon is to avoid the amygdala hijack and regulate the nervous system through conscious effort. One psychological intervention that can be beneficial is the Community Resiliency Model (CRM), which is a biologically based intervention aimed at regulating the nervous system.

CRM is a set of six wellness skills that any individual can learn and use under times of stress. It is a unique biological approach that aims to soothe the nervous system when an individual becomes activated. Each of the skills in CRM are different approaches that an individual can take to regulate their nervous system back into a resilient zone so that they can make better health decisions. The nervous system gives an individual the opportunity to make those decisions once they are no longer in a distressed state.

Future Recommendations

Future studies should utilize CRM in conjunction with a health behavior change program in order to assist patients in managing their stress throughout the program as it is not advised to use CRM alone in an intervention. As the skills are being taught to the members of the program, ample time should be allotted for practice, as it can further

assist patients with understanding and using the skills. Other studies should also examine the effectiveness of CRM as a brief intervention in hospital or other health settings to assist patients with health-related decision-making. Since CRM is a relatively new psychological intervention, future studies should work towards assessing the effectiveness on CRM in different settings and work towards the process of making it an evidence-based approach.

REFERENCES

- Adult Obesity Facts | Overweight & Obesity | CDC. (n.d.). Retrieved from <https://www.cdc.gov/obesity/data/adult.html>
- Arnsten AFT (1998). The biology of feeling frazzled. *Science* 280: 1711–1712.
- Barlow J, Wright C, Sheasby J, Turner A, Hainsworth J. Self-management approaches for people with chronic conditions: a review. *Patient Educ Couns* 2002; **48**: 177–87.
- Blanchette, I., & Richards, A. (2003). Anxiety and the interpretation of ambiguous information: Beyond the emotion-congruent effect. *Journal of Experimental Psychology: General*, 132(2), 294–309.
- Bremner, J. D. (1999). Does stress damage the brain?. *Biological psychiatry*, 45(7), 797-805.
- Broadbent D (1971). *Decision and Stress*. Academic: London.
- Buttorff C, Ruder T, Bauman M. *Multiple Chronic Conditions in the United States Cdc-pdf– 392 KB*|External. Santa Monica, CA: Rand Corp.; 2017.
- Cawley J and Meyerhoefer C. The Medical Care Costs of Obesity: An Instrumental Variables Approach. *Journal of Health Economics*, 31(1): 219-230, 2012; And Finkelstein, Trogon, Cohen, et al. Annual Medical Spending Attributable to Obesity. *Health Affairs*, 2009.
- Center for Medicare & Medicaid Services. National Health Expenditure Data for 2016-Highlights Cdc-pdf[PDF – 74 KB] External.
- Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of affective disorders*, 82(2), 217-225.
- Cox, T. L., Krukowski, R., Love, S. J., Eddings, K., DiCarlo, M., Chang, J. Y., ... & West, D. S. (2013). Stress management–augmented behavioral weight loss intervention for African American women: a pilot, randomized controlled trial. *Health Education Behavior*, 40(1), 78-87.
- Damasio, A. R. (1994). *Descartes’ error: Emotion, reason, and the human brain*. New York: Avon Books.
- Damasio, A. R. (1997). Towards a neuropathology of emotion and mood. *Nature*, 386, 769–770.

- de Ridder, D. T., & de Wit, J. B. F. (Eds.). (2006). *Self-regulation in health behavior*. John Wiley & Sons.
- Dong, M., Giles, W. H., Felitti, V. J., Dube, S. R., Williams, J. E., Chapman, D. P., & Anda, R. F. (2004). Insights into causal pathways for ischemic heart disease: adverse childhood experiences study. *Circulation*, *110*(13), 1761-1766.
- E. Stice, "Risk and maintenance factors for eating pathology: a meta-analytic review," *Psychological Bulletin*, vol. 128, no. 5, pp. 825-848, 2002.
- Etkin, A., Egner, T., Peraza, D.M., Kandel, E.R., & Hirsch, J. 2006. "Resolving Emotional Conflict: A Role for the Rostral Anterior Cingulate Cortex in Modulating Activity in the Amygdala." *Neuron* 51(6): 871–882.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American journal of preventive medicine*, *14*(4), 245-258.
- Goleman, D. Working with Emotional Intelligence. New York: Bantam Books, 1998.
- Hariri, A.R., Bookheimer, S.Y., & Mazziotta, J.C. 2000. "Modulating Emotional Responses: Effects of a Neocortical Network on the Limbic System." *NeuroReport* 11: 43–48.
- Hariri, A.R., Mattay, V.S., Tessitore, A., Fera, F., & Weinberger, D.R. 2003. "Neocortical Modulation of the Amygdala Response to Fearful Stimulation." *Biological Psychiatry* 53: 494–501.
- J. A. Bargh and L. E. Williams, "The case for nonconscious emotion regulation," in *Handbook of Emotion Regulation*, J. J. Gross, Ed., pp. 429–445, Guilford Press, New York, NY, USA, 2007.
- Kanasky, B.F. 2014. "Debunking and Redefining the Plaintiff Reptile Theory." *For The Defense* 76 (April): 14-22.
- Kulkarni, M. (2014). Amygdala: A Beast to Tame.
- Loberg, M., & Parker, A. (2018). Preventing Amygdala Hijack During Witness Testimony. Mannucci, E., Petroni, M. L., Villanova, N., Rotella, C. M., Apolone, G., Marchesini, G., & QUOVADIS Study Group. (2010). Clinical and psychological correlates of health-related quality of life in obese patients. *Health and quality of life outcomes*, *8*(1), 90.
- McEwen, B. S., Bowles, N. P., Gray, J. D., Hill, M. N., Hunter, R. G., Karatsoreos, I. N., & Nasca, C. (2015). Mechanisms of stress in the brain. *Nature neuroscience*, *18*(10), 1353.

- Michellini, I., Falchi, A. G., Muggia, C., Grecchi, I., Montagna, E., De Silvestri, A., & Tinelli, C. (2014). Early dropout predictive factors in obesity treatment. *Nutrition research and practice*, 8(1), 94-102.
- Miller-Karas, E. (2015). Building resilience to trauma: The trauma and community resiliency models. Routledge.
- Nabi, R. L. (2003). Exploring the framing effects of emotion: Do discrete emotions differentially influence information accessibility, information seeking, and policy preference? *Communication Research*, 30(2), 224–247.
- Pessoa, L. (2008). On the relationship between emotion and cognition. *Nature Reviews Neuroscience*, 9(2), 148-158.
- Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the health belief model. *Health education quarterly*, 15(2), 175-183.
- Taylor SE, Aspinwall LG. Psychosocial aspects of chronic illness. In: Costa PT, VandenBos GR, eds. Psychological aspects of serious illness: chronic conditions, fatal diseases, and clinical care. Washington, DC: American Psychological Association, 1996: 7–60.
- Taylor, S.F., Phan, K.L., Decker, L.R., & Liberzon, I. 2003. “Subjective Rating of Emotionally Salient Stimuli Modulates Neural Activity.” *Neuroimage* 18: 650–659.
- The Healthcare Costs of Obesity. (n.d). Retrieved from <https://www.stateofobesity.org/healthcare-costs-obesity/>
- WallaceJE, LemaireJB, GhaliWA. Physician wellness: amissing quality indicator. *Lancet* 2009;374(9702):1714-1721.
- Yamakawa, K., Ohira, H., Matsunaga, M., & Isowa, T. (2016). Prolonged effects of acute stress on decision-making under risk: A human psychophysiological study. *Frontiers in human neuroscience*, 10, 444.