



Reem Farhat

Major:
Psychology

Mentor:
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*The Effects of Nutrition and
Exercise on the Mental Wellness of
Preschool Children*

Biography

Reem Farhat, student investigator, has an associate's degree in Psychology, and will receive her bachelor's degree in Psychology at San José State University in Fall 2022. She has worked as a preschool teacher's assistant for two years, and has worked for two summers running an after-school program. In her psychology coursework, she has specifically focused on studying early childhood development. She has also been certified through CITI training to work with children.

When it comes to psychology, Reem has always had an interest in healing the mind of trauma and mental health disorders through the use of lifestyle changes. She is mostly interested in how simple changes, such as healthy eating, exercise, and sleep can could potentially change the chemical environment of the brain and promote long-term recovery, as opposed to relying solely on pharmaceutical treatments. She is also interested in studying how developing healthy habits in children can impact their chances of success in having good mental health as adults.

Reem is currently employed for the state at a mental health facility; she works in a youth rehabilitation center which targets transitional youth (ages 13-25) who have struggled with trauma and are seeking healing and recovery. She works with these youth to help them navigate the process of healing.

The Effects of Nutrition and Exercise on the Mental Wellness of Preschool Children

Abstract

When it comes to mental health, young children are often not researched and their tantrums or mood swings are not taken seriously, when in reality these small behavioral issues could be pointing to a larger issue. Children are the most overlooked when it comes to mental health diagnosis and treatment, unless the child begins to display extreme behavior (Philpott et al., 2019). However, preventative mental health care is arguably more pragmatic and less taboo than diagnosis and treatment. While there is research to support the use of exercise and nutrition in mental wellness, there is still not enough done within the children demographic to implement this in a strategic and routine way (Philpott, 2019). Some research has shown that teaching kids healthy habits, such as exercise and nutrition, can be effective as a preventative or treatment measure (Philpott et al., 2019). However, to our knowledge, no research has looked at multiple variables systematically (i.e., nutrition vs. exercise vs. nutrition + exercise) (Goddu, 2015).

Introduction

Extensive research with adults has shown that the use of non-pharmaceutical options is the optimal treatment for mood disorders in both long term and short term (Norwitz et al., 2021). Non-pharmaceutical routes of treatment are a way to avoid side effects, possible drug dependency, worsening condition, and irreversible biochemical changes (Norwitz et al., 2021). Ample evidence has highlighted the importance of non-pharmaceutical interventions for mental health. For example, lower levels of vitamin D are associated with multiple mental disorders, including depression, anxiety, and schizophrenia. Ketogenic diets help to address many of the bio-pathological foundations of chronic neurological diseases and mental illnesses. Artificial sweeteners, gluten, omega-3 fatty acids, and turmeric (curcumin) were also linked to treatments for anxiety disorder (Rao et al., 2008). In addition, prior research has shown that regular exercise, even if performed at low amounts (15-minute durations at 3 times a week) had significant ameliorative effects on depressive symptoms, likely because exercise increases concentration of a growth factor (i.e., BDNF) for the hippocampus (Hughes et al., 2013).

During the early childhood years, the brain undergoes critical development. More specifically, neural connections are overproduced and then subjected to selective pruning; this process allows for maximum efficiency in cognitive functions (Shonkoff, 1970). Disturbances in this process can thus adversely affect behavioral, emotional, and cognitive functioning (Shonkoff, 1970). For young children, nutrition and exercise habits are critical for development due to the critical stages of brain development that they are in, and therefore the positive impacts from healthy habits may be long lasting and effective (Duman et al., 2012).

Purpose

The purpose of this study is to better understand the effects of physical activity alone, the effects of nutrition alone, and the effects of nutrition and physical activity together, on children's mental wellness. The study will document the cause-and-effect relationship between each variable and mental wellness. This study is needed due to a shortage of

research in mental wellness in children. More specifically, few studies document effects on mental wellness through the use of exercise and nutrition. We hypothesize that the combination of physical exercise and nutrition will result in the largest improvement in children's mental wellness.

Summary

There will be four experimental phases for all participants: Phase 1 (no intervention; week 1), Phase 2 (exercise only; week 2), Phase 3 (food only; week 3), and Phase 4 (exercise plus food; week 4). Parents will be given questionnaires once a week to provide assessments on children's mental wellness. Each child will also be asked to report on their mood each week by asking them to choose emotion pictures (sad face, happy face, etc.) that best describe how they feel. To compare the effectiveness of each intervention (exercise only, food only, exercise plus food), children's mental wellness data will be compared across phases using quantitative analyses (e.g., paired-samples t-tests, Chi square tests). We also plan on plotting children's mental wellness data across the phases to show the trajectories of response to intervention.

1. Study Location: SJSU Child Development Center, 460 South 8th St, San Jose, CA 95129

2. Participating Institutions: SJSU Child Development Center

Procedures

Prior to beginning research, flyers will be emailed out through the CDC to notify parents of the study. In the next 1 weeks, Reem Farhat will visit the CDC 3 times a week for one week to distribute parental permission packets and answer questions for interested parents. Parents who want to participate will be asked to return the completed packet in person to the PI; parents who decline to participate will be asked to return their blank packets for reuse/recycling. For parents who want more time to review the packet,

they can take the packet home but will be asked to put down their contact information on the Contact Form for Reem Farhat to follow up.

At the end of the 1-week recruitment period, if fewer than 20 participants are enrolled, we will postpone the research start date and keep the enrollment on a weekly rolling basis in order to secure the desired number of participants. Once these packets have been completed and turned in to the PI, each participant will be evaluated based on the inclusion-exclusion criteria and asked to participate if they are eligible.

For the first phase of the research there will be no intervention; children will be surveyed once a week, and parents will be asked to fill out a Parent Survey once a week. For Phase two, there will be the exercise intervention for the children, and children and parents complete their respective surveys once a week. For the third phase, there will be a food intervention for the children, and children and parents complete their respective surveys once a week. For the last phase, there will be both food and exercise intervention for children, and children and parents complete their respective surveys once a week. We encourage parents to follow food and exercise plans as closely as possible, for the weeks of intervention, we expect children and parents to partake in all research activities unless reasons arise that they are unable to participate or choose to opt out. We ask that parents provide meals to children for dinner that are provided by the research, and honestly report if children did or did not consume the meals. We will provide menus to ensure food is desirable for the participant prior to providing meals. For exercise interventions we ask that all participants partake in their exercise during their outdoor period unless they are unable to do so for unforeseen reasons or are choosing not to.

References

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