

If the mind is a terrible thing to waste, then what about the body?

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Research into the Transtheoretical Model (TTM) of Behavior Change is imperative to conduct given the current health crisis facing the nation around obesity, Type 2 Diabetes Mellitus, and accidental death. These three being the leading causes of death in the young adult age group. The obesity and Type 2 Diabetes issue, while not an immediate threat of mortality for these age groups, can be thwarted if positive behavioral interventions are established within this age group. It is known that as a person ages, behavior intervention becomes harder and harder to accomplish. All theories of behavior change come with their limitations and the TTM is not beyond reproach. The researcher West (2005) highlighted some important limitations of the TTM model of Behavior change. The TTM focused on conscious decision making. West argued that many maladaptive behaviors are deeply rooted in unconscious decision making. These behaviors have become entrenched in the subconscious from years of rewards and punishments. The TTM may not address all constructs of behavior modification, but it is a great first step in creating a healthier citizenry.

The TTM model of behavior change is a model not a theory. Therefore, it is instrumental in examining the macro environment of how groups move through the stages of change. The six stages of change that an individual moves through to establish a behavior change are precontemplation, contemplation, preparation, action maintenance, and termination. While the years of college and university life is filled with robust activity and multiple demands, it is one of the few opportunities in life where an adult individual will have four full years of compulsory learning and mastery of concepts. This opportunity affords college students not only the benefit of their collegiate learning,

but the blessing to add quality healthy years to their life. The design of the TTM will allow the university or college to tailor academic courses as well as student life activities for its student population. Also, based on where the subject cohort falls in precontemplation, contemplation, action, and maintenance of health behaviors, the university will be able to conduct yearly follow up questionnaire surveys for each cohort to assess efficacy of the previous year's health behavior modifications. Alumni services can also participate and continue to offer healthy lifestyle resources and follow up surveys to assess the impacts of the University's efforts to instill positive health behaviors into its graduates. With healthy bodies to carry out the mission and social beneficence of educated minds, young college graduates will enter the world leading and making positive changes for a better tomorrow. This research explores the dependent variable of obesity caused by lack of appropriate diet and exercise. It starts with the problem identification and then proceeds to explore and examine intervention strategies using the TTM model of Behavior Change.

Literature Review

The literature review around college students and obesity illustrated a multicausal problem that is endemic to the culture of college life. In the literature review, there was a discussion around the causes of obesity in college students, the propensity of the problem and possible solutions. The independent variables of poor college diet and lack of exercise during college lead to a dependent variable of obesity. The research showed that simple changes to the construct of college life such as increased

exercise and healthier eating demonstrated a negative correlation to resolve the nation's obesity problem in the college aged young adult.

Causes of obesity in college students

The college years are a prime opportunity to act upon behavior modification of its student population, but if college is left in its current construct it will predispose students to untoward health effects from a sedentary lifestyle and obesity. As Castro, Vergeer, Bennie, Cagas, and Biddle (2021) related a sedentary lifestyle that involved sitting and reclining predisposed the individual to untoward health outcomes such as type 2 diabetes, metabolic syndrome, cardiovascular disease and depression. Castro et al (2021) found guidelines from various countries that indicate that individuals should limit sedentary time and break up long times of sitting with movement breaks. The traditional culture of the college campus has been hours of lectures, compounded by hours of seated study, computer work and reading. Linder, Hsin-Yi, Woodson-Smith and Jinhong (2018) related that not only do college students lack the time for exercise, but they also lack the energy and motivation to exercise.

Understanding time constraints and competing demands for time may provide insights into the food shopping and consumption habits of the college student. Caspi et al (2017) offered insights that offering nutritious foods at the small non-traditional food stores that surround many campuses may result in college students purchasing healthier options. In a study conducted by Ruff et al. (2016) they found that when consumers shop at stores that offer varieties of fresh fruits and vegetables, they purchased more produce and less sugar sweetened beverages.

Prevalence of obesity in college students

The pandemic of obesity has two independent variables: diet and exercise and a plethora of categorical and extraneous variables. Ball, Bice and Maljak (2018) highlighted that regular exercise helps maintain healthy body weight, muscle and bone strength and flexibility. Despite the benefits, 32.7% of adults aged 20 and over were overweight, 37.9% were obese and 7.7% were extremely obese. The Surgeon General report by the CDC (2015) found that more than 60% of Americans were not regularly active and 25% of Americans were not active at all. Additionally, studies found that about 50% of college students did not meet physical activity recommendations.

Solutions to obesity in college students

Several researchers found promising data that frequent breaks during studying were not only a positive health behavior but sound academic advice as well. Castro et al. (2021) found that college students that interrupted their sitting every 20 minutes during studying had higher academic achievement. Castro et al. (2021) further related a Belgian University where lecturers routinely appoint a stand secretary. The stand secretary is appointed to stand at random times throughout the lecture and this signals the other students to stand and stretch during the lecture. Linder et al. (2018) depicted in their study the importance of health and fitness coaches on campuses to offer physical activity classes, walking groups and fitness circuits alongside instruction on time management. Linder et al. (2018) further related that colleges and universities control their curriculums and could easily impart a requirement that all students participate in at least one required exercise course per semester. Caspi et al. (2017) challenged universities to be proactive to ensure their students are not subjected to food swamps. A relative abundance of less healthy food venues in a geographic area

contributed to poor dietary outcomes among college students. Perhaps a modification of the retail store laws and codes surrounding colleges and universities could impact a change in food consumption behaviors.

Discussion

The goal of higher learning and higher education is to instill in the mind of the student knowledge and critical thinking capabilities that will empower that individual to go forth into the world and solve real world problems. Where higher education is falling short in the education of the student is that the mind is encapsulated within the larger human organism that must be healthy in order to fulfill its species being. Therefore, the student must learn to keep the body healthy as an equilibrium to the future goals and aspirations of what he or she desires out of their future self. To further this explanation, there was a recent study done at an Australian University in 2021. One of the research findings was that the students were not aware of the untoward health effects of prolonged sitting, although this has been a known public health initiative in corporate health for some time with established interventions of standing desks and treadmill meeting rooms. Yet, the students revealed if they had this knowledge, it would be instrumental in informing their behavior change (Castro, Vergeer, Bennie, Cagas, & Biddle 2021).

For the traditional college student aged eighteen to twenty-two, college is already a very stressful time. From decades of stress theories, it has been demonstrated that the higher the stress level the lower the concentration level. Also, college is a transformative time for the young person's mind and many behaviors both adaptive and maladaptive are formed during this stage of life. So, the college campus is a prime

population target for the application of Prochaska's Transtheoretical Model (TTM) of behavior change. Horneffer-Ginter (2008) informed us that older adults tend to have an all or nothing attitude across a variety of health behaviors. Within the microcosm that is the college campus, the TTM model is well suited because there exists a demography to work with that is diverse in gender, socioeconomics, race, and ethnicities. The TTM model provided the construct to delve into this demography and work the stages of change around behavior modification. Horneffer-Ginter illustrated that 40% of college students were in precontemplation and 40% were in contemplation. Therefore, it became imperative at this early adulthood phase to understand the process by which people move from thinking about change to action.

Prochaska's TTM Model outlined a series of cognitive and emotional processes that are correlated, in general, with people's movement through the stages of change. These include (1) consciousness raising (increasing awareness), (2) dramatic relief (emotional arousal about one's current behavior and relief that can come from changing), and (3) environmental re-evaluation (considering the impact of one's behavior on one's social environment). These 3 experiential processes were central in moving from the precontemplation to contemplation stage. For a person to move to the preparation stage, Prochaska suggested the importance of self-reevaluation (values clarification and imagining oneself after change). To move into action, self-liberation was required: this is similar to Bandura's notion of self-efficacy, which is the belief that one can change and the commitment to act on that belief (Horneffer-Ginter 2008).

Conclusion

The university and college setting have been a natural design for such community health efforts. Yet the opportunity has been missed to instill healthy behaviors into future generations. Also, with healthy bodies to carry out the mission and social beneficence of the educated mind, young college graduates may enter the world leading and making positive changes for a better tomorrow. The United States has faced a pandemic of obesity and maladaptive health behavior which has resulted in disease comorbidities that are unparalleled in this country's history. This is a call to action to our college and university systems to hold themselves accountable for not only healthy minds, but healthy bodies of their student populations. This can be achieved through a comprehensive deployment of a TTM model throughout academic and student life.

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