Middle Tennessee State University (MTSU) Faculty and Staff Wellness Assessment

by

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#### ABSTRACT

Background: There is a growing body of evidence demonstrating the benefits that employee wellness programs have on businesses or institutions that have them. These benefits include, but are not limited to: employee retention, morale, and general health. The purpose of this study was to assess the current health status, behaviors, and opinions held by the faculty and staff of Middle Tennessee State University (MTSU) to determine whether or not there was a need for an employee wellness program.

Methods: Working in conjunction with the campus recreation center, a survey was developed and sent out via Qualtrics (QualtricsXM, Provo, UT, 2019) to the faculty and staff of MTSU in April 2019. Responses were analyzed and described using SPSS (IBM SPSS Statistics 24, Armonk, NY, 2016) to explore frequencies and cross tabulations.

Results: The survey received 259 responses for a 12% response rate. Based on results of the survey, the majority of MTSU's staff (67%) have either an overweight or obese body mass index (BMI) rating. The biggest barriers to exercise were found to be time (51%) and finding the motivation to exercise (24%). An overwhelming majority (84%) of respondents did believe that a Faculty/Staff wellness program would be beneficial to MTSU.

Discussion: Given the thoughts of MTSU's faculty and staff as well as the growing body of evidence surrounding the benefits of employee wellness programs, this study supports the implementation of an employee wellness program at MTSU. Such a wellness program could include health services, both physical and mental, a recreation center, and

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additional programs or incentives that encourage use of such facilities and programs. With these services currently offered to MTSU students, there would be minimal investment in these services to expand them to the faculty and staff to receive the benefits of what employee wellness programs offer.

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#### **CHAPTER I**

# **INTRODUCTION**

# **Determinants of Health**

Determinants of health are factors that influence health outcomes in a given population. While some determinants of health can be difficult or impossible to control for, such as genetics, other determinants can be controlled for or influenced by policy or program. These include social and environmental determinants of health. Social determinants of health have to do with the social environment around you such as social norms and beliefs, socioeconomic conditions, access to health care.

Environmental determinants are similar and have to do with the physical environment. Environmental determinants could be as simple as whether you live in a warm or cool weathered environment or how much it rains. Those determinants cannot be changed but environmental factors such as the amount of grassy areas, sidewalks, or benches in a community can be changed. By looking at the determinants and determining how they can be improved upon, one is simultaneously determining how we can improve the health of a community.

More than 50% of the determinants of health are related to lifestyle and can be affected with change to the social or physical determinants of health (Van Brundt, 2017).

#### **Workplace Wellness**

Many workplaces are implementing programs to improve the health outcomes of their employees by targeting the social determinants of health in different ways. Different programs can target different determinants of health, whether environmental or behavioral, to best improve the health of their employees. Potential programs can range from educational seminars to challenges where employees compete against one another. An effective workplace wellness program provides social support to individuals looking to live a healthy lifestyle, and it creates an environment in the workplace that fosters the desire for employees to be a healthier, better version of themselves.

# **Purpose of the Study**

The purpose of this study was to assess the current health beliefs, behaviors, and status of the MTSU Faculty and Staff. Contingent upon the results, the data compiled through this survey will serve as a springboard for a faculty and staff workplace wellness program.

# **Research Question**

When looking at current health status of the faculty and staff, their behaviors, their willingness to change, and the current literature, does data support the implementation of an employee wellness program at MTSU?

# Hypothesis

The health status of MTSU faculty and staff, their behaviors, willingness to change, and current literature would support the implementation of an employee wellness program for the faculty and staff of MTSU.

# Significance of the Study

This study used three different surveys that measure different aspects of health. When compiled, they form a survey that can give a comprehensive health assessment for college campus faculty. Additionally, the results from the survey look to give data on the current faculty and staff of MTSU that may serve as justification for the implementation of a workplace wellness program for the campus of MTSU.

#### **CHAPTER II**

#### LITERATURE REVIEW

# What is health?

An important question to ask oneself is "How do I define health?" It is often harder to put into words than people may think. A quick google search will suggest that health is "the state of being free from illness or injury." This definition, however, is restrictive and can be expanded upon. According to Merriam-Webster, health is "the condition of being sound in body, mind, or spirit; especially: freedom from physical disease or pain,"(Webster, 1963). The World Health Organization (WHO) has a similar definition that states, "health is the state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity," (Sartorious, 2006). Between these three definitions, the picture of what health is begins to be captured.

To better explain health, it is oftentimes broken down into different dimensions. There are eight dimensions of health that include physical, psychological, spiritual, social, intellectual, environmental, occupational, and financial.

#### 8 Dimensions of Health

Physical health is what people most often associate with health. It includes exercise, nutrition, and the absence of disease. Psychological health encompasses the mental and emotional state of an individual. How well does someone express his or her emotions? How does someone cope with stress? The psychological dimension also includes the various forms of mental illness. Spiritual health looks at someone's ability to identify his or her purpose in life. It is the ability of someone to find joy and fulfillment in life to help themselves or others achieve their full potential. Social health is how well someone can develop and maintain interpersonal relationships with other people and effectively contribute to their community or environment. Intellectual health looks at an individual's ability to make decisions. People are constantly receiving information and they must make decisions based on that information. Not only that, but what is happening based on those decisions? Is the person learning from those decisions and letting past experiences influence future decisions? Environmental health refers to the role the world has on your well-being and the role you serve in preserving the world around you. Occupational health has to do with your career and the influence is has on you. Because people often spend the majority of their time during the week at their job,

occupational health plays a large part in someone's health. Financial health is the final dimension and refers to the role of money. Financial security or insecurity plays a large role in how someone lives his or her life on a day-to-day basis (Hales, 2017).

The various dimensions of health interact with and affect one another whether positively or negatively. If someone is struggling with a particular area, then it will likely begin to manifest itself in other areas. For example, take someone suffering from depression. That is part of the psychological dimension. If they are suffering from depression, then that person is likely to not go out with friends, which would affect the social dimension. They would also be more likely to not engage in physical activity or may decide not to eat because they are not motivated or because, "Who cares?"

Health status is dynamic in nature and does not sit idle for extended periods of time. There is a spectrum that goes from sickness to health, and people are constantly moving along the spectrum, sometimes toward health and sometimes toward sickness. Because behaviors and preferences are inconsistent and change over time, so does health status. To become and stay healthy, it takes constant and intentional attention and maintenance across each of the eight dimensions of health (Stulberg, 2014).

### **Health Status**

Health in the United States ranks poorly compared to the rest of the world, especially when considering that the United States is considered a world superpower and the amount of money that is spent on health. According to the Bloomberg Healthiest Country Index, which accounts for various health variables and risks that are behavioral and environmental in nature, the United States ranked 35<sup>th</sup> out of 169 countries (Miller &

Lu, 2019). This is despite spending almost twice as much per capita on health care than other comparable nations with \$10,224 per person in the United States compared to an average of \$5280 per person in comparable countries (Sawyer & Cox, 2018).

When narrowing the scope from worldwide to within the United States, Tennessee ranks 45<sup>th</sup> of the 50 states in overall health ranking (2017 Annual Report: State Rankings, 2017). This ranking considered health behaviors, health policy, community and environment, clinical care, and health outcomes. Some contributing factors to the poor state ranking of Tennessee are related to high rates of smoking, obesity, drug deaths, and cardiovascular disease. Of adults, 22.1% smoke and 34.8% are considered obese. Of every 100,000 people, there is an average of 19.9 drug deaths and 308 deaths from cardiovascular disease (2017 Annual Report: State Rankings, 2017).

#### **Health Belief Model**

The Health Belief Model (HBM) is a theory that looks at an individual's values relating to a behavior and their expectations around choosing the behavior. Understanding these beliefs and expectations helps public health professionals to better understand how to help the public make healthy behavior changes. Godfrey Hochbaum and Irwin Rosenstock, with the help of a team at the US Public Health Service, developed the theory in the 1950s (Boslaugh, 2017).

The HBM has different components that consider an individual's point of view and beliefs as well as the objective situation. These components are perceived susceptibility, perceived severity, perceived barriers, perceived benefits, and cues to action (Rosenstock, 1966). Perceived susceptibility and perceived severity can also be combined to form another construct, perceived threat. Another component was added in the 1970s, perceived self-efficacy (Boslaugh, 2017).

## **Health Belief Model Components**

As previously mentioned, perceived susceptibility and perceived severity combine to form perceived threat. Research has demonstrated that as perceived threat increases, likelihood to make preventative health behaviors is positively impacted. This has been found to be true in a wide range of health interventions. A study by Rinaldi-Miles and Das that was focused around physical activity was used to demonstrate perceived threat (2016). When asking about perceived threats of being physically inactive, participants reported the threat of physical inactivity and how it would negatively impact their quality of life.

Perceived barriers have the opposite effect of perceived threat regarding health behavior. The negative impact of perceived barriers on health behavior means that more barriers around a behavior make that behavior less likely to be done. Specifically related to implementing a workplace wellness program, the most common barriers by employers found were a lack of employee interest, lack of support by management, lack of resources and funding, and lack of participation by high-risk employees (Linnan, 2008). In this context, a high-risk employee indicates that they have multiple chronic conditions. This is also the group that is the unhealthiest, has highest healthcare costs, and is must unlikely to participate in a wellness program (Bottles, 2015). From the employee standpoint, they reported barriers to participating in a wellness program such as privacy of personal information, understanding of the program, and lack of time (Perez-Calhoun, 2017).

Perceived benefits are positive outcomes of a health behavior that positively influence the likelihood an individual will adopt a behavior. The number one perceived benefit to encourage participation in workplace wellness program has been found to be monetary incentives. A study by Patricia and Ray found that 55% of participants said the monetary incentive was the only reason they participated in the wellness program (2013).

Perceived threat, perceived barriers, and perceived benefits all play a role in the influence of a potential behavior change. However, the health belief model states that a cue to action is needed before a behavior can be changed. Cues to action are events, people, or actions that lead people to a behavior. A cue to action could be either intrinsic or extrinsic. Intrinsic cues to action would be something like signs or symptoms of a disease. Extrinsic cues would include educational workshops or media influences (Martire & Franks, 2014). The extrinsic cue to action of putting messages on lunch trays increased vegetable consumption by 24% at a school (Broers, 2019). A different study that looked at cues to action for maintaining a healthy weight and preventing weight-related health problems concluded that internal cues to action were stronger than external cues to action. Internal cues to action like body image dissatisfaction and perceived unfair judgments were better motivators than getting advice from external sources (McArthur, 2018).

Perceived self-efficacy is the belief in oneself that he/she is capable of doing a behavior. If someone has low self-efficacy, then they are more likely to revert back to the old behavior when there is hardship. A high self-efficacy reflects confidence and a level of determination that makes an individual more likely to continue with a behavior change despite facing hardship. High self-efficacy has been shown to be predictive of

long-term success in health behavior change (Clark et al, 2016). When looking at selfefficacy as it relates to physical activity, research shows that self-efficacy is a significant predictor of physical activity (Klompstra, 2018).

# Health Belief Model and Workplace Wellness

The HBM has many components that make it an important tool in evaluating health and helping influence health behaviors, especially in a workplace setting. Because various workplaces have different leadership, employees, guidelines, and atmospheres, there is now one solution that fits all workplaces in regards to health change. The HBM focuses on individual beliefs and takes into account modifying factors like demographics, sociopsychological, and sociostructural factors that may influence an individual's perceptions (Garcia, 2016). For this reason, the HBM is commonly seen in studies revolving around health and workplace wellness. The HBM can explain employee participation in health promotion as well as help to effectively communicate intervention measures to enhance employee participation in health improvement programs (George & Tanner, 2014).

#### **Limitations of Health Belief Model**

The major limitation of the HBM is the validity of results of studies using the HBM. Questions are commonly asked in different ways between studies, which makes comparing different components of the model hard to compare. However in a study that looked at 29 different articles, all results indicate that the HBM variables are consistently linked to health behaviors (Salut, 2018). Although varied in results, the variables

themselves were linked to health behaviors, which means despite the limitation of possible validity issues, the model has largely proven valid in research to this point.

#### Workplace Wellness

With a full-time job occupying 40 waking hours an employee's time, this can easily account for the majority of an employee's time during the week. Because of this, the workplace has a lot of potential to impact the health and behaviors of its employees, whether positively or negatively, through the culture it establishes. The opportunity to create a positive and healthy workplace culture can be seized through the implementation of a workplace wellness program (Blake, 2013; Patel, 2010).

A healthy workplace can benefit the employee and the employer alike. One of the most beneficial aspects for the employer was the reduced spending on health care. A meta-analysis found that there was a 3.37 return on investment, meaning that for every dollar spent, \$3.37 was saved. This was an average across 15 different studies (Baicker, Cutler, & Song, 2010). Reduced absenteeism is widely considered the second greatest benefit to workplace wellness programs. Another meta-analysis looked at 26 different studies that analyzed sick-leave absenteeism there was a reduction of absenteeism in all studies. There was more than a 20% reduction in 17 of the 26 studies observed (Chapman, 2012). Another difference observed through workplace wellness interventions is quality of work life and workplace morale. This can be seen as an area where the benefit to the employer and employee blend together. Improving quality of work life and workplace morale as it makes for happier employees

who are found to be both more productive and more likely to be retained by the employer (Blake & Lloyd, 2019).

There are more benefits to the employee than just increased morale. Many workplace wellness programs that have lifestyle management program can reduce risk factors such as smoking while increasing healthy behaviors such as exercise (Mattke et al., 2013). Some other behaviors that may be targeted are stress management, back care, nutrition, alcohol consumption, blood pressure, and preventative care (Baicker et al., 2010). The employer has various methods of delivery to implement programs. The most commonly used is a health risk assessment. Other methods of delivery include self-help education materials, individual counseling, classes, seminars, group activities, and adding incentives for participation (Baicker et al., 2010).

With a variety of intervention focuses and methods of delivery, the employer has the ability to design and implement different programs that target the specific needs and wants of their employees.

#### **MTSU Status**

MTSU currently has facilities on campus that such as health services, mental health counseling, and a campus recreation center. The health services acts as a campus health clinic that provides medical services and prescriptions. Mental health counseling provides free counseling with a licensed mental health professional. The campus recreation center has a swimming pool, gymnasiums, weight room, cardio room, and more. They also provide services such as intramural sports, nutritional coaching, personal training, and group fitness classes at a nominal fee. Students have access to all

of these facilities and services, and the faculty and staff only access to just the campus recreation center (EXPLORE MTSU, 2020).

As employees of Tennessee, MTSU faculty and staff does have the opportunity to earn up to \$250 per year for completing certain wellness activities. This is for the employee and also their spouse for potentially up to \$500 between the employee and spouse. Such activities include completing a biometric screen, participating in one-onone health coaching, and more. This is made possible by Tennessee Partners for Health (Wellness Program, 2020).

# **Campus Wellness Program**

Workplace wellness programs have begun to find their way into many college campuses around the nation. An example can be found at Case Western Reserve University in Cleveland, Ohio. The wellness program launched in 2012 with expansion the next year and grew to an incentive-based program in 2014. Their current programs with incentives include community wellness, financial well-being, physical activity, weight management, nutrition, stress management, and tobacco cessation. Additionally, there is incentive to receive a health risk appraisal, biometric screen, and sign a tobacco attestation form.

In 2018, 2,340 faculty and staff participated in at least one program. Participants cumulatively lost over 1,000 pounds. There were 1,335 flu vaccinations were given in the fall of 2018. Also, 2,147 faculty and staff completed the biometric screening, health risk assessment, and tobacco attestation in the fall of 2018.

Two quotes from participants are below that highlight their experiences gained

from participating in the wellness program at Case Western Reserve University.

"I have developed a habit based approach working on small habits one at a time until they are established before moving onto the next habit. I've been physically active on a regular basis for almost 2 years now and feel great. I have weight to lose but I'm not being active to lose weight, I'm being active so that I can keep up with my kids and lift them up or walk up stairs without getting winded or tired. Shifting my mindset to why I'm doing this has made a big difference."

"One of the best wellness programs I have enjoyed is the Books@Work program. Not only am I able to read new books and participate in book discussions, I have met my best campus friends as a result of frequently interacting during book discussions. Even when working alongside colleagues, gathering to discuss all ramifications of life is the best way to truly to get know other individuals. I feel incredibly blessed that this program exists on our campus and it is the singular reason why I love working at Case."

(Case Western Reserve University, n.d.)

# **Current Health Assessments**

There are multiple surveys in the field that have been validated and administered, but they do not capture a full picture. Developed surveys either lack in the diversity of what is covered regarding health and wellness or they are developed for a different population, not a college faculty and staff. One such survey was administered to the faculty and staff of Stellenbosch University in South Africa to determine health status and serve as a needs assessment. The survey consisted of four sections: socio-demographic details, current understanding of wellness, wellness programs at the university, and a needs assessment. The survey was assessed for content validity by experts in the field of nutrition and wellness. The survey was also piloted by the staff in the Division of Human Nutrition to test face validity (Koen, 2018).

Another survey is the Global Physical Activity Questionnaire (GPAQ). Developed by the World Health Organization (WHO) in 2002, the GPAQ was made to look at physical activity in a variety of behavioral domains. The GPAQ has undergone a variety of validity and reliability studies since its inception and is widely recognized to be a credible survey. Because of its consistently proven validity and reliability, the GPAQ is still commonly used 17 years later to gather data on physical behaviors from around the world (Bull et al, 2009).

A commonly cited and respected study in the realm of mental health is the Patient Health Questionnaire-9 (PHQ-9). Diagnostic validity was established through 2 studies involving 6,000 patients (Kroenke et al, 2001). The survey, comprised of 9 questions, can provide provisional depression disorder diagnosis as well as grade symptom severity. Each of the questions can be scored from 0 (not at all) to 3 (nearly every day). The score from each question is then added up to give a final score between 0 and 27. There are cut off points of diagnosis at 0-4 (no symptoms to minimal), 5-9 (mild), 10-14 (moderate), 15-19 (moderately severe), and 20-27 (severe) (Kroenke & Spitzer, 2002). There are also studies where different categories have been grouped together for the purpose of interpretation. Analyzed in a meta-analysis, the standard cut-off point of 10 was determined best to detect major depressive disorder with 88% specificity and 88% sensitivity. The same study suggested more research be done with different cut-off points to report outcomes for different cut-off scores (Manea, Gilbody, & Memillan, 2012).

#### **CHAPTER III**

### METHODOLOGY

#### Overview

All proposed components of the following methodology have been approved by MTSU's Internal Review Board (19-2142). This was cross-sectional study administered through a survey to the MTSU faculty and staff. The survey was sent to all faculty and staff, both full-time and part-time, to their MTSU email by the University Provost office. The potential sample population included all administrative, faculty, professional, clerical, skilled craft, and technical positions. According to the 2017 MTSU Factbook, there are 2165 fulltime positions and 352 part-time positions employed by MTSU.

#### **Instrument Development**

The instrument used in this study was based on three different instruments. One was a survey developed by Dr. Nelene Koen at Stellenbosch University in a study looking at the university's current health status and needs assessment. Some of the questions were modified to better fit the population of MTSU. For example, a list of departments specific to MTSU were included. The Global Physical Activity Readiness Questionnaire (GPAQ) developed by the World Health Organization (WHO) was used (World Health Organization, 2020). The final survey used assesses mental health: the Patient Health Questionnaire (PHQ-9) (Kroenke, Spitzer, & Williams, 2001). The remaining questions were developed based on feedback from the MTSU

recreation center staff. The primary purpose of this survey was to determine the health attitudes, beliefs, and behaviors of the MTSU staff and faculty.

The survey was piloted to the Health and Human Performance Department (HHP) of MTSU. The completed survey modifications were made based on feedback and survey results. From the pilot study, minor grammatical mistakes were fixed, but there were no notable changes made to any questions or answer choices. The pilot study results were not used in the final results of the study in order to avoid answer choice bias. The HHP Department took the final version of the survey along with the rest of the employees of MTSU.

The survey was comprised of multiple sections. Section one of the survey was demographic and employment status information. Section two looked at the participant's health perception and readiness to change. Section three examined physical health and was largely compiled of questions related to exercise and nutrition. The fourth section asked about stress and how the participant handles stress. Section five focused on clinical health and the participant's knowledge and use of campus health services. The sixth section asked about mental health, counseling, and use of campus counseling services. The final section of the survey examined how health and wellness is communicated on campus and how it may be improved. The survey concluded with a free response question asking the participant if the survey had sparked any thought, comments, questions, or suggestions.

The survey was administered through Qualtrics, which is easily accessible to MTSU employees through their employee email. Estimated completion time for

the survey, as estimated by Qualtrics, was approximately 12 minutes. Aside from the time component and some potentially sensitive data, there was no cost to participants.

#### **Data Analysis**

SPSS was used to analyze data (IBM SPSS Statistics 24, Armonk, NY, 2016). Data was largely quantitative in nature and some variables counts were run with a descriptive analysis. Dependence among variables was tested using a chi-square analysis and odds ratios with 95% confidence ratios. P-value was placed at 0.05 to determine whether or not there is significance between relationships. Weight status, using BMI, and mental health status, using PHQ-9 results, served as dependent variables. Both dependent variables were translated into binary variables. BMI categories were "Healthy" and "Overweight." The "Overweight" grouped together the overweight and obese BMI groups. Mental health categories were "Mild to Moderate" and "Moderately Severe to Severe."

Odds Ratios (OR) were used to measure the association between participant's activity level of satisfaction in relation to barriers. Barriers were looked at in two different ways. Barriers to exercise in general were looked at and barriers to working out specifically at the MTSU Campus Recreation center were examined in the analysis. Significance remained at or below a p-value of 0.05 and 95% confidence intervals were calculated for the ORs.

# **CHAPTER IV**

# RESULTS

# Demographics

There were 259 recorded responses and 247 responses were used in the analysis of the study. Twelve responses were discarded because they completed the screening and eligibility part of the survey, but failed to answer any further questions. There was approximately a 2:1 ratio of women to men. Figure 2 presents a breakdown of participants according to their college of employment. Employment status reflects that 92.3% of respondents are full time employees. The educational attainment of respondents indicates that 70.9% have either a professional degree or doctorate.

Table 1. Survey Respondent Demographics			
Variable	Ν	%	
Sex			
Male	69	27.6%	
Female	178	71.2%	
College			
Basic and Applied Science	27	11.1%	
Behavioral and Health Sciences	42	17.2%	
Business	11	4.5%	
Education	15	6.1%	
Liberal Arts	30	12.3%	
Media and Entertainment	27	11.1%	
Walker Library	15	6.1%	
No Particular College	77	31.6%	
Employment Status			
Full time	228	92.3%	
Part time	19	7.7%	
Highest Completed Level of Education			
High School	4	1.6%	
Some College	11	4.5%	
2-year Degree	6	2.4%	
4-year Degree	51	20.6%	

Professional Degree	81	32.8%
Doctorate	94	38.1%

#### Table 1. Respondent's College Employment Composition



# **Descriptive Characteristics**

When looking at BMI category distribution, there was a relatively even distribution of respondents amongst the normal, overweight, and obese categories. No respondents were considered underweight. Scores derived from the PHQ-9 embedded in the survey indicate 58.2% of respondents had moderate depressive symptoms. The remaining respondents were mild (15.1%), moderately severe (18.7%), or severe (8.0%). No respondent's score reflected minimal or no symptoms.

More than 90% of respondents are actively working on health. There were 37.1% of respondents who were satisfied with their current activity level, 55.4% who were dissatisfied and want to improve, and 1.2% who do not care about their current activity level. The majority (81.0%) of people who took the survey consider themselves healthy with the remainder considering themselves as unhealthy or unsure.

When asked if they thought a wellness program would be beneficial, 83.6% of participants said yes, 1.5% said no, and the remaining 15.0% were unsure. Additionally, exactly half of respondents said they would use health services on campus if it were made available to them. There were 15.4% that said they would not use health services and the other 34.6% said they would maybe use the health services.

Table 2. Reported Weight, Depression, and Activity Actions and Perceptions			
Variable	N	%	
BMI Category			
Normal	77	35.8%	
Overweight	76	35.3%	
Obese	62	28.8%	
PHQ-9 Category			
Mild	34	15.1%	
Moderate	131	58.2%	
Moderately Severe	42	18.7%	
Severe	18	8.0%	
Actively Working on Health			
Yes	224	91.1%	
No	22	8.9%	
Current Activity Level			
Satisfied	93	37.1%	

Dissatisfied and Want to Improve	139	55.4%
Do Not Care	3	1.2%
Consider Yourself Healthy		
Yes	200	81.0%
No	23	9.3%
Unsure	24	9.7%
Would Wellness Program be		
Beneficial?		
Yes	189	83.6%
No	3	1.3%
Unsure	34	15.0%
Use Health Services if Made		
Available		
Yes	114	50.0%
No	35	15.4%
Maybe	79	34.6%

# **Influences on Weight Status**

Weight status was crosstabulated with the variables: sex, college employed in, perceived weight, perceived health, whether the participant is actively working to improve health, how they felt about their current activity level, the number of minutes the participant exercise per week, and whether they thought a wellness program would be beneficial.

The relation between weight status and sex was found to be insignificant  $\chi^2$  (1, N = 213) = 4.223, p = .121. The relation between weight status and college employed in was insignificant  $\chi^2$  (7, N = 212) = 4.716, p = .715. Weight status and perceived weight

was found to be significant  $\chi^2$  (1, N = 214) = 58.507, p < .001. The relation between weight status and perceived health was significant  $\chi^2$  (2, N = 214) = 7.057, p = .027. Weight status was not significantly associated with whether the participant was actively working on health  $\chi^2$  (1, N = 214) = 3.691, p = .055. Weight status was significantly associated with the minutes of exercise participants engaged in per week  $\chi^2$  (3, N = 215) = 10.524, p = 0.015. The relation between weight status and satisfaction of current activity level was significant  $\chi^2$  (1, N = 207) 14.078, p < .001. There was no significance in relation to weight status and whether or not they believe a wellness program would be beneficial  $\chi^2$  (2, N = 201) = 2.643, p = .233.

Table 3. Weight Status and Perceived Health Activities and Perceptions				
Weight Status	Normal N (%)	Overweight N (%)	Chi-Square	P- Value
Overall	77 (35.8%)	138 (64.2%)		
Sex			4.223	0.121
Male	18 (31.0%)	40 (69.0%)		
Female	57 (36.8%)	98 (63.2%)		
College			4.716	.715
Basic and Applied Science	10 (38.5%)	16 (61.5%)		
Behavioral and Health Sciences	16 (45.7%)	19 (54.3%)		
Business	3 (33.3%)	6 (64.7%)		
Education	5 (41.7%)	7 (58.3%)		
Liberal Arts	10 (38.5%)	16 (61.5%)		
Media and Entertainment	9 (42.9%)	12 (57.1%)		
Walker Library	4 (28.6%)	10 (71.4%)		
No Particular College	19 (27.5%)	50 (72.5%)		
Perceived Weight			58.507	<.001
Normal	58 (65.2%)	31 (34.8%)		
Overweight	18 (14.4%)	107 (85.6%)		
Perceived Health			7.057	.027*
Healthy	69 (39.0%)	108 (61.0%)		
Unhealthy	2 (10.0%)	18 (90.0%)		
Unsure	5 (29.4%)	12 (70.6%)		
Actively Working on Health			3.691	.055
Yes	74 (37.9%)	121 (62.1%)		

No	3 (15.8%)	16 (84.2%)		
Exercise Minutes/Week			10.524	.015*
None	8 (19.5%)	33 (80.5%)		
Low (1-59 min)	18 (29.5%)	43 (70.5%)		
Moderate (60-149 min)	35 (43.2%)	46 (56.8%)		
High (150+ min)	16 (50.0%)	16 (50.0%)		<u>.</u>
Current Activity Level			14.078	<.001
Satisfied	46 (50.0%)	36 (50.0%)		
Wants to Improve	31 (25.2%)	92 (74.8%)		
Would Wellness Program be Beneficial?			2.643	.233
Yes	56 (33.1%)	113 (66.9%)		
No	1 (33.3%)	2 (66.7%)		
Unsure	14 (8.3%)	15 (51.7%)		
*= p=≤.05				

#### **Influences on Mental Health**

In this study, mental health was measured using the PHQ-9, which purely tests for depressive symptoms. PHQ-9 categories were crosstabulated with the variables: college employed in, days a week spent working on campus, hours a week spent on work, perceived mental health, whether the participant has ever met with a therapist, whether they regularly meet with a therapist, and if they believe a wellness program would be beneficial.

The relation between mental health and college employed in was found to be insignificant  $\chi^2$  (7, N = 222) = 9.233, p = .236. Days a week working on campus and mental health had an insignificant association  $\chi^2$  (2, N = 225) = .650, p = .759. Hours a week of work and mental health were not significantly associated  $\chi^2$  (1, N = 225) = .162, p = .688. Mental health and perceived mental health were significantly related  $\chi^2$  (2, N = 225) = 62.611, p < .001. There was a significant relation between mental health and if the participant had met with a therapist  $\chi^2$  (1, N = 224) = 4.191, p = .041. A significant relationship was seen with mental health and if the participant regularly meets with a therapist  $\chi^2$  (1, N = 128) = 4.982, p = .026. The relation between mental health and the belief of whether or not a wellness program would be beneficial was significant  $\chi^2$  (2, N = 223) = 9.264, p = .006.

Table 4. PHQ-9 Results and Mental Health Perceptions and Actions				
PHQ-9 Results	Mild to Moderate N (%)	Moderately- Severe to Severe N (%)	Chi- Square	P- Value
Overall	165 (73.3%)	60 (26.7%)		
College			9.233	.236
Basic and Applied Science	18 (72.0%)	7 (28.0%)		
Behavioral and Health Sciences	35 (87.5%)	5 (12.5%)		
Business	7 (70.0%)	3 (30.0%)		
Education	9 (60.0%)	6 (40.0%)		
Liberal Arts	15 (60.0%)	10 (40.0%)		
Media and Entertainment	17 (77.3%)	5 (22.7%)		
Walker Library	8 (61.5)	5 (38.5%)		
No Particular College	53 (73.6%)	19 (26.4%)		
Days/Week Working On Campus			.650	.759
Low (0-3 Days)	17 (68.0%)	8 (32.0%)		
Moderate (4-5 Days)	143 (73.7%)	51 (26.3%)		
Often (6-7 Days)	5 (83.3%)	1 (16.7%)		r
Hours/Week Working			.162	.688
40 Hours or Less	83 (72.2%)	32 (27.8%)		
More than 40 Hours	82 (74.5%)	28 (25.5%)		ſ
Perceived Mental Health			62.611	<.001*
Good	154 (85.6%)	26 (14.4%)		
Neither good nor bad	8 (29.6%)	19 (70.4%)		
Bad	3 (16.7%)	15 (83.3%)		ſ
Ever met with therapist			4.191	.041*
Yes	87 (68.0%)	41 (32.0%)		
No	77 (80.2%)	19 (19.8%)		
Regularly meet with therapist			4.982	.026*
Yes	8 (44.4%)	10 (55.6%)		
No	79 (71.8%)	31 (28.2%)		1
Would Wellness Program be Beneficial?			9.264	.006*

Yes	131 (70.4%)	55 (29.6%)		
No	1 (33.3%)	2 (66.7%)		
Unsure	31 (91.2%)	3 (26.9%)		
*= p=≤.05 **only answered by respondents who answered "Yes" to having ever met with therapist				

#### **Barriers to Activity Level Satisfaction**

Barriers to exercise in general that were looked at were lack of interest, lack of motivation, lack of time, unsure of how to exercise, or other. The barriers to working out specifically at the MTSU Campus Recreation center that were looked at were working out with students, sharing a locker room with students, working out with coworkers, sharing a locker room with coworkers, unsure of how to exercise, unaware of their free access to the campus recreation center, hours of the campus recreation center, lack of parking, cleanliness, no reason apply, and other.

When looking at barriers to exercise in general, participants who see motivation as a barrier are more likely to be unsatisfied with their activity level than participants who do see motivation as a barrier OR = 12.7, 95% CI (5.93-27.02). Time was a significant barrier to activity level satisfaction with those who see time as a barrier being more likely to be unsatisfied with their activity level OR = 7.4, 95% CI (2.38-7.38). Participants who view being unsure of how to exercise as a barrier were more likely to be unsatisfied with their activity level OR = 9.8, 95% CI (2.24-42.72). Not having interest and "other" were not significant barriers to activity level satisfaction. See Figure 2.

When looking at barriers to working out at the MTSU Campus Recreation Center, working out with coworkers was significant barrier that made participants more likely to be unsatisfied with their activity level OR = 3.6, 95% CI (1.31-9.92). Sharing a locker

room with coworkers was also a significant barrier and made participants more likely to be unsatisfied with their activity level OR = 1.9, 95% CI (1.67-2.11). Being unsure of exercise was a barrier that made participants more likely to be unsatisfied with activity level OR = 16.45, 95% CI (3.85-70.34). Participants were also more likely to be unsatisfied with their activity level if they were unaware of their free access to the recreation center OR = 3.51, 95% CI (1.14-10.83). The barriers of working out with students, sharing a locker room with students, hours of the recreation center, parking, cleanliness, no reasons apply, and "other" were all found to be insignificant. See Figure 3.





#### **CHAPTER V**

# Discussion

The purpose of this study was to look at the current health beliefs, behaviors, and status of the MTSU Faculty and Staff, and whether they would support the implementation of a Faculty and Staff Wellness Program. Based on the demographics of the survey respondents compared to the demographics presents by the 2017 MTSU Factbook, there does not appear to be any differences that would impact the application of this survey to the MTSU campus as a whole. Over 80% of respondents consider themselves healthy. Despite that, more than 90% are also working on their health. This indicates that the participants understand that health is a dynamic state because despite the fact that a large number consider themselves healthy, an even larger number is actively working on their health.

There is also a desire by more than half of the survey participants to improve their health through more physical activity. The three significant barriers to satisfaction with physical activity were time, motivation, and being unsure about exercises. All three barriers are something that a wellness program would be able to address. Time could be addressed through the way that a wellness program would be implemented. Wellness programs can offer programs that integrate wellness into people's day, such as programs that involve weight loss, nutrition, or smoking cessation. Workplaces that incorporate those kinds of programs have shown success in areas such as health savings, increasing their employee's exercise levels, employee risk reduction, and employee smoking rates (Kaspin et al, 2013). Resources may also be made available to faculty and staff that are

accessible at any time. Motivation can be addressed through the comradery that comes through the program, which would also help to improve social health. An effective wellness program can bring employees together through healthy competition or teamwork in the process of becoming healthier. The use of competitions or challenges has been seen to be a common and effective method to increase participation (Kaspin et al, 2013). Faculty and staff being unsure about exercises or what to do could be fixed through a wellness program as well. Programs that provide access to certified personal trainers to faculty or staff would educate them about proper exercise technique, how to use equipment, and provide workout programs to follow. There is also a variety of group exercise classes such as yoga, cycling, high intensity interval training (HIIT), and more; already in place at MTSU where certified trainers lead classes.

Kennesaw State University has a Faculty and Staff Wellness Programs that features the ways to address the barriers above. They have many resources online such as healthy recipes and at-home workouts to do. They offer over the phone health coaching that faculty and staff have free access to do. They use employees, acting as wellness ambassadors, throughout the university to promote the program in different departments and bring comradery to the colleagues across their campus. Additionally, the program features personal trainers and group fitness classes, both of which faculty and staff can use (Employee Fitness Center, 2020).

Some of the barriers more specific to working out at the campus recreation center that made people more likely to be unsatisfied with their activity level are necessary to mention. One significant barrier was being unsure about exercises or what to do. This could be combated in the ways mentioned previously. Another is simply the awareness

that the campus recreation center is free to faculty and staff. People that viewed this as a barrier were 3.5 times more likely to be unsatisfied with their current activity level. This could be the easiest barrier to eliminate by simply using effective marketing. A final significant barrier found when looking out at the rec center in association with activity level satisfaction was working out with coworkers. This has been reported as a barrier in other studies and two of the underlying issues were confidence in exercise and low stamina, which made working out in front of others embarrassing (Bredahl, 2015). This barrier is more difficult to directly address, but a wellness program could still benefit these individuals. For one, it may be indirectly addressed through educating faculty and staff about exercise. Also, stamina would build over time to reduce the embarrassment. The barrier may also begin to fade over time as a communal effort to improve health is made, but if not, a wellness program would help them in more ways than just their access to the campus recreation center. This may be through nutritional programs, exercise programs, or online challenges. Again, referencing Kennesaw State University, they have these features built into their program.

The survey also indicates that MTSU also has a high proportion of overweight and obese individuals. This is despite the reduced presence of risk factors such as lack of education (93.9% of respondents had a college degree) and low income (92.3% of respondents are full-time employees of MTSU). Instead, it is likely due to the sedentary nature of work on campus coupled with the absence of a healthy campus culture. Increasing exercise time per week looks to be a good way to combat the issue as each incremental increase of exercise time described in the study increases the percentage of

people who fall into the healthy BMI category. People who are overweight or obese are significantly likely to be dissatisfied and want to improve their activity level.

When looking at mental health through the lens of depression using the PHQ-9, there is substantial presence. A study looking at a general population using the PHQ-9 found that just 1.3% had moderately severe to severe symptoms. There was also an increase to average PHQ-9 scores as educational attainment dropped (Kocalevent et al, 2013). This survey saw a twenty-fold increase to the number of moderately-severe to severe symptoms despite the high educational attainment of employees.

While workload does not look to be associated, there is an association seen with mental health status and whether they ever have met with a therapist or regularly meet with a therapist. A higher number of people who have moderately severe to severe symptoms have met with a therapist than those who were mild to moderate. This reinforces what the survey found in that people have a generally good perception of their own mental health. Of those, few regularly meet with a therapist still. Some likely explanations are the cost of a therapist and the time commitment. With therapists already on campus, a faculty and staff wellness program could open the availability to the faculty and staff to a minimal cost, if no cost at all are already on campus, too. Denison University offers counseling to their faculty and staff in order to enhance emotional health, well-being, and job performance. They service students as well as the faculty and staff with the same counselors (Counseling Services, 2020).

All the different benefits of a wellness program will also affect the different dimensions of health. For example, as BMI improves, there is reduced risk for chronic disease and better body image. This can result in less stress and more confidence to

improve psychological health. The impact of community program or group classes improves social health as well through interaction with coworkers. Oftentimes, they may be meeting coworkers they would not have met otherwise. Occupational health would also increase as participation is optional and would increase worker morale through opportunity. Financial gain may also be implemented through monetary compensation provided through the program. Incentives may be through TN Partners for Change or they may be additional incentives provided by MTSU.

One of the most direct questions used on the survey in regard to a wellness program simply asked participants if they thought a wellness program would be beneficial. That question found that an overwhelming majority did think a wellness program would be beneficial and only 3 people said no. There was some uncertainty as well. This question shows that potential participants in the program think that it would be a good idea. Half of participants said they would use the campus health services if they were made available. This is despite the fact that many people already have a primary care provider that they go too. These two questions help to show the belief that survey respondents have in that a wellness program would be beneficial. They also point to the willingness to partake in such a program.

# Limitations

One of the major limitations of the study was the distribution of the survey. Not all faculty and staff members are "subscribers" to the e-mails from the University Provost office. Because of this, the exact number of faculty and staff who received the e-mails is unknown. Another limitation is potential bias. There was potential recall bias is some of

the nutrition and PHQ-9 questions that asked respondents to recall up to 14 days back. There was also potential selection bias. As the survey was sent out to all of faculty and staff, those who are interested in health were more likely to respond. This is reflected in the fact that Behavioral and Health sciences had the highest proportion of responses. The survey was also sent out at the end of semester on study day. This may have led to an increased level of stress and anxiety for the faculty that the end of semesters typically is associated with.

Use of the PHQ-9 to test for mental health was also a limitation. The PHQ-9 only tests for depressive disorders based on depressive symptoms. There are many other potential mental illnesses that may go undetected such as: anxiety disorder, schizophrenia, obsessive compulsive disorder (OCD), and more.

Use of BMI for physical health also was a limitation. BMI is based purely on height and weight. There is no component of body composition, meaning that someone who has high amounts of muscle mass may fall into the overweight category despite being active and physically fit. While a measurement that is largely valid for the general population, more active and/or muscled individuals may be miscategorized.

# **Future Directions**

The primary direction that the results of this study can lead is regarding a faculty and staff wellness program. The study could serve as justification for or against a faculty and staff wellness program's implantation for the campus of MTSU. The survey can also be used in various ways. Many questions on the survey could help to shape what the framework of the wellness program would look like based on some of the health

disparities found in the survey. The survey also looked at different activities faculty and staff already do and enjoy doing, so that would help shape the program to the faculty and staff of MTSU. The survey was also written in a way so that it could easily transfer to different colleges or universities. Small changes (i.e. Please specify the college you are employed in) would need to be made, but the survey demonstrates a level of external reliability. Another beneficial future direction would be a meta-analysis of multiple colleges that have faculty and staff wellness programs. Looking at the different ways that they have been implemented and correlating them to the results produced by the program would be interesting and beneficial.

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