THE RELATIONSHIP BETWEEN PERSONALITY TYPES AND EXERCISE PREFERENCES AND BEHAVIORS

by

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Submitted in partial fulfillment of the

requirements for Departmental Honors in

the Department of Kinesiology

Texas Christian University

Fort Worth, Texas

May 8, 2017

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ABSTRACT

The purpose of this study was to determine the relationships between personality types, according to the dichotomies of the Myers-Briggs Type Indicator (MBTI), and exercise preferences and behaviors. College students (n= 80, age 18-23 yrs) enrolled in Physical Activity classes at TCU completed a demographics questionnaire that analyzed preferences for exercise characteristics, the Keirsey Temperament Sorter (KTS) that classified participants' personality types, and the Godin Leisure-Time Exercise Questionnaire that assessed current exercise frequency and intensity. One-way ANOVAs indicated significant differences between only two of the dichotomies and three of the exercise preferences. The main effect differences were for the thinking vs. feeling subscale and preference for company, $F(1,76) = 7.20$, $p = 0.009$, and preference for aerobic exercise, $F(1,79) = 4.25$, $p = 0.043$, and for the judging vs. perceiving subscale and preference for location, $F(1,75) = 5.59$, $p = 0.021$.These results indicate that feeling was associated with a preference for aerobic exercise and exercise with a few others, and judging was associated with a preference for exercise at the gym. While limited, the results do indicate relationships between personality types and exercise preferences and behaviors.

Review of Literature

Introduction

Researchers often examine the relationship between personality and exercise. This relationship helps to develop trends between certain personality characteristics and exercise behavior, which encourages people to maintain more physical lifestyles. Suzanne Brue has even developed a method for personalizing exercise based on personality. Her "8 Colors of Fitness" method focuses on matching physical activity routines and exercises with peoples' individual personalities. Her eight categories are inspired and based on the sixteen personality types from the Myers-Briggs Type Indicator (MBTI). Through her observational research, she indicates that people can be categorized according to their preferences for environment, types of physical activity, duration, structure, and motivation for exercise, and more importantly, can be encouraged to begin or maintain a more physically active lifestyle based on the individualization of the program (Brue, 2008).

The current study is interested in furthering the study between personality types, according to the MBTI, and exercise behaviors and preferences. However, research analyzing these specific factors is relatively new; therefore, research examining personality traits, according to the Five Factor Model, another common method used to categorize personality, will also be considered. The purpose of the literature review is to examine the current understanding of the use of personality assessments on exercise and health behaviors, including motivation for exercise, adherence to exercise, barriers to exercise, and the effects of exercise on

personality. This review will assist in exploring the relationship between certain personality types and exercise behaviors and preferences.

Five Factor Model

The Five Factor Model uses five factors to encompass the differences in personality across individuals. The five factors are Extraversion (E), Agreeableness (A), Conscientiousness (C), Neuroticism (N), and Openness to Experience (O) and are set on a continuum, demonstrating the comprehensive and enduring belief of this model (McCrae & John, 1992). Researchers continue to explore applications of the Five Factor Model within different settings, such as the relationship between the five factors and exercise related behaviors, such as weight change, physical activity, and individual preferences for exercise.

Weight changes and personality. Researchers were initially interested in examining the differences in personality between people based on weight and weight changes over time (Magee & Heaven, 2011). Using a sample of over five thousand Australian adults, researchers obtained baseline personality scores, using Goldberg's Big Five Markers Scale, and a baseline BMI score. Both baseline conditions were then compared to scores obtained two years later. The purpose of the study was to determine if there was an association between personality traits and baseline obesity, as indicated by the BMI score, and between personality traits and a two-year change in weight. The results indicated that while Conscientiousness was inversely related to obesity, Extraversion, Agreeableness, and Neuroticism were directly related to obesity. In addition, Extraversion predicted two-year weight gain of more than 5% of body weight. Overall,

Extraversion was associated with a higher baseline BMI and with a greater likelihood of increased weight changes.

Further research also investigated the relationship between personality traits and changes in weight but more specifically focused on the use of personality traits as predictors of weight loss behavior (Munro, Bore, Munro, & Garg, 2011). The purpose of the study was to determine if personality traits could be shown as predictors of weight loss in order to match individuals with personal and efficient weight loss programs. Researchers recruited 54 participants, characterized by BMI scores of 30 to 40, to follow either a "slow, healthy eating weight loss diet (HEWLD)" or a "fast, very low energy diet (VLED)" (Munro et al., 2011). The HEWLD group consumed 5000-6000 kJ/day for 12 weeks, and the VLED group consumed 3000 kJ/day for 12 weeks. Weight was measured at the beginning of the trial and at the end of the 12 weeks, and personality traits were assessed using the Tangney Self Control Scale and the Neuroticism, Conscientiousness, and Extraversion scales from the Five Factor Model.

The results revealed a positive correlation between weight loss as a result of the VLED and Neuroticism, as well as a negative correlation between weight loss as a result of the VLED and Conscientiousness (Munro et al., 2011). The results of this study therefore show positive support for the ability of personality traits, especially Neuroticism and Conscientiousness, in predicting weight loss behaviors.

Physical activity and personality. In a similar manner, researchers conducted studies to determine whether personality traits could predict changes in physical activity over time (Allen, Magee, Vella, & Laborde, 2016). Specifically,

researchers hypothesized a bidirectional association between personality and physical activity and tested this hypothesis across a large sample of over 10,000 Australian adults. Participants responded to 28 adjectives in order to assess personality traits according to the Five Factor Model and completed the Short-form Health Survey 36 to determine physical activity. Researchers administered the personality and physical activity assessments three separate times: in 2006, in 2010, and in 2014. They found that increases in Openness to Experience and Conscientiousness were positively associated with increases in physical activity, but Agreeableness was associated with decreases in physical activity. The results also indicated that while personality can influence changes in physical activity, physical activity does not influence changes in personality (Allen et al., 2016). This study indicates that certain personality traits influence changes in physical activity, which further supports the application of personality traits as causes for changes in physical activity.

Preferences for exercise and personality. To obtain a more complete look at the individualization of exercise, researchers of one study examined the relationship between the five factors and exercise behavior, motives, barriers, and preferences (Courneya & Hellsten, 1998). The 264 undergraduate student participants completed five surveys to assess personality traits, exercise behavior, motives, barriers, and preferences. The NEO Five Factor Inventory measured the five factors, and the Godin Leisure Time Exercise Questionnaire measured current exercise behavior in terms of intensity and duration. The researchers asked the participants to rank the importance of six difference exercise motives: fitness,

physical appearance, weight control, socialization, stress relief, and fun. The participants also ranked the influence of three exercise barriers: lack of time, lack of energy, and lack of motivation. Finally, they identified their preferences for people, environment, time, type, structure, and intensity of exercise.

These researchers found that Extraversion was positively correlated and Neuroticism negatively correlated to the amount of exercise performed. Neuroticism was strongly related with the motive of physical appearance, while Extraversion was strongly related with the motive of socialization. Openness to Experience was positively related with a preference for outdoor exercise. Agreeableness was correlated with a preference for aerobic exercise rather than weight lifting. In regards to structure, researchers found that Extraversion was correlated with a preference for more supervised exercise but Openness to Experience was correlated with a preference for the opposite (Courneya & Hellsten, 1998). This study is important because it suggests that exercise preferences and exercise behaviors are strongly influenced by certain personality traits, which could then be used to encourage people to adopt the most fitting and effective exercise and health plans.

Summary. The Five Factor Model evidences the influence of personality on exercise and health behaviors. The traits within the Five Factor Model are related to different likelihoods of weight changes, different motivations and barriers to exercise, and different overall preferences for type, intensity, and atmosphere of exercise. However, the Five Factor Model is only one of many personality types

readily available to the public. Another popular choice in personality test is the Myers-Briggs Type Indicator.

Myers-Briggs Type Indicator

The Myers-Briggs Type Indicator (MBTI) is a personality assessment whose focus is to empower users to apply the information learned to their daily lives and interactions. The MBTI, inspired by the theories of Carl Jung and made applicable for daily life by Isabel Briggs Myers and Katharine Cook Briggs, categorizes users into 16 personality types based on four dichotomies. The four dichotomies express the ways in which people focus attention (Extraversion/Introversion), receive information (Sensing/Intuition), make decisions (Thinking/Feeling), and approach the world (Judging/Perceiving) (Myers & McCaulley, 1998).

Researchers have applied the MBTI to exercise psychology, though not as frequently as the Five Factor Model. One study examined the relationship between the personality types, classified by the MBTI, and motives for exercise, classified by the Exercise Motivations Inventory 2 (Baghurst & Pruitt, 2010). Researchers administered both assessments to university students enrolled in walking and weight training classes. The results did not indicate distinct relationships between personality types and participation motives, but they did highlight the least common personality types seen in each fitness class. INTJ was the least common personality type in both the walking class and the weight training class (Baghurst & Pruitt, 2010). Although this study is limited in its scope and indistinct relationships, it does suggest that the MBTI could provide cues for prediction of exercise and exercise behavior and urges for follow-up research.

MBTI and Five Factor Model

Researchers also examined the relationship between these two personality assessments, the MBTI and the Five Factor Model. Specifically, research found strong similarities between four of the five factors and the four dichotomies of the MBTI (Furnham, Moutafi, & Crump, 2003). Researchers in this study administered the MBTI and the Revised NEO-Personality Inventory to 900 participants to assess personality in the four dichotomies of the MBTI and the five factors of the Five Factor Model. The results showed that Extraversion was positively correlated with MBTI's Extraversion and that Openness to Experience was positively associated with MBTI's Intuition. In addition, Agreeableness was positively linked to MBTI's Feeling, and Conscientiousness was positively related with MBTI's Judging. Even Neuroticism was positively correlated to Introversion, although this relationship was not as strong as the others. Researchers concluded their results with the assertion that the MBTI dichotomies can be compared to the factors of the Five Factor Model (Furnham, Moutafi, & Crump, 2003). Even further, these results suggest that the MBTI dichotomies could be used, similarly to the Five Factor Model, to categorize health behaviors and exercise preferences.

The results of the above study replicated those of an earlier study. The researcher in this initial study also examined the commonalities between the two personality assessments (Furnham, 1996). Using the MBTI and the NEO-Personality Inventory to assess the five factors on 160 subjects, he found the same relationships between the five factors and the four sections of the MBTI; Agreeableness was positively correlated with Feeling Conscientiousness with Judging, Extraversion

with Extraversion, and Openness to Experience with Intuition. Again, this study indicates that the Five Factor Model factors have a strong overlap with the dimensions of the MBTI, suggesting that the MBTI dichotomies would also have similar effects on exercise behaviors and preferences as the factors did.

Conclusion. Research dictates that the different characteristics of personality assessments are strong influences of health behaviors particularly exercise behaviors. While, the Five Factor Model has been more widely used to examine personality traits and apply them to exercise behavior, the MBTI could offer additional benefits for users. Although critics point out its oversimplification and compartmentalization of personality (Pittenger, 2005), the MBTI's simplistic nature, easily understood groupings, and popularity in common culture could attract and motivate more users. In addition, because of the identified overlap between the MBTI and the Five Factor Model, the effects of the four MBTI characteristics on exercise behavior should resemble the findings of the Five Factor Model.

Purpose

The purpose of this study is to determine the relationship between different personality types, according to the dichotomies of the Myers-Briggs Type Indicator, and exercise behaviors and exercise preferences among college students. Types of exercise behaviors examined in this study include current intensity, frequency, and duration of exercise. Types of exercise preferences examined in this study include location, environment, aerobic level, and structure.

Hypothesis

The hypothesis for amount of exercise within the topic of exercise behavior is that Extraversion and Conscientiousness will be positively and Neuroticism negatively related to the amount of exercise performed. In regards to intensity within exercise behavior, the hypothesis is that strenuous exercise will be positively linked to Extraversion and Conscientiousness. However, moderate exercise will be positively linked to Openness to Experience.

The hypothesis for environment for exercise preference is that Extraversion will be positively related to a preference for exercising with people, while Openness to Experience will be positively related to a preference for exercising outside. In regards to preference of type of exercise, the hypothesis is that Conscientiousness and Extraversion will be positively related to a preference for structured exercise, and Agreeableness will be positively related to a preference for aerobic exercise. The hypotheses for both exercise behavior and exercise preference will be tested using questionnaires.

Methods

Introduction

In this study, college student participants completed three paper surveys. The surveys assessed relevant background information including age, sex, exercise experience, and exercise preferences, classified the participants by the sixteen personality types of the MBTI, and obtained information regarding the current exercise behaviors, such as intensity, duration, and frequency, of the participants.

Participants

The participants were 80 undergraduate students, ages 18 to 23 years, from the Physical Education Activity classes at Texas Christian University. The study recruited participants in person in classrooms before each class began. The selection criteria was that the participants had exercised for at least six months at some point during their life, but they did not have to be currently exercising. Additionally, participants were excluded if they were intercollegiate or club athletes. The mean age of the participants was 20.85 years, and 57% of the participants were female.

Measures

The measures of this study were three questionnaires. They were completed on paper. Together, they assessed demographics, current exercise behaviors, and exercise preferences.

Keirsey Temperament Sorter (KTS). The Keirsey Temperament Sorter was administered to participants to measure personality types. This 70-item survey categorizes people into sixteen personality types of the MBTI based on four

opposing dichotomies – Extraversion/Introversion, Sensing/Intuition, Thinking/Feeling, Judging/Perceiving (Keirsey & Bates, 1984). The KTS is correlated with the MBTI by a coefficient of 0.75 (Keirsey, 2004).

Godin Leisure Time Exercise Questionnaire. The Godin Leisure Time Exercise Questionnaire was administered to measure exercise behaviors. In this questionnaire, the participant answered three open questions regarding the frequency of exercise occurring for at least 15 minutes. He or she denoted how frequently he or she engages in mild (easy walking, golf, yoga, etc.), moderate (fast walking, baseball, light swimming, etc.) and strenuous (jogging, soccer, judo, etc.) exercise during an average week. The frequency of exercise is then multiplied by three, five, and nine for mild, moderate, and strenuous, respectively. The leisure score index is calculated by summing the new products of frequency of exercise (Godin, Jobin, & Bouillon, 1986).

Demographics Questionnaire. The Demographics Questionnaire evaluated participant background information, including age, sex, and previous exercise experience. It also obtained participants' exercise preferences, such as exercise location, atmosphere, activity, structure, and intensity. The Demographics Questionnaire provided information necessary to exclude any data, such as if the participant were an intercollegiate or club athlete, from the data analysis.

Procedure

First, the study will seek institutional review board (IRB) approval through Texas Christian University. Upon IRB approval, participants will begin the assessments. Participants will complete the three assessments individually in print.

They will complete the assessments in one sitting, and the responses will be anonymous. The researcher will approach students in classrooms at Texas Christian University. Before the class begins, the researcher will invite all students in the classroom to participate, and any data obtained from an ineligible student will be omitted from the statistical analyses. The willing participants will return the completed surveys to the researcher immediately.

Design

Purpose and Hypotheses. The purpose of this study is to determine the relationship between different personality types, according to the dichotomies of the Myers-Briggs Type Indicator, and exercise behaviors, such as current intensity, frequency, and duration of exercise, and exercise preferences, such as location, environment, aerobic level, and structure, among college students. The first hypothesis relates to exercise preferences. It is hypothesized that extraversion will be associated with a preference for group exercise and structured exercise, Intuition with a preference for exercise outdoors, Feeling with a preference for aerobic exercise, and Judging with a preference for structured exercise. The second hypothesis relates to exercise behaviors. It is hypothesized that Extraversion will be associated with a high amount of exercise.

Data Analyses. Univariant Analyses of Variance (ANOVA) will be used to determine significant differences at a level of .05 or less between the personality dichotomies and types and the exercise preferences and behaviors.

Results

Keirsey Temperament Sorter Reliability

Reliability coefficients for the four dichotomies of the KTS were determined. The Extraversion vs. Introversion dichotomy resulted in a coefficient of .54, indicating that this subscale has low reliability. The Sensing vs. Intuition dichotomy resulted in a coefficient of .68, indicating that this subscale also has low reliability. The Thinking vs. Feeling dichotomy and the Judging vs. Perceiving dichotomy both resulted in high reliability coefficients of .78 and .81 respectively.

Personality Types and Exercise Preferences and Behaviors

The ANOVAs indicated significant differences at a level of.05 of lower for two of the personality dichotomies and three of the exercise preferences. There was a significant difference between Thinking and Feeling of 0.043 for the preference of aerobic or anaerobic exercise. Feeling was associated with a preference for aerobic exercise, while Thinking was associated with a preference for anaerobic exercise. There was a significant difference between Thinking and Feeling of 0.009 for the preference of exercise company. Feeling was associated with a preference for exercise with a few others, while Thinking was associated with a preference for exercise alone. There was a significant difference between Judging and Perceiving of 0.021 for the preference of exercise location. Judging was associated with a preference for exercise at the gym, while Perceiving was associated with a preference for exercise outside. However, there were no significant differences between any of the personality types or dichotomies for exercise behaviors.

Table 1

ANOVA Significant Differences between Personality Factors and Preferences

	T vs. F		J vs. P	
	Mean	SD	Mean	SD
Preferences				
Alone	1.478	.505		
With a few others	1.774	.425		
	F(1,76) = 7.20, **p = 0.009**			
Aerobic	1.661	.478		
Anaerobic	1.417	.504		
	F (1,79) = 4.25, **p = 0.043**			
At the gym			1.167	.376
Outside			1.438	.512
			F(1,75) = 5.59, **p = 0.021**	

Discussion

The results of this study indicated a preference for aerobic exercise and exercise with others for the personality factor Feeling and a preference for exercise at a gym for the factor Judging. On the other hand, the results showed a preference for anaerobic exercise and exercise alone for Thinking and a preference for exercise outside for Perceiving. Because feeling exhibits a desire to relate to others, it is easy to see why feelers would want to exercise with other people. Exercise could be another outlet for developing relationships and could also be a form of motivation because feelers make decisions based on others, they could need that pressure to decide to exercise. A social environment can also surround aerobic exercise, especially seen in aerobic dance classes or running groups, which could explain the association between aerobic exercise and Feeling. The judging personality factor shows an appreciation for structure and tradition, which could explain why judgers would prefer to exercise at a gym, the most conventional location for exercise.

Perceivers, who are less structured, could enjoy the spontaneity and openness of nature, explaining their preference for exercise outside.

Only the association between aerobic exercise and Feeling supported the hypotheses. The other results did not support the other parts of the first hypothesis regarding exercise preferences, and they did not support the second hypothesis regarding exercise behaviors because there were no significant differences between any personality types and exercise behaviors. These hypotheses were based on the assumed relationships between the MBTI and the FFM and the relationships between the FFM and exercise preferences. Previous research indicated that the MBTI and the FFM were related by Extraversion with Extraversion, Intuition with Openness to Experience, Feeling with Agreeableness, and Judging with Conscientiousness (Furnham, Moutafi, & Crump, 2003). Previous research also indicated associations between the five factors and specific exercise preferences and behaviors. Extraversion was associated with a high amount of exercise, a motive of socializing, and a preference for structured exercise. Conscientiousness was associated with a preference for structured exercise. Openness to Experience was associated with a preference for outdoor exercise. Agreeableness was associated with a preference for aerobic exercise (Courneya & Hellsten, 1998). However, the KTS was not reliable enough for this comparison. As demonstrated by the resulting poor reliability coefficients of this study, the KTS was not a good test for the subscales of the MBTI and so could not be related similarly to the FFM or its associated exercise characteristics as the MBTI had been in previous research.

Therefore, this study encourages future research on the relationship between personality types and exercise preferences and behaviors using the Myers-Briggs Type Indicator, rather than the KTS. Even though the MBTI has more items and takes longer for completion, it should be used over the KTS because of its superior reliability (Consulting Psychologists Press, 2007). Future research should also more greatly consider and concentrate on the usefulness of this study's results on practical application. Future research should explore if knowledge of one's exercise preferences based on personality types impacts initiation, improvement, and maintenance of physical activity in order to benefit the greater population.

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