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The Study of a Generalized Fitness Education Program's Effect on Personality Traits

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The Study of a Generalized Fitness Education Program's Effect on Personality Traits

> Garrett Schliep Honors Program

Abstract

This longitudinal study was to measure the influence of a generalized fitness education program on the percentile of individuals' personality traits in college aged individuals. The personality traits are those determined in the Five Factor Model of Personality. The Five Factor Model of Personality is a beneficial tool used in exercise psychology that refers to a broad domain of personality traits often referred to as the "Big Five". The findings reject the hypothesis that a fitness education program would shift an individual's personality a statistically significant amount.

Introduction

As extensively studied and known, demographic and situational variables such as age, gender, race/ethnicity, accessibility to resources, etc. have a large correlation and research base when being linked with personality traits (Lox, 2020). Although, there have been studies performed using these variables comparatively with their link to personality, there has been few covering the effect of personality on physical exercise. A newly emerging field of study shows that personality has a role in physical behaviors of an individual (Lox, 2020). The Factor Five Model of Personality is one of the most widely accepted and used personality theories to date. This theory consists of five separate traits and exist in all individuals to some degree (Lox 2020). The question posed is whether a generalized fitness education program is able to influence the percentiles of personality traits based on the Factor Five Model of Personality in college aged individuals.

This study was conducted longitudinally. A longitudinal study is determined by using the same research participants over a determined and extended period of time (Caruana, 2015). This study examined, through two surveys, the personality trait percentile before and after taking the Fitness for Living course offered at University of Nebraska at Omaha (UNO). The first of these surveys was administered initially to collect anonymous demographic and variable information while the second was the personality test. The researcher's hypothesis was that a fitness education program would shift an individual's personality a statistically significant amount in the positive direction in all traits besides neuroticism which would move in a negative direction. The null hypothesis suggests that there would not be a statistically significant shift in an individual's personality trait percentiles. There are a few limitations when looking at previous research to compare to this topic. The first being a lack of abundance on previous studies done over the

effect of exercise and health education on an individual's personality trait expression. This causes abnormalities or to be overemphasized as there isn't enough average data collected. The second limitation is the small number of survey sample size in the study completed. There could easily be a skew in the data due to the limited sample size.

Background Information

The traits included in the Factor Five Model of Personality are Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (Lox, 2020). When looking at how an individual scores in each of these dimensions, it is seen as being high or low. All traits listed play a large role in one's motivation and attitude toward physical activity behaviors. Agreeableness has not been linked to any known influence on behavior (Lox, 2020). High Openness to Experience results in an outdoor activity preference (Lox, 2020). A trait of Openness to Experience can influence one's preference to physical activity indoors or outdoors. Higher levels of self-reported exercise, strenuous exercise, enjoyment, preferring exercise with others, overcoming barriers, and exercise intentions are shown typically in individuals with a high Extraversion trait (Lox, 2020). A person with a high Conscientiousness trait shows more scheduled exercise, higher levels of self-reported exercise, overcoming barriers, and exercise intentions (Lox, 2020). A high Neuroticism trait shows lower levels of exercise adherence, enjoyment, exercise intentions, and self-reported exercise while also showing higher levels of barriers, and extrinsic motivations (Lox, 2020).

There have been multiple studies related to these same factors in the field of research in exercise psychology that show a relationship to an individual's motivation to engage in physical activity and certain personality traits more prevalent in their big five model. However, the purpose of this research is to show how a fitness education program that is equal parts educationally enhancing as well as physically engaging is able to influence these determined percentiles of an individual's personality before and after completing this course.

Researchers are interested in psychological antecedents. Psychological antecedents are the characteristics of different personalities that may influence behavior (Sutin, 2016). This is of particular interest when researching the psychological consequences or the way in which physical activity might change aspects of our personality such as emotional stability (Lox, 2020). According to Lox, personality is defined as "underlying, relatively stable psychological structures and processes that organize human experience and shape a person's actions and reactions to the environment" (p.178). Personality can consist of two layers of response. Core responses, or typical responses, are essentially how an individual would generally react to their environment which compromises the first layer of an individual's response (Sutin, 2016). The second of these layers consists of role-related behaviors which are the behaviors and reactions an individual has in different environmental contexts. The second layer of an individual's response, the role-related behaviors, depends on the environment one is in and is often less stable than the core responses of an individual (Sutin, 2016). Depending on the level of personality traits expressed in individuals, these responses such as role-related behaviors have the potential to look different even when put through similar situations.

Literature Review

Personality traits constitute significant portions psychologically when predicting health maintenance behaviors, long-term health outcomes, and mortality (Chapman, 2011). And though all Big Five traits have been linked and researched with the relation to physical activity, the strongest links have been found for conscientiousness and neuroticism (Hampson, 2012). Individuals with high neuroticism and low conscientiousness have been tied to more frequents negative health behaviors like being sedentary, smoking, alcohol or drug use, and unhealthy eating habits (Allen, 2017). Inversely individuals linked with high conscientiousness and low neuroticism have been associated with positive health behaviors as well as higher levels of physical activity engagement (Sutin, 2016). Following are studies done of each trait in relation to physical activity.

Conscientiousness

Research done by Mirjam Stieger and her team conclude a finding in the efficacy of physical activity interventions may depend on personality traits (2020). While examining the role that personality traits played in working adults throughout a five-week physical activity intervention program. they tested whether personality traits were a predictor in the individual differences in change of daily steps over time. Stieger found that conscientiousness was able to predict a greater increase in steps_a which was in line with research previously done that showed the use of planning in an exercise goal's achievement (2020). It was also found that there were not significant effects that openness, agreeableness, or extraversion played in the adherence to this physical activity intervention (Stieger, 2020). This was in line with past research conducted. This showed significantly high correlation between one's level of Big Five conscientiousness and the probability of adherence in a physical activity intervention program. Prior studies have

shown the ability of Big Five conscientiousness to move if intervention is introduced properly according to the level of the trait within the individual (Stieger, 2020).

Neuroticism

A study conducted by Justus R. Potgieter examined the relationship between adherence and dropping out of exercising at an on-campus facility for over one year by following onehundred-sixteen participants who were labeled as either adherers or dropouts based upon their adherence to exercise (1995).Since no differences were shown in scores between the dropouts and adherers, no correlation was found about adherence in relation to extraversion scores (Potgieter, 1995). Keeping in line with prior research, it was seen that the dropouts recorded significantly higher scores in neuroticism than the adherers did (Potgieter, 1995). Study proved lack of connection between adherence and extraversion while showing strong correlation between adherence and neuroticism.

Extraversion

A meta-anaylsis completed by Kathryn Wilson and her team showed the independence of extraversion to variables such as geographic region or experimental demand (2015). In the team's meta-analysis of extraversion's relationship with physical activity, the link results from a heightened tendency to seek out strong sensory stimulation, like that of physical activity, among extraverts whereas introverts tend to avoid it (Wilson, 2015). Extraverts have a higher probability of being exposed to settings that offer more opportunities to be physically active due to their typical increased social and outgoing behaviors. This higher level of physical activity in extraverts could fulfill an internal drive for socialization and stimulation (Wilson, 2020).

Openness

Although only a small link between openness and physical activity was seen, the metaanalysis created by Wilson and her team opened possibilities for areas of potential deeper research in this relationship (Wilson, 2020). Those who had high levels for openness are more receptive to the idea of trying new opportunities and experiences, meaning these individuals are more likely to engage in different types of physical activity for the experience of it rather than individuals who test low in openness (Wilson, 2020). Individuals with low levels of openness tend to shy away from new experiences and perform physical activity in a routine, established manner (Wilson, 2020).

Methods

Participants

The participants of this study consisted of twenty college students attending the University of Nebraska Omaha's (UNO) College of Education, Health and Human Sciences in the school Health and Kinesiology. All participants were enrolled in a section of the Fitness for Living course (KINS1800). The participants ranged in age from 18-21 and were a mix of females and males.

All participants were signed up for the fitness course on Tuesday and Thursday mornings from 9a.m. to 9:50a.m. on the UNO campus. The class was held from August 23rd, 2022, until December 8th, 2022, with pre- and post- data surveys being administered on August 25th, 2022, and November 22nd, 2022. This period of time consists of twelve and a half weeks between the initial and final data collections. All twenty participants voluntarily joined the study by verbally

stating willingness to the researcher to participate and additionally read an introductory paragraph prior to electronically signing to agree for participation in the study.

Figure 1 represents the number of participants within each age group. All of the participants were undergraduate students between the ages of 18-21. Of these participants, twenty percent were 18, forty-five percent were 19, thirty percent were 20, and 5 percent were 21.

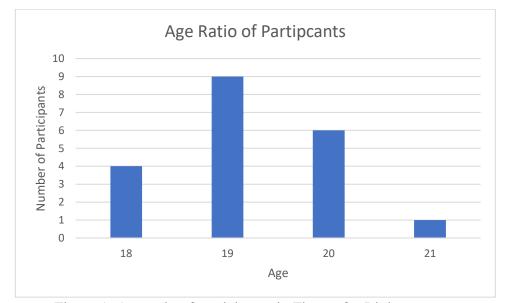


Figure 1: Age ratio of participants in Fitness for Living course.

Figure 2 describes the gender ratio of participants. As noted in the graphic, more females participated in this course than males. The ratio of females to male participants was sixty percent to forty percent.

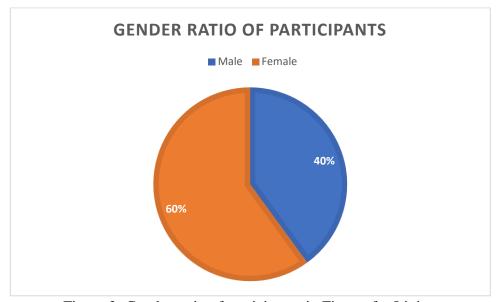


Figure 2: Gender ratio of participants in Fitness for Living course.

Design

All data obtained by subjects in the study was kept confidential by means of encrypted filing with access only to primary researchers conducting the study. All subjects provided a consent of release to use their individual data with a process of data analysis and with legal guarantee of confidentiality. The demographic survey was administered by the Google Forms database system. The Five Factor Model of Personality results were administered through a commonly sourced database that allows individual to share results to the primary researcher. The Five Factor Model Survey that was used was created by Jeff Potter, a current Chief Technology Officer (CTO) of a non-profit organization and has been used in almost sixty other research studies from the time it was created and has been utilized by millions of others (Potter, 2000). In the pre-test, all subjects took a series of two surveys. One of these were administered to determine their personality percentiles in the Five Factor Model (See Appendix 1.2). The second survey was used to assess a demographic on the subject population. The demographic survey asked questions related to biological sex/gender, age, perceived level of fitness, estimated Godin Leisure Time Exercise Categories, race/ethnicity, and perceived access to resources in environment (See Appendix 1.1). These demographics were used within several combinations or individually to look at comparisons on how demographic variables are influenced compared to others. The perceived level of fitness was taken on a scale of one to ten with ten being the most fit the subject has ever been and one being the least. The Godin Leisure Time Exercise Categories is a validated categorical system that divides amount of vigorous, moderate, and light exercise performed during a weeklong period to determine which of the following three categories they align most with: Active, Moderately Active, and Insufficiently Active (Godin, 1985). Separating these variables independently could show a correlation into whether specific demographics demonstrate a relationship to any factor of the Five Factor Model.

Performance of a post-program survey was conducted and administered the same as the initial survey. Both pre- and post- personality surveys used the same platform. The demographic survey taken at the beginning of the semester was not readministered. All questions on the Five Factor Model survey were identical and assessed the same way. The initial and post survey percentiles were split into specific traits and compared on an individual subject level, a subject population level, as well as a demographic level.

Analysis

This study deemed significance in change of a trait based upon whether the trait being observed went in either direction beyond or equal to five percentiles on the post survey when compared to the initial survey results. The value of five percentile points was deduced due to the probability factors of p where a probability becomes significant after 0.05. This can be transferred to 5% where on the 100-percentile scale can be considered statistically significant as well. A trait change was deemed insignificance to any trait that is within and below five percentiles in either direction on the post survey when compared to the results of the initial survey.

Procedure

Each participant was verbally given information by the researcher about the study before survey participation. The survey was administered following the description provided. The participants were asked to read an introductory paragraph about the survey to give consent before participating in the survey. Following completion of the demographic portion of the survey in Google Forms, participants were asked to submit to researchers for analysis. Once the Personality Test was complete, participants sent the screenshot of their pre-test personality results to the professor that sent the researchers a folder of all the results without names attached. This measure was taken to protect their anonymity. The data was entered into an Excel spreadsheet to be processed. The post survey was administered identically to the pre-survey.

Results

Participant results from the demographic survey can be found in Table 1. There were twelve female participants and eight male participants. Fifteen participants were Caucasian/White, three of the participants were Hispanic, and two of the participants were Black/African American. Additionally, in the table are each of the participants' current perceived levels of personal fitness and perceived levels of personal access to resources to engage in physical activity.

Survey Taker #	Gender	Race/Ethnicity	Perceived Fitness	Perceived Access
p1	Female	White	6	7
p2	Male	White	9	9
p3	Male	White	9	10
p4	Female	White	7	10
p5	Female	White	1	4
p6	Female	White	6	9
р7	Female	White	8	9
р8	Male	White	7	9
p9	Male	White	10	10
p10	Female	Hispanic	8	8
p11	Male	Hispanic	7	10
p12	Female	White	8	10
p13	Female	White	10	10
p14	Male	Hispanic	10	10
p15	Male	Black/African American	9	8
p16	Male	Black/African American	8	6
p17	Female	White	5	6
p18	Female	White	6	7
p19	Female	White	3	8
p20	Female	White	7	10

Table 1: Demographic Variables of Participants in Study

Godin Leisure scores, found in Table 2, are based on a 7-day period that consists of bouts of physical activity for more than fifteen minutes in each bout. Categories are separated into strenuous, moderate, and mild/light. Participants listed the number of times they engage in each activity each week. The Godin scores were totaled as categorized further based on time: Active (A), Moderately Active (M), and Insufficiently Active or Sedentary (S).

Strenuous	Moderate	Light	Total	Category
0	5	6	11	S
45	30	3	78	А
63	30	21	114	А
18	25	15	58	А
0	15	0	15	М
18	25	21	64	А
36	30	12	78	А
9	25	15	49	А
54	15	0	69	А
45	10	3	58	А
27	25	21	73	А
72	35	6	113	А
63	15	3	81	А
27	25	21	73	А
63	15	12	90	А
63	5	9	77	А
18	10	6	34	А
27	10	12	49	А
0	10	9	19	М
45	15	9	69	A

Table 2: Godin Leisure Time Activity Scores and Categories; A- Active, M- Moderately Active,
S- Sedentary

O-Pre	C-Pre	E-Pre	A-Pre	N-Pre
48	29	39	60	54
69	74	90	39	43
43	67	34	91	37
95	86	34	95	48
88	38	77	33	91
29	72	9	63	79
50	44	61	28	24
87	71	69	56	73
34	97	23	57	63
95	80	96	91	57
80	95	78	45	11
17	90	62	60	45
29	48	65	56	4
48	29	39	60	54
53	91	85	57	29
41	52	26	86	50
73	58	44	84	76
52	60	37	34	23
54	68	23	4	75
24	31	89	55	68

Table 3: Percentiles of Each Personality Exhibited in Individuals before the fitness course.

O-Post	C-Post	E-Post	A-Post	N-Post
55	36	41	58	56
64	78	81	39	38
47	65	36	87	42
89	86	35	78	42
84	39	85	35	90
32	76	13	69	51
41	50	63	21	24
84	67	67	61	63
34	93	25	58	62
80	78	94	73	54
36	90	77	55	17
25	86	63	60	41
36	48	66	53	9
22	35	39	62	43
61	80	73	58	28
44	36	36	78	48
68	56	40	81	70
47	65	39	46	34
59	68	28	19	76
37	37	82	55	65

Similarly, table 4, show percentiles based on post-survey data.

Table 4: Percentiles of Each Personality Exhibited in Individuals after the fitness course.

After having pre- and post- data, differences between scores/percentiles were able to be determined (Table 5). Scores that moved by five or more percentile points were deemed statistically significant. When looking at the difference in the Openness category, the difference in scores of 14 students were considered statistically significant, 6 of these being positive increases in expression of the trait. In Conscientiousness, statistical difference was found in 8 out of the 20 students. Of these, 5 were positive increases in expression of the trait. Extraversion resulted in 6 of the 20 students' values moving a statistically significant amount where half were positive increases in expression of the trait. When looking at the agreeableness trait, 9 out of 20

moved a statistically significant amount, 5 of which positively increased in expression of the trait. Neuroticism resulted in half of the participants moving a statistically significant amount. Of these ten, 4 moved in positive increases of expression.

O-Stat Diff	C-Stat Diff	E-Stat Diff	A-Stat Diff	N-Stat Diiff
7	7	2	-2	2
-5	4	-9	0	-5
4	-2	2	-4	5
-6	0	1	-17	-6
-4	1	8	2	-1
3	4	4	6	-28
-9	6	2	-7	0
-3	-4	-2	5	-10
0	-4	2	1	-1
-15	-2	-2	-18	-3
-44	-5	-1	10	6
8	-4	1	0	-4
7	0	1	-3	5
-26	6	0	2	-11
8	-11	-12	1	-1
3	-16	10	-8	-2
-5	-2	-4	-3	-6
-5	5	2	12	11
5	0	5	15	1
13	6	-7	0	-3

Table 5: Difference of Pre- and Post- Test Personality scores; Post-Score minus Pre-Score

The average Final Personality differences for each trait can be seen in Figure 3. Openness on average went down by 3.20%. Conscientiousness went down on average by 0.55%. Extraversion on average increased by 0.15%. Both Agreeableness and Neuroticism went down on average by 0.4% and 2.55% respectively.

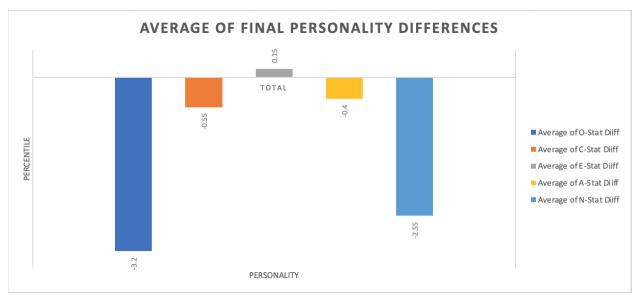


Figure 3: Average Difference of Pre and Post Personality Scores Among Participants

When looking at the differences between all personality traits in relation to gender, males tended to on average have larger overall differences in personality percentiles between pre and post tests on average (Figure 4).

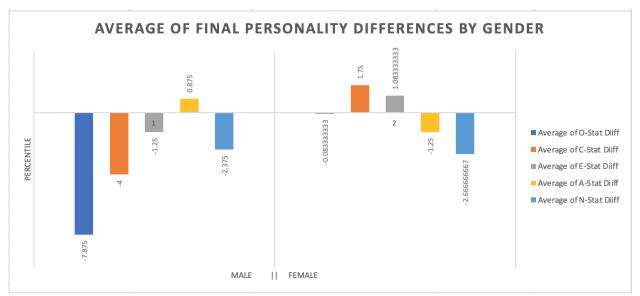


Figure 4: Average Difference of Pre and Post Personality Scores By Gender Among Participants

The research also looked into how personality traits were related to perceived values of personal physical fitness and access to physical activity resources. Table 6 displays the perceived levels of fitness and their average personality scores for each of the Big Five.

Perceived Fit.	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
1	88	38	77	33	91
3	54	68	23	4	75
5	73	58	44	84	76
6	43	53.67	28.33	52.33	52
7	71.5	70.75	67.5	62.75	50
8	50.75	66.5	61.25	66.25	44
9	55	77.33	69.67	62.33	36.33
10	37	58	42.33	57.67	40.33

Table 6: Perceived Level of Fitness and Average Personality Scores of Participants

Following, Table 7 displays the relationship between participants perceived level of

access to physical activity resources and average personality scores for each of the Big Five.

Perceived Acc.	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
1	88	38	77	33	91
3	54	68	23	4	75
5	73	58	44	84	76
6	43	53.67	28.33	52.33	52
7	71.5	70.75	67.5	62.75	50
8	50.75	66.5	61.25	66.25	44

Table 7: Perceived Access to Physical Activity Resources and Average Personality Scores of Participants

Discussion

Openness was the largest change on average. Participants throughout the course of this program on average became 3.2% less open than they were when they came in. This statistic shows that students became more focused on what they enjoy, prefer, and what works. This could disengage them from new opportunities in the future. Neuroticism dropped an average of

2.55% showing that throughout the course of the program, participants lowered their fear/negative behaviors associated with physical activity. As known, aforementioned, and studied, neuroticism is associated with barriers to entry and poor adherence to a routine (Potgieter, 1995). Lowering this score shows that individuals were more likely to engage in physical activity in the future.

Males tended to have a greater overall shift in percentiles between pre- and post- tests. A trend in data shows that females tended to have an average positive difference over males which tended to have a negative difference. This female trend could be explained by eliminating the barrier to entry within exercise which is an obstacle caused from neuroticism.

Analyzing the trend of Neuroticism showed to be negatively correlated. As the perceived level of fitness increased in participants, the percentile of neuroticism decreased. This is an unsurprising observation due to neuroticism being associated with negative behaviors and habits. An individual scoring high neuroticism is less like to adhere to an exercise routine and express larger difficulty with overcoming barriers to physical activity than an individual who scores low in this category. Another trend seen is the increase of extraversion in participants as their perceived level of fitness increases. This is a positive correlation expressed.

The trends seen in the Perceived Access to Physical Activity Resources match those seen in the Perceived Level of Fitness. Neuroticism is inversely related with Perceived Access to Physical Activity Equipment. Access to resources needed to engage in physical activity is a barrier that individuals who test high in neuroticism see as a large obstacle to exercise. Extraversion is positively correlated with Perceived Access to Physical Activity Equipment.

With all categories of personality traits being lower than a five-point average difference, the results show that the traits are relatively set. Personality traits in individuals can be very definitive and set in place for a long portion of time. Seeing that these personality traits did not shift a statistically significant is unsurprising. With this being one of the most widely accepted models of personality, one's relationship with physical activity can be relatively permanent and immobile. Therefore, this study reaffirms that these personality traits can be a good indicator of one's relationship to physical activity.

It leads to the view of this relationship not through the lens of how one can make the personality traits change, but how can one adapt to the personality traits in order to change. Understanding the facilitators and barriers to one's physical activity habits is very difficult however beneficial. By doing this, one can understand and work through their enjoyments of physical activity and what could be holding them back from progressing or adhering to long term physical activity engagement. The core responses held by individuals who consist in different percentile ranges of traits would look similar in nature. However, the secondary behavioral response, the role-related behavior can vary by looking at situational responses and prominent personality characteristics in individuals.

Limitations of Study

One limitation of this study was the sample size. Due to sampling of current demographic available, representative populations were unable to be accurately determined. This lack of determination would show an unclear depiction of analysis and show potentially false relationships between variables. Through this sampling size limitation, race/ethnicity was unable to be examined. An additional limitation of this study was activity measures of the sampling population. Most participants are regularly active due to requirement of their registration in fitness for living course and/or their chosen path of study. This invalidated the Godin Leisure Time Exercise Questionnaire due to the lack of moderate and sedentary individuals in the sampling pool. This lack of variation in activity would show an unclear depiction of analysis and show potentially false relationships between variables. Through this sampling limitation, Godin Leisure scores were also unable to be examined.

Conclusion

To conclude, no values showed significance of greater than 5% difference in either direction. This rejects the researcher's hypothesis that a fitness education program would shift an individual's personality a statistically significant amount. The null hypothesis is supported that a fitness education program would not shift an individual's personality in a statistically significant manner. Moving forward, additional research to further in this area could be using older adults or a more diverse data pool for activity requirements. Additional focuses of study could investigate the specific motivations of individuals expressing a high percentile of neuroticism.

Appendix

1.1 Demographic Survey



Demographic Research Variables

For my research, I need you to fill out the following demographic variables and information for me. This information will be used as comparators in my Senior Thesis Research Study over the influence of a generalized fitness education program on personality characteristics in individuals. All of your information will stay confidential and be seen by my eyes only. <u>Please answer honestly</u>. It will help me out tremendously when running the data! If you have any questions, email me at gschliep@unomaha.edu or text at (402) 310-9229. Thank you so much in advance!

garrett.schliep@gmail.com (not shared) Switch account

 \odot

* Required

What is your biological sex/gender? *

) Male.

– I
 Female.
i cinaic.

Prefer not to say.

What is your race/ethnicity? *
O White.
O Black or African American.
O American Indian or Alaska Native.
Asian.
Native Hawaiian or Other Pacific Islander.
O Other:
What is your perceived Level of Fitness? *
1 2 3 4 5 6 7 8 9 10
Least Fit I've Ever OOOOOOOOOOOOBeen. Been.
What is your perceived Access to Physical Activity Resources? *
1 2 3 4 5 6 7 8 9 10
I Have No OOOOOOOOI Have Access Whenever Access.

Godin Leisure Time Exercise Questionnaire Description

During a typical 7-Day period (a week), how many times on the average do you do the following kinds of exercise for more than 15 minutes during your free time (write on each line the appropriate number). Answer for the following Three questions.

STRENUOUS EXERCISE (HEART BEATS RAPIDLY) *

How many times on the average do you do the following kinds of exercise for more than 15 minutes during your free time(Answer should be **# of Times/Week**. <u>NOT</u> Activities you do) (e.g. of activities in this Category: running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling)

Your answer

MODERATE EXERCISE (NOT EXHAUSTING) *

How many times on the average do you do the following kinds of exercise for more than 15 minutes during your free time(Answer should be **# of Times/Week**. <u>NOT</u> Activities you do) (e.g. of activities in this Category: fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)

Your answer

MILD/LIGHT EXERCISE (MINIMAL EFFORT) *		
How many times on the average do you do the following kinds of exercise for more minutes during your free time(Answer should be # of Times/Week . <u>NOT</u> Activities do) (e.g. of activities in this Category: yoga, archery, fishing from river bank, bowlin horseshoes, golf, snow-mobiling, easy walking)	you	5
Your answer		
I give permission for Garrett Schliep to use my answers in his Senior Thesis Research Study with knowledge that all of my answers will be held confiden and never released to the public.		*
Yes, I give my Permission.		
No, I do not give my Permission.		
O Other:		
Submit	Clear fo	orm

1.2 The Big Five Project Personality Test

1. sorgoing, sociable Strongly Diagee 1 2 3 4 5 Strongly Agree 2. sorongassionate, has a soft heart Strongly Diagee 1 2 3 4 5 Strongly Agree 3. Tands to ediogranized Strongly Diagee 1 2 3 4 5 Strongly Agree 4. Is charact, handle stress well Strongly Diagee 1 2 3 4 5 Strongly Agree 5. Has charactive personality Strongly Diagee 1 2 3 4 5 Strongly Agree 6. Has assertive personality Strongly Diagee 1 2 3 4 5 Strongly Agree 7. To spectful, treats other symmetry Strongly Diagee 1 2 3 4 5 Strongly Agree 8. Tands to be hav Strongly Diagee 1 2 3 4 5 Strongly Agree 9. Strongly Diagee Strongly Diagee 1 2 3 4 5 Strongly Agree 1. Strongly Diagee Strongly Diagee 1 2 3 4 5							
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16. Tends to be quiet							
and the second	Strongly Disagree	1 🔿	2 🔾	3 🔿	4 〇	5 🔾	Strongly Agree
17. Feels little sympathy for others							
	Strongly Disagree	1 🔘	2 🔾	3 🔿	4 🔿	5 🔾	Strongly Agree
18. Is systematic, likes to keep things in order							
	Strongly Disagree	10	2 〇	3 🔿	4 ()	5 ()	Strongly Agree
19. Can be tense							
19. Call be tellse	Strongly Disagree	10	20	30	40	50	Strongly Agree
20. Is fascinated by art, music, or literature	ouoligi) biougice						Should here
20. Is fascinated by art, music, or interature	Strongly Disagree	10	20	20	10	50	Strongly Agree
	Strongry Disagree	10	20	30	40	50	Subligiy Agree
21. Is dominant, acts as a leader							
	Strongly Disagree	10	20	3 ()	40	50	Strongly Agree
22. Starts arguments with others							
	Strongly Disagree	10	2 🔾	3 🔿	4 ()	5 🔿	Strongly Agree
23. Has difficulty getting started on tasks							
	Strongly Disagree	10	2 🔘	3 🔿	4 🔾	5 🔿	Strongly Agree
24. Feels secure, comfortable with self							
	Strongly Disagree	10	2 🔿	30	4 ()	5 ()	Strongly Agree
25. Avoids intellectual, philosophical discussions							
20. Avoids intellectual, pintosophical discussions	Strongly Disagree	1.0	20	30	40	50	Strongly Agree
	Subligity Disagree					50	Subley refee
26. Is less active than other people	Strongly Disagree				-		Character Amount
	Subligity Disagree	10	20	50	40	50	Strongry Agree
27. Has a forgiving nature							
	Strongly Disagree	10	2 ()	3 ()	4 ()	50	Strongly Agree
28. Can be somewhat careless							
	Strongly Disagree	10	2 🔾	3 🔿	4 🔿	5 🔾	Strongly Agree

29. Is emotionally stable, not easily upset						
	Strongly Disagree 1 O	2 🔍	3 🔾	4 🔾	5 🔍	Strongly Agree
30. Has little creativity						
	Strongly Disagree 1 O	20	30	40	50	Strongly Agree
31. Is sometimes shy, introverted	Strongly Disagree 1 O	2 🔿	3 🔿	4 🔾	5 🔿	Strongly Agree
32. Is helpful and unselfish with others						
	Strongly Disagree 1 O	2 🔾	3 🔾	4 🔾	5 🔾	Strongly Agree
33. Keeps things neat and tidy	Strongly Disagree 1 〇	2 🔾	3 🔿	4 🔿	5 🔿	Strongly Agree
34. Worries a lot						
	Strongly Disagree 1 O	2 🔾	3 🔿	4 🔾	5 🔾	Strongly Agree
35. Values art and beauty	Strongly Disagree 1	2 0	30	40	5 0	Strongly Agree
36. Finds it hard to influence people	outingly bloughter 1 C		-		-	
continues in nuite to innucince people	Strongly Disagree 1 O	2 🔿	3 🔿	4 ()	5 🔿	Strongly Agree
37. Is sometimes rude to others						
	Strongly Disagree 1 O	2 🔾	3 🔾	4 🔾	5 🔾	Strongly Agree
38. Is efficient, gets things done					1	
	Strongly Disagree 1	20	30	4 0	50	Strongly Agree
39. Often feels sad	Strongly Disagree 1 O	2 🔾	3 🔿	4 🔾	5 🔾	Strongly Agree
40. Is complex, a deep thinker						
	Strongly Disagree 1 O	2 🔾	3 🔿	4 ()	5 🔾	Strongly Agree
41. Is full of energy	Strongly Disagree 1 O	2 •	3 0	4 🔾	5 •	Strongly Agree
42. Is suspicious of others' intentions						
	Strongly Disagree 1 O	2 🔾	3 🔿	4 🔾	5 🔿	Strongly Agree
43. Is reliable, can always be counted on						
	Strongly Disagree 1 O	2 〇	3 0	4 ()	5 0	Strongly Agree

44. Keeps their emotions under control							
	Strongly Disagree	10	2 🔾	3 0	4 ()	5 🔾	Strongly Agree
45. Has difficulty imagining things							
	Strongly Disagree	1 🔿	2 🔾	3 🔿	4 ()	5 🔾	Strongly Agree
46. Is talkative							
	Strongly Disagree	1 🔍	2 🔍	3 🔾	4 🔾	5 🔾	Strongly Agree
47. Can be cold and uncaring							
	Strongly Disagree	1 🔍	2 🔍	3 🔘	4 🔘	5 🔾	Strongly Agree
48. Leaves a mess, doesn't clean up							
	Strongly Disagree	1 🔿	2 🔾	3 🔿	4 🔿	5 🔾	Strongly Agree
49. Rarely feels anxious or afraid							
	Strongly Disagree	1 🔘	2 🔘	3 🔘	4 🔿	5 🔿	Strongly Agree
50. Thinks poetry and plays are boring							
······································	Strongly Disagree	1 🔘	2 🔘	3 🔘	4 🔾	5 🔾	Strongly Agree
51. Prefers to have others take charge							
cristicite to have oblicite and charge	Strongly Disagree	10	2 🔾	3 🔾	4 0	5 🔾	Strongly Agree
52. Is polite, courteous to others	0, 0						
52.13 ponte, cour teous to others	Strongly Disagree	10	2.0	3 0	4 0	5 0	Strongly Agree
53. Is persistent, works until the task is finished							
55. Is persistent, works until the task is misned	Strongly Disagree	1.0	20	3.0	4 0	5.0	Strongly Agree
	outingly Disagice		2			50	ouoligi Agroo
54. Tends to feel depressed, blue	Strongly Disagree	10	20	20	4.0	5.0	Strongly Agree
	Subligiy Disagree	10	20	30	40	30	Subligiy Agree
55. Has little interest in abstract ideas	0. I.D.						
	Strongly Disagree	10	20	30	40	50	Strongly Agree

56. Shows a lot of enthusiasm						
	Strongly Disagree 1	2 •	3 🔍	4 🔍	5 🔍	Strongly Agree
57. Assumes the best about people						
	Strongly Disagree 1	• 2 •	3 🔿	4 🔾	5 🔿	Strongly Agree
58. Sometimes behaves irresponsibly						
	Strongly Disagree 1	• 2 •	3 🔾	4 🔾	5 🔾	Strongly Agree
59. Is temperamental, gets emotional easily						
	Strongly Disagree 1	20	3 🔾	4 🔾	5 🔾	Strongly Agree
60. Is original, comes up with new ideas						
	Strongly Disagree 1	0 2 0	3 ()	4 ()	5 ()	Strongly Agree
61. Is politically liberal						
	Strongly Disagree 1	2 0	3 0	4 0	50	Strongly Agree

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