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Health Behaviors Contributing to Overall Perceived Health, Mental and Physical Health Status, and Functional Impairment in Psychologists and Trainees

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Health Behaviors Contributing to Overall Perceived Health, Mental and Physical Health
Status, and Functional Impairment in Psychologists and Trainees

by

Natasha J. Brown, M.S.

Master of Science
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The undersigned committee,
having examined the attached doctoral research project,
“Health Behaviors Contributing to Overall Perceived Health, Mental and Physical Health
Status, and Functional Impairment in Psychologists and Trainees”
by Natasha J. Brown, M.S.
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Abstract

Health Behaviors Contributing to Overall Perceived Health, Mental and Physical Health Status, and Functional Impairment in Psychologists and Trainees

By

Natasha Joy Brown, M.S.

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This study investigated the health behaviors and overall perceived health among psychologists and psychology trainees. Results revealed significant correlations between overall perceived health and physical activity, BMI, fruit and vegetable intake. Additionally, results revealed significant correlations between days of poor mental health and physical activity, fruit intake and vegetable intake. Lastly, results revealed correlations between days of functional impairment and physical activity. The results of this study expand upon the growing literature related to health professionals' personal health behaviors and how they impact one's perceived health. Further research is required to identify and expand investigation of factors impacting psychologists and trainees' overall perceived health and functional impairment.

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Introduction

Personal health behaviors are vital in improving one's overall wellness and perceived health (Belloc & Breslow, 1976). Health behaviors are of increasing interest because of the increase in chronic diseases, such as stroke, heart disease, and diabetes, which are preventable and are among the most costly and common health problems in the United States (CDC, 2012). A recent study (Yearwood, 2014) examined the health behaviors of psychologists and psychology trainees and found that both groups reported practicing a greater number of health enhancing behaviors compared to equivalent U.S. adults, yet perceived their health statuses to be worse. Therefore, the purpose of the current study is to explore possible explanations for this unusual finding. Specifically, this study will examine potential factors associated with psychology trainees reporting significantly less very good or excellent health statuses when compared to their comparable control sample. Additionally, the study will investigate factors related to psychologists and trainees reporting a greater number of days when their physical health was not good during the past month. Furthermore, this study will investigate potential reasons, relative to their comparable control samples, both professionals and trainees reported significantly more days over the past month when they considered their mental health not good, which interfered with them carrying out usual activities. Primarily, the study will examine the extent independent health behaviors correlate with one's perceived health. Additionally, the application of this survey study is to find out whether personal health behaviors contribute to

psychologists and trainee's perceived health, and what specific factors hold the most weight.

Review of the Literature

The review of literature focuses on the current knowledge with regard to health behaviors (alcohol use, tobacco use, physical activity, sleep, diet, and body mass index), access to health care, accuracy of self-report measures, and negative health factors as a result of alcohol misuse. Additionally, the relationships among alcohol misuse in regards to health professionals, days of functional impairment/work absences, and stress will be investigated.

Health Behaviors and Health Compromising Behaviors Defined

According to Mosby's Medical Dictionary (2009), "health behavior generally refers to an action taken by a person to maintain, attain, or regain good health and to prevent illness." Some common health behaviors are engaging in physical activity regularly, getting proper nutrition, and obtaining necessary immunizations. In contrast, health-impairing behaviors include lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption (CDC, 2012). According to JAMA (2004), the leading determinants of overall health are behavioral (i.e. Environment- 5%, Health Care- 10%, Socioeconomic- 15%, Genetic- 30%, and Behavioral- 40%).

According to Stringhini (2010), unhealthy behaviors, such as cigarette smoking, physical inactivity, and poor nutrition, are more prevalent among adults of lower socioeconomic status (SES). However, alcohol consumption is more predominant in individuals of higher SES. Similarly, Harper and Lynch (2007)

investigated health related variables such as binge alcohol use, physical inactivity, smoking, obesity, and seatbelt use, and found less educated individuals had poorer health behaviors, except for binge drinking.

Health Behaviors of Mental Health Providers

Healthcare professionals tend to be more knowledgeable when compared to the general public about healthy lifestyle activities and health in general (Frank, Breyan, & Elon, 2000). The literature reveals healthcare professionals participate in more positive health behaviors when compared to the general population. However, a study investigating healthcare workers in a nationally representative sample of US adults discovered healthcare professionals do not exclusively practice healthy lifestyles (Helfand & Mukamal, 2013).

There has been limited research specifically examining the health behaviors of psychologists and psychology trainees. Prosser (2013) found psychologists to be more health conscious when compared to the U.S. adult population on certain health behaviors, including tobacco use and physical activity. Yearwood (2014) surveyed psychologists and psychology trainees on their current compliance to health recommendations for the following: weight maintenance, nutrition, physical activity, tobacco use, sleep hygiene, and alcohol consumption. Results showed psychologists ($M = 77\%$, $SD = 16.33$, $N = 313$) were significantly more likely to participate in the examined health promoting behaviors when compared to other high SES U.S. adults ($M = 61\%$, $SD = 18.96$, $N = 92255$). High SES was defined as individuals with an educational level of a college graduate or higher, and a yearly household income of

\$50,000 or above. Likewise, trainees ($M = 75\%$, $SD = 17.18$, $N = 313$) were significantly more likely to participate in the examined health promoting behaviors when compared to U.S. adult sample of equivalent age and education level ($M = 59\%$, $SD = 19.74$, $N = 49876$). Details regarding specific behaviors in both the general U.S. population and in mental health professionals follow.

Tobacco use. The CDC estimates smoking tobacco causes one in five deaths annually or 1,300 deaths every day in the United States. In addition, nearly 16 million Americans are living with a disease as a result of smoking (CDC, 2014). The majority of high SES adults do not currently smoke tobacco (92.8%); however, 32.1% disclosed smoking at least 100 cigarettes in a lifetime. Nearly 2% of the high SES adults revealed currently using smokeless tobacco products some days to every day. More than half (54.7%) who identified as current smokers have tried to quit smoking in the past 12 months. In addition, of those who identified as current smokers, 4.1% reported smoking every day and 2.7% reported smoking only some days (CDC, 2014).

Tobacco use in mental health professionals. According to a 1984 study by Royak-Schaler and Feldman, 77% of psychotherapists ($N = 86$) were classified as non-smokers. However, in a more recent study by Wendt (2005), only 1.3% of the 154 psychologists surveyed endorsed smoking behaviors. Additionally, 57.3% of Wendt's participants reported never smoking and 41.3% identified as former smokers.

In Yearwood's study (2014), less than 31% of professionals, and 24% of trainees reported smoking over 100 cigarettes in their lifetime. There were no significant differences in current smoking status between professional psychologists

(χ^2 (2, N=313) = 4.37, p =.11) and trainees (χ^2 (2, N=184) = 2.16, p =.34) when compared to their corresponding control groups. In addition, no significant differences were shown regarding the use of chewing tobacco for professional psychologists (χ^2 (2, N=313) = 2.74, p =.25) or trainees (χ^2 (2, N=184) = 2.16, p =.34), when compared to their equivalent U.S. adult samples (Yearwood, 2014).

Physical activity. According to the *2008 Physical Activity Guidelines for Americans*, U.S. adults need to get at least 150 minutes of weekly moderate-intensity aerobic activity and 75 minutes of weekly vigorous-intensity aerobic activity. Engaging in muscle-strengthening activities at a moderate to high intensity on two or more days a week is also recommended (U.S. Department of Health and Human Services, 2008). According to the CDC's Behavioral Risk Factor Surveillance System (BRFSS, 2010), 27.0% of high SES adults met both aerobic and strengthening guideline recommendations. However, 33.9% met only the aerobic guidelines, and 8.1% met only the strengthening guidelines. Conversely, 26.7% of high SES adults did not meet either of the physical activity guidelines. During the past 30 days, 87.3% of high SES adults reported engaging in physical activity or exercise, not including activity at their regular job. The most common types of physical activity included: walking (47.1%), running (10.5%), gardening (5%), biking outdoors or on an exercise machine (4.9%), participating in aerobics classes (3.4%), weight lifting (2.8%), and using the elliptical machine (2.1%).

Physical activity and mental health professionals. Studies suggest approximately 70 – 95% of psychotherapists engage in regular physical activity

(Barrow, English, & Pinkerton, 1987, N=196; Burton, Pakenham, & Brown, 2010, N=236; McEntee & Halgin, 1996, N=110). In one of these studies (McEntee & Halgin, 1996), 78.2 % of psychotherapists surveyed engaged primarily in aerobic physical activity, including walking (42.7%), bicycling (23.6%), running (23.6%), organized sports (16.3%), and swimming (13.6%). Additionally, roughly 24% endorsed that lifting weights was part of their physical activity routine. The study also revealed that younger psychologists were significantly more likely to exercise more frequently than older age groups.

In Yearwood's more recent study (2014), 91% professional psychologists reported participating in at least one aerobic activity over the past month, and 69% of professional psychologists reported participating in at least one strength physical activity over the past month [See Table 11]. Nearly 46% of professional psychologists and 48% of trainees met both strength and aerobic recommendations. A significant difference was reported in adherence to physical activity guidelines for psychologists ($\chi^2 (4, N=209) = 143.46, p <.001$) when compared to high SES adults with significantly more psychologists (46%, $n = 96$) meeting both strength and aerobic standard recommendations than their U.S. control group counterparts (27%, $n = 24885$). Also, there were also significant differences in the adherence to physical activity guidelines for trainees ($\chi^2 (4, N=106) = 126.55, p <.001$) when compared to the control group sample. Results show trainees (48%, $n = 51$) were more likely to meet both strengthening and aerobic recommendations when compared to age and education equivalent adults (24%, $n = 12130$).

Sleep. It is recommended that adults get between seven to nine hours of sleep per night (CDC, 2013). In the BRFSS (2011), high SES adults endorsed sleeping an average of 7.1 hours per night (SD= 1.01). On average, they reported not feeling they got enough rest or sleep about 8.61 days (SD = 9.04) in the past month (Yearwood, 2014).

Sleep and mental health professionals. According to a study by Royak-Schaler & Feldman (1984), 69% of psychotherapists (N = 86) surveyed reported sleeping on average seven to eight hours per night. Yearwood's study (2014) revealed similar results, with psychologists and trainees both reporting an average of just over 7 hours of sleep per night (M = 7.09, SD = 0.91, N = 304) and trainees (M = 7.07, SD = 0.98, N = 179), with no significant differences when compared to their respective control groups.

Yearwood's 2014 study revealed significant differences in the average number of days participants did not get enough sleep when comparing professional psychologists, trainees, and U.S. adult samples ($F(3, 6633) = 13.93, p < .001$). Trainees (M = 12.56, SD = 9.14, N = 167) reported more days that they did not get enough sleep over the past month when compared to psychologists (M = 10.07, SD = 8.59, N = 263). There were no significant differences in not getting enough sleep between professionals (M = 10.07, SD = 8.59, N = 263) and high SES adults (M = 10.54, SD = 8.91, N = 3930); or between trainees (M = 12.56, SD = 9.14, N = 167) and their comparable age and education level U.S. adult sample (M = 11.93, SD = 9.36, N = 2277).

Diet. BRFSS (2011) provided an estimated percentage of each state's adult population that meets the US Department of Agriculture Food Patterns intake recommendations for fruit and vegetable intake. An estimated 7%–18% met fruit recommendations and approximately 5%–12% met vegetable recommendations.

According to the U.S. Department of Agriculture. *Dietary Guidelines for Americans, 2010*, the typical American exceeds the recommended intake levels or limits in the following categories: sodium; saturated fat; calories from solid fats and added sugars; and refined grains. Additionally, Americans tend to eat less than the suggested amounts of fruits, vegetables, dairy, whole-grains, and oils. In 2013, only 57% of Americans reported eating produce regularly. According to the U.S. Department of Health and Human Services (HHS) and U.S. Department of Agriculture (USDA) (2015), healthy eating patterns incorporate a variety of vegetables from each of the five vegetable subgroups, which include the following: dark green, red and orange, legumes (beans and peas), and starchy vegetables. Individuals can meet their daily vegetable recommendations through fresh, canned, frozen, and dried options in cooked or raw forms, including vegetable juices. According to the Healthy U.S. Style Eating Pattern, the suggested amount of vegetables at the 2,000-calorie level is 2½ cup-equivalents of vegetables per day. In regards to recommended fruit intake, the fruits food group includes whole fruits and 100% fruit juice. According to the Healthy U.S.-Style Eating Pattern, the recommended amount of fruits at the 2,000-calorie level is 2 cups daily. At least half of the suggested amount of fruits should come from whole fruits, which may be fresh, canned, frozen, or dried forms (HHS & USDA, 2015).

Diet and mental health professionals. According to Yearwood (2014), psychologists consumed an average of 1.68 servings of fruit (SD = 7.47, N=176), and 2.55 servings of vegetables (SD = 7.47, N=239) each day. Trainees consumed an average of 1.57 servings of fruit (SD = 0.92), and 2.48 servings of vegetables (SD = 1.43) each day. There was no significant difference found for daily fruit or vegetable consumption between professionals and trainees. In addition, there was no significant difference found between the proportion of trainees and professionals who followed nutrition guidelines ($\chi^2 (3, N=202) = 3.52, p = .32$). Overall 36% of psychologists (n = 50) and 44% of trainees (n = 28) reported meeting the recommended nutritional guidelines for both daily fruit and vegetable consumption. However, (29%, n=26060) of the professional equivalents, and (26%, n=11864) of trainee equivalents met both fruit and vegetable recommendations. Results revealed a significant difference in the adherence to nutritional guidelines between psychology trainees and their equivalent age and education level participants, with trainees (44%, n = 28) significantly more likely to meet both recommended nutrition guidelines than the control group sample (26%, n = 11864). There were no significant differences in adherence to nutritional guidelines between psychologists and their high SES controls.

Body Mass Index. Body mass index (BMI) is defined by the number calculated from a person's height and weight, which is then used as a marker for an individual's body fat (CDC, 2011c). The following are standard weight categories related to BMI ranges for adults: Underweight (below 18.5), Normal (18.5–24.9), Overweight (25.0–29.9), and Obese (30.0 and above). According to the National

Health Interview Survey (NHIS) (2010), the average U.S. adult has a BMI of 26. According to National Health and Nutrition Examination Survey (NHANES, 2012), 68% percent of adults are considered to be overweight, 35% percent of adults are considered to be obese, and 6% are considered to have extreme obesity.

Body Mass Index in mental health professionals. According to Woolley (1998), trainees and professional psychologists (N=338) were on average of normal weight, with a mean BMI of 23.04 (SD=3.73). However, 25% of the participants were categorized as overweight or obese (BMI of 25 or greater). Although BMI was not significantly different when considering work settings (i.e., private practice or hospital/clinic) or training level (i.e., practitioner or student), Woolley (1998) found that older women practitioners who work in hospital/clinic settings and have a normal BMI engaged in the most health promoting behaviors.

According to Yearwood (2014), statistical differences were found among the average BMI for professional psychologists, trainees, and U.S. adult control samples ($F(3, 136529) = 97.90, p < .001$). Trainees (N = 184) had an average BMI of 23.84 (SD = 4.59), which was significantly lower than professionals' (N = 310) mean BMI (M = 25.04, SD = 4.68). When compared to the high SES U.S. adult sample (M = 26.84, SD = 5.23), professional psychologist, on average, had a significantly lower B. Additionally, when compared to their age and education equivalent U.S. adult sample (M = 26.39, SD = 5.49), trainees had a significantly lower BMI on average. Professional psychologists (45%, n = 138) were significantly less likely to have a BMI classification outside of normal limits than SES equivalent U.S. adults (61%, n =

54204). Also, trainees (39%, n = 71) were significantly less likely to have a BMI classification outside of normal limits, when compared to the age and educational equivalent U.S. adult sample (57%, n = 26077).

Alcohol use. According to the *Dietary Guidelines for Americans* states, alcohol should be consumed in moderation, which is defined as up to one drink per day for women and up to two drinks per day for men (U.S. Department of Agriculture and U.S. Department of Health and Human Services, 2010). Those who drink more than that are classified as heavy drinkers. Females who have four or more drinks on one occasion and males who have five or more drinks on one occasion are classified as binge drinkers. Harper & Lynch (2007) reported poorer health behaviors among lower SES individuals with the exception of binge drinking. Additionally, according to Stringhini (2010), alcohol consumption tends to be more prevalent in higher SES individuals. In a recent high SES U.S. sample, 6.4% were heavy drinkers and 15.4% were binge drinkers (Yearwood, 2014). The relationship between alcohol use and education level has also been examined. Thoreson and Skorina (1996) reported approximately 70% of U.S. adults drink and more than 90% of college-educated people consume alcohol. In addition, individuals with a higher level of education drink more often but consume less amounts of alcohol on each drinking occasion when compared to those with a lower level of education (Thoreson & Skorina 1996).

Alcohol use in mental health professionals. Alcohol abuse tends to be hidden among professionals, which causes it to be difficult to detect and examine the extent of alcoholism and alcohol abuse among professionals. According to Bush & Lipari

(2015), occupations that have the highest amount of alcohol use include miners, construction workers, food/bar, and entertainment; whereas, public caring roles such as health and education have lowest rates of alcohol use. Thus, mental health field is not considered a drinking prone career.

A study on psychologists' alcohol consumption found that 9% of psychologists engaged in "dysfunctional drinking," defined as consuming five or more beers, half a pint or more of liquor, or four or more glasses of wine several times a week to daily (Thoreson, Miller, & Krauskopf, 1989, N=329). Another study found 20% of psychologists indicated daily or almost daily consumption of alcohol (Good, Thoreson, & Shaughnessy, 1995, N=393).

Yearwood's study yielded concerning results regarding alcohol use by psychology professionals and trainees. Despite, generally outperforming their U.S. counterparts with respect to engaging in health promoting behaviors (as previously discussed), professionals and trainees were significantly more likely to report excessive alcohol consumption or binge drinking than their control groups. Further, 16.52% of psychologists reported engaging in both excessive and binge drinking (compared to 4.40% in the high SES control group) and 17.12 of trainees endorsed engaging in both problematic drinking behaviors (compared to 5.27% of their U.S. equivalents.) Yearwood (2014) also found that psychologists drank alcohol more times per week when compared to trainees; however, trainees consumed more drinks per occasion when compared to professionals.

Perceived Health Status

Yearwood (2014) used BRFSS data to examine the current health of high SES individuals, ages 24 to 70 years old (N=92256), (CDC, 2011a). Results show the majority of high SES U.S. adults reported very good or excellent general health (73.6%) and fewer than 5% endorsed fair or poor general health. In addition, 71% of high SES U.S. adults indicated there were no days when their physical health, including physical illness or injury, was not good in the past month, and almost 20% five or less days over the past month during which their physical health was not good. Half (N=53110) reported there were no days in the past month when their mental health was not good, and 34% of the participants reported five days or less over the past month during which their mental health was not good.

Yearwood (2014) found that psychology trainees (50%, n =117) were significantly less likely to report very good or excellent health when compared to U.S. adult equivalents (73.52%, n = 36753). Psychologists (M = 5.76, SD = 7.47) and trainees (M = 4.50, SD = 5.52) reported significantly more days when their physical health was not good during the past month relative to their comparable control samples (M = 1.89, SD = 5.42, N = 91599 and M = 1.81, SD = 4.97, and N = 49545, respectively). . Trainees self-reported their mental health was not good an average of 7.11 days (SD = 6.95) over the past month, which was significantly higher than professional psychologists (M = 4.72, SD = 5.37). Additionally, both professionals and trainees reported significantly more days over the past month

when they considered their mental health not good relative to their comparable control samples ($M = 2.01$, $SD = 5.39$, $N = 91584$ and $M = 1.89$, $SD = 2.76$, $N = 49441$, respectively). Furthermore, psychologists ($M = 4.02$, $SD = 4.36$) and trainees ($M = 4.87$, $SD = 4.93$) both reported significantly more days over the past month when their mental or physical health interfered with them carrying out usual activities when compared to their equivalent U.S. control groups ($M = 2.28$, $SD = 5.73$, $N = 41814$ and $M = 2.03$, $SD = 5.15$, $N = 26045$, respectively).

Alcohol Use and Perceived Health

According to Bendtsen, Hensing, & Alexanderson et al. (2003), women who consumed alcohol excessively had a lower mean score of self-rated health in each of the eight health dimensions of the SF-36, a brief health measure, when compared to the reference population and women without excessive alcohol consumption. Furthermore, women who consume alcohol excessively rated their health status as lower than the other women, especially in the social role function and mental health dimensions. Associations between social and emotional problems in women and excessive alcohol consumption have been reported.

Health Care Access

According to the Kaiser Family Foundation (KFF), lack of health insurance may affect one's health in many ways. People without insurance coverage have worse access to care and are less likely to not get medical care when needed due to cost. They are less likely to receive preventive care and services for major health conditions and chronic diseases. Additionally, going without health care coverage may have

serious health effects for the uninsured because they are likely to receive less preventive care, which can result in more serious illnesses, requiring advanced treatment. For example, uninsured Americans, failed to receive diagnostic tests, missed doctor and dentist visits and did not refill prescriptions.

BRFSS data suggest that nearly all high SES adults endorsed having health care coverage (97.8%), which is often used as a measure of health care access. Likewise, the majority (90.1%) of adults reported having at least one health care provider or doctor, and 82.7% of the participants reported having one primary health care provider. The majority of participants remembered having a checkup with their doctor within the past year (72.6%). Nearly 20% of participants reported having a routine checkup between one and five years ago. A limited number of high SES adults (4.1%) recalled a time over the past 12 months when he or she wanted to be seen by a doctor but could not afford it (CDC, 2011a). According to Yearwood (2014), professional psychologists were significantly more likely to lack healthcare coverage when compared to this high SES adult sample ($\chi^2 (1, N=313) = 8.61, p = .003$). Additionally, trainees and professionals were more likely to state cost as the reason they are not accessing healthcare more often than U.S. adults. Professionals and trainees were also less likely to have a regular healthcare provider (10%, $n = 9058$). Trainees were significantly less likely to report having an identified healthcare provider when compared to their control group sample. Additionally, trainees (25%, $n = 46$) were significantly more likely to report cost as a barrier when compared the

equivalent control group. Results revealed cost being significantly more of a barrier to seeing a physician for trainees than professionals.

Accuracy of Self-Report Measures

Research shows self-report measures are one of the most commonly used methods of collecting information regarding one's health status (Short, et al., 2009). Conversely, other studies have shown exclusively relying on self-reported health information should be used with caution when trying to approximate the prevalence of risk factors in the general population (Newell, et al., 1999). As the criticisms of self-report measures are related to their validity and reliability, researchers can maximize these by utilizing well established measures with clear scoring and administration standards. Overall, confirming self-report data with additional sources including observations is suggested (Fleming, 2010).

A study by De Waure et al. (2015) suggests that self-perceived health is an accurate measure of one's actual health status. Subjective components of perceived health are important because they take into consideration psychological aspects, which have a considerable impact on one's overall health. Additionally, evidence supports the importance of self-assessment of health when considering quality of life.

In a study by Short et al. (2009) the reliability of self-assessments was found to be as good or better than many health measures, as well as strongly correlated with extensive health scales, indicating a high degree of construct validity. When individuals self-assess their health, they likely consider a broader spectrum of factors that may not be easily detected by health care professionals. While significant

associations with physicians' ratings were found, when considering longer periods of time, self-assessments of health have been shown to be more reliable than physicians' ratings, suggesting self-perceived health include prognostic information of which physicians may not be aware. Therefore, it is essential to understand the factors that underlie the predictive power of self-assessment. There has been increased interest on the factors contributing to one evaluating his or her overall health as poorer or better than good (Short et al., 2009).

According to Shields & Shooshtari (2001) self-perceived health is based on more than physical health. Results show individuals do not automatically rate their health at the optimal level even if they have no health problems. Those individuals would commonly describe their health as "good," rather than "very good" or "excellent." Qualitative research has shown that self-perceived health often includes factors such as general wellbeing and fitness. In addition, maintaining a healthy weight, exercising, and abstaining from smoking have been shown to positively affect one's health perception. It should be noted, compared to men, women consider a wider range of factors, such as psychological issues and the presence of non-life threatening illnesses, when making subjective ratings of health. On the other hand, heavy drinking is known to negatively affect one's perception of health. However, moderate levels of alcohol consumption may have some favorable effects: results based on data from a study in Finland found less than optimal health ratings were most likely found among heavy drinkers and abstainers and less likely found among moderate drinkers. According to the National Population Health Survey (NPHS), individuals who

consumed alcohol on a weekly basis in 1995 were less likely to report fair/poor health in 1999, compared to individuals who were lifetime abstainers of alcohol or those who consumed alcohol less than once a week. Additionally, the NPHS findings reveal that psychological factors play a major role in self-perceived health. For example, individuals classified as having low self-esteem in 1995 had lower probabilities of reporting very good/excellent health in 1999, when compared to individuals who did not have low self-esteem. Among women specifically, feelings of distress in 1995 was correlated with higher odds of reporting fair/poor health and lower probability of reporting very good/excellent health in 1999 (Shields & Shooshtari, 2001).

Conversely, research suggests participants are likely to under-report alcohol use. According to Stockwell et al., (2014) individuals who describe themselves as less frequent drinkers appear to under-report their drinking rates considerably. Additionally, according to Boniface, Kneale & Shelton (2016) participants classified as heavy drinking along with participants classified as non-routine drinkers, were associated with increased rates of under-reporting of both the number of drinking days and the amount of alcohol consumption (Boniface, et al., 2016).

Stress and Alcohol Misuse

According to NIAAA, (2014), people may attempt to cope with stress by drinking alcohol. Although drinking alcohol can cause positive feelings and relaxation, those feelings are short lived. Alcohol use takes a psychological and physiological toll on the body, causing more stress. When stress is ongoing and individuals continue to cope by consuming alcohol, heavy drinking can lead many

medical and psychosocial problems, including increased risk for alcohol dependence. Studies found that both men and women who endorsed higher levels of stress tended to drink more than those who did not endorse high levels of stress. According to the NIAAA (2014), one way that people may choose to cope with stress is by turning to alcohol. A new job, a death in the family, moving across the country, a breakup, or getting married—all are situations that can result in psychological and physical symptoms collectively known as “stress.”

According to Keyes et al. (2011), alcohol use affects one’s psychological and physiological state, and may compound the effects of stress. The study found that people who reported higher levels of stress tended to drink more alcohol. Research shows that alcohol can cause increases in anxiety. Alcohol can cause changes in the level of serotonin and other neurotransmitters in the brain, which when in short supply it can result in feelings of anxiety and depressed mood. Alcohol can cause confusion, dizziness, nervousness, and weakness, which may cause one to become anxious. It may cause one’s body to go into a state of hyperactivity, which can lead to sleep deprivation, shaking, and light/sound sensitivity. Alcohol-induced anxiety may continue for many hours, or for some, an entire day after consuming alcohol.

Negative Health Effects of Alcohol Misuse

Excessive alcohol misuse can result in an increased risk for alcohol dependency, alcoholic cirrhosis, mental health decline, dementia, and various forms of cancer. In addition, excessive alcohol use can result in hypertension and diabetes.

Alcohol can reduce the oxidation of fat, which results in fat storage, especially in the abdominal region (Gronbaek, 2009).

According to Centers for Disease Control and Prevention (CDC, 2014) short-term health risks of excessive alcohol use may include injuries, violence, illnesses, risky behaviors, and in more severe cases death. Long-term health risks of excessive alcohol use can lead to the development of chronic diseases and various health problems including psychological problems, cognitive impairments, social difficulties, alcohol dependence, and various illnesses such as heart disease, stroke, high blood pressure, cancer, liver disease and digestive problems.

According to Sacks et al. (2015), excessive alcohol consumption was responsible for 1 in 10 deaths among 20-64 year old working-age adults. Short-term health risks of alcohol consumption include: injuries, violence, interpersonal issues, alcohol poisoning, risky behaviors, and reproductive health. Excessive alcohol consumption can weaken one's immune system and result in one being more susceptible to various diseases (NIAAA, 2014).

Alcohol Misuse and Work Absences

Studies have shown varied relationships between alcohol misuse and work absences. A study by Vasse, Nijhuis, and Kok (1998), investigated the relationship between work stress, alcohol consumption, and sickness absences. The results of the study did not support the hypothesis that consuming alcohol to cope with stressors increases the occurrence of sickness absence. The study found that subjects who

abstained from alcohol use had higher absence rates when under stress, when being compared to moderate drinkers.

In a study by Bendtsen, Hensing & Alexanderson (2003), results showed as one's alcohol consumption increased, there were fewer sick-leave spells but a higher mean number of sick-leave days each year. However, women who reported a concern for the amount of alcohol consumed during the last year had more but shorter sick-leave spells. According to Edvardsen et al. (2014), alcohol use or hangover effects can cause an increased risk for inefficiency and absences from work. About 1% of the participants had been absent from work due to drinking alcohol during the past year, and 12.2% had experienced inefficiency or hangover at work due to alcohol consumption over the past year. Self-reported inefficiency or hangover at work due to alcohol was more common among the age group below 40 years, and among employees with a higher educational level.

Statement of Purpose

Most of the available literature suggests personal health behaviors have a strong relationship with one's perceived health status. However, Yearwood (2014) found that, although psychologists and trainees are engaging in more positive health behaviors overall, compared to their respective control samples, they perceived their mental and physical health as poorer than did their comparable U.S. adult samples. Furthermore, psychology trainees and professionals reported more days of functional impairment due to physical or mental health difficulties when compared to equivalent U.S. adults (Yearwood, 2014). Yearwood's study revealed that psychologists and trainees were more likely to engage in excessive alcohol use, binge drinking, or both when compared to their control groups. This study will explore contributions to psychologists' and trainees' health perception, days of poor mental and physical health, and days of functional impairment. Information on health behaviors that most significantly impact perceived health in psychologists and trainees are expected to identify potential treatment needs and therefore treatment itself that will target specific health behaviors to improve perceived health.

This study will specifically examine the unique contribution of each health behavior to psychologists' and trainees' perceived health, reported days of poor mental and physical health, and functional impairment, based on Yearwood's 2014 findings. Health behavior factors including weight maintenance, tobacco use, nutrition, physical activity, alcohol consumption, and sleep hygiene will be examined with respect their relationship with each of the dependent variables detailed above.

Based on the differences Yearwood (2014) found in alcohol use between psychologists and trainees and their respective control groups, it is hypothesized that alcohol use patterns will account for a significant percentage of the variance in psychologists' and trainees' overall perceived health status, days of poor mental health and physical health, and days of functional impairment. Because having an identified healthcare provider has been linked to health outcomes and recent research found psychologists and trainees less likely to have one, this will also be investigated in terms of its relationship to the above named dependent variables. The following specific hypotheses will be tested:

- 1) As alcohol consumption increases, overall perceived health, mental health status, physical health status, and functional ability will decrease.
- 2) Alcohol consumption will account for a greater percentage of the variance in overall perceived health, days of poor mental health, days of poor physical health, and days of functional impairment when compared to BMI, smoking, physical activity, nutrition, and sleep.
- 3) Those who have an identified healthcare provider will endorse better overall perceived health, less days of poor physical health, less days of poor mental health, and less days of functional impairment, when compared to those who do not have an identified healthcare provider.

Method

Design

This cross-sectional survey study was used to assess psychologists' and trainees' health behaviors, overall perceived health, mental and physical health statuses, and functional impairment. In addition, this study was conducted to determine which health behaviors (i.e., alcohol use, BMI, physical activity, smoking, fruit and vegetable intake, and sleep) account for a significant portion of the variance in overall perceived health, days of poor mental health, days of poor physical health, and days of functional impairment. Health behaviors were assessed in a group of professional psychologists and psychology graduate students. The study was reviewed and approved by the Institutional Review Board at Florida Institute of Technology [See Appendix A].

Participants

This study used a convenience sample of subjects who voluntarily participated in the survey (collected by Yearwood, 2014). Subjects were primarily recruited from listservs of professional organizations, including Florida Institute of Technology, American Psychological Association, and Florida Psychological Association. Participants completed survey questions online. Suitability criteria for participation included adults (18 years old or older) whom were classified as professional psychologists or psychology trainees (i.e., post-doctoral resident, pre-doctoral intern, or graduate student). Participants were notified that involvement was voluntary and subjects had an opportunity to win a gift card. Participants' name and identifying information was removed from the assessment measure data collection. Participants

who wanted to qualify to win a gift card were requested to include his/her contact information in a separate survey, to maintain anonymity of the data [See Appendix B].

A consideration regarding participants' data was volunteer bias. Although random sampling is preferred to guarantee subjects are representative of nationwide demographic subgroups and geographical areas, it was not possible to conduct systematic random sampling, since there is no readily available database from which to acquire participants. Therefore, analyses were conducted on demographic and professional characteristics to determine if the sample was a comparable representation of the U.S. psychology workforce and its trainees. Psychologists and trainees samples were combined due to their general consistency of results on the health behaviors being investigated. In addition, psychologists and trainees were combined to allow for a sufficient n with respect to the alcohol use variable.

Instruments

The original survey was comprised of 47 items [See Appendix C]. However, 21 items on the survey were used for the present study. The measurements and domains that comprise it are detailed below.

Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS (CDC, 2011c) was the primary self-report measure used to evaluate health behaviors. Twenty-one of the BRFSS questions were used for this study, which were taken verbatim from the BRFSS questionnaire to increase the level of comparability with control data. The BRFSS is a state-based telephone health survey that gathers data on preventive health behaviors, health risk behaviors, and health care access (CDC,

2012). The BRFSS data set is created by federal agencies and available in the public domain.

Nelson et al. (2001) provided a comprehensive summary on the reliability and validity of the core BRFSS measures from 1993 to 2000. The research revealed most questions on the core BRFSS instrument are at least moderately reliable and valid, and many items are highly reliable and valid. However, health topic areas displayed inconsistency in reliability and validity, and as a result of sparse BRFSS-specific studies available in the literature. The National Health Interview Survey (NHIS) was another population-based survey that used comparable questions to the BRFSS. Research revealed that BRFSS and NHIS provide comparable overall national estimates for the majority of health behaviors surveyed, and the overall mean differences between the surveys ranged from 0.4 to 3.0 percent. Nelson et al. (2001) found that various degrees of validity and reliability were operationally defined. Specifically, reliability was defined as high (>0.60), moderate (0.40 to 0.60), and low (<0.40). Many of the validity estimates were based on studies with specificity and sensitivity values, which were classified as high validity (sensitivity and specificity values of 80% or correlation coefficients around 0.60), moderate validity (sensitivity and specificity values from 60% to 79% or correlation coefficients from 0.40 to 0.59), and low validity (sensitivity and specificity values less than 60% or correlation coefficients less than 0.40).

Alcohol Use. Numerous questions from the BRFSS questionnaire use to assess alcohol use. To evaluate participants' average alcohol consumption in the current

study, the response from survey item Q34 (During the past 30 days, how many days per week did you have at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor?), was multiplied by the response to survey question Q35 (During the past 30 days, on the days when you drank, about how many drinks did you drink on the average?) Although reliability of BRFSS questions on alcohol consumption is high, there were potential discrepancies between studies in reporting on heavier alcohol users, suggesting BRFSS may underestimate the number of heavier drinkers. However, BRFSS assessments of alcohol consumption are similar to other surveys and the overall validity of the alcohol use questions is moderate.

BMI. In the BRFSS, height and weight are used to determine BMI, which provides examiners the ability to categorize either normal, overweight or obese weight status. Body Mass Index (BMI) was calculated by survey item Q9-About how much do you weigh without shoes? and survey item Q10-About how tall are you without shoes (specify in inches)? Self-reported height on the BRFSS question has both high reliability and validity. However, Nelson et al. (2001) found high reliability and moderate validity for self-reported weight on the BRFSS. Another study suggested that BRFSS data might marginally underreport weight (Arday et al., 1997).

Tobacco Use. To evaluate participants' smoking behaviors, this study uses BRFSS Q20: Do you now smoke cigarettes every day, some days, or not at all? Nelson et al. (2001) found high reliability of BRFSS data in regards to smoking status. The frequency of current smoking is marginally lower than estimates attained from

physiological measures or interviews; however, the validity of BRFSS data for classifying current smokers is high.

Physical Activity. The BRFSS contains several questions that assess physical activity, such as participating in physical activities, along with the type, duration, and frequency. In this study, physical activity was measured by multiplying survey item Q30 (times per week) by survey item Q31 (average time per episode of activity). According to Nelson et al.'s (2001) literature review of BRFSS data, the physical activity measures were found to be moderately valid and reliable. Particularly, studies have found BRFSS questions to have moderate reliability when measuring intense physical activity (Balluz, 2012).

Sleep. The BRFSS measured average amount of sleep by survey item Q14. Nelson et al. (2001) considered validity of BRFSS question regarding average amount of sleep to be moderate.

Fruit and Vegetable Intake. BRFSS uses a short food frequency questionnaire (FFQ), which is a brief dietary assessment tool that measures the average number of fruits and vegetables one consumes. The present study measured fruit intake using survey item Q24 and vegetable intake using survey item Q26. According to Nelson et al. (2001), the BRFSS has moderate reliability when comparing BRFSS questions to other FFQs. Although BRFSS intake of fruit and vegetable values tend to be lesser than those found on more extensive FFQs, the BRFSS reveals comparable estimates of fruit and vegetables consumed when compared to other national surveys such as the Continuing Survey of Food Intakes by

Individuals. Therefore, Nelson et al. (2001) indicated the validity of BRFSS fruit and vegetable consumption to be moderate.

Healthcare Access. This variable was defined by having an identified healthcare provider, as measured by BRFSS Q16. Based on limited validity research, self-reported health insurance status on the BRFSS appears to have high validity. The BRFSS and the NHIS generally produced comparable estimates on insurance coverage, despite differences in item wording and reporting methods (Battelle, 1999; Nelson, 2003).

Overall Perceived Health. Overall perceived health was measured on the survey item Q11, which asked participants were asked to rank their perceived general health as (1) Excellent, (2) Very good, (3) Good, (4) Fair, and (5) Poor. Some of the more subjective questions on the BRFSS include those on overall perceived health, mental health status, and physical health status. According to Nelson et al. (2001), these questions tend to be difficult to psychometrically assess because there is no widely accepted measure used to compare the responses. Additionally, reliability can be difficult because responses may change in a short period of time. Some studies assessed validity by comparing subjective health related questions with morbidity, mortality, and other self-reported data. Nelson et al. (2001) indicated research assessing BRFSS-specific reliability or validity on health status was lacking. However, data from other studies that asked comparable questions found BRFSS' health status question to be highly valid and moderately reliable.

Mental and Physical Health Status. Poor mental health and physical health were measured using survey Q13 and Q14, which asked participants the number of days in the past 30 when their mental health and physical health were not good, respectively. The measures of mental and physical health status have moderate validity and unknown reliability for differentiating respondents in good health from those with serious impairment (Nelson, 2001).

Functional Impairment. BRFSS measured functional impairment on Q14 by assessing days of poor physical or mental health that interfered with doing usual activities, such as self-care, work, or recreation. The measure of functional impairment has unknown reliability and only moderate validity (Nelson, 2001).

Procedure

Members of identified professional psychology organizations were emailed an invitation to participate in a web-based survey. The questionnaire was dispensed using an internet-based survey site named QuestionPro. Participants were required to read and complete the online informed consent before beginning the survey. Participants were notified that it was possible to discontinue participation at any point during the survey. Once the survey was completed, a message was displayed thanking the participant for his or her participation. In addition, the respondents were given an opportunity to complete a separate survey, which would enter him or her into a drawing to win a \$100 gift card. Email addresses of individuals who elected to participate in the gift card drawing were collected in a secondary online-survey to maintain confidentiality and guarantee participants' identifying information would not

be associated with response information. In July 14, 2013 the survey was posted on QuestionPro and data collection began. Data collection concluded on September 16, 2013.

Results

Participant Demographics

The demographics of the psychologists and trainees are displayed in Table 1. A total of 497 participants completed the survey.

Professional Psychologists. The professional sample consisted of about 24% men and 76% women. Data from American Psychological Association's Center for Workforce Studies (CWS) show that approximately 58% of individuals at the doctoral level in the psychology workforce are women. Therefore, in this particular sample of professional psychologists, men appear to be underrepresented. Of those 313 professionals sampled, the ages ranged from 26 to 76, with a mean of 43.6 years. The majority of the sample self-identified as white, which is consistent with APA's CWS report of approximately 90% of the APA professional members being Caucasian.

Trainees. The psychology trainee sample consisted of 22% men, 77% women, and 1% transgendered. Data from APA's CWS indicates the proportion of women receiving new doctorates in the psychology is 75%. Therefore, this survey sample regarding gender appears to be a fair representation of the current psychology trainee population. Of the 184 trainee participants, ages ranged from 23 to 68 years ($M=30$). Similar to the professional sample, Caucasian participants made up the majority of the sample, comprising of approximately 86%. Conversely, studies from APA's CWC estimate the proportion of new psychology doctorates that are Caucasian to be around 75%. Therefore, the number of trainee participants from minority groups may be underrepresented in this sample.

Descriptive Statistics for Dependent and Independent Variables

Preliminary analyses consisted of computing means (M) and standard deviations (SD) of the study's dependent variables: overall perceived health status, mental and physical health status, and functional impairment. Table 2 presents these data for the total sample. Participants reported their overall perceived health to be ($M=2.15$, $SD=.828$), which corresponds to "very good" health. Psychologists and trainees reported an average of 2.25 days, over the past 30 days, of poor physical health ($SD=9.30$), and average of 3.28 days of poor mental health ($SD=5.47$), and an average of 1.38 days of functional impairment ($SD=3.31$).

Furthermore, analyses consisted of computing the means (M) and standard deviations (SD) for the selected health behaviors (independent variables) used in the analyses for the study. Table 3 presents these data for the total sample. On average participants consumed 7.84 servings of fruit ($SD=6.23$), 4.85 servings of vegetables ($SD=4.11$), and an average of 4.59 drinks per week ($SD=6.31$). Additionally, participants reported an average of 153.611 minutes of physical exercise each week ($SD=150.47$), and average of 6.87 hours of sleep each night ($SD=1.57$), and an average of 1.95 smoke cigarettes ($SD=.210$). Participants' BMI was calculated and the mean of participants fell into the Average BMI category ($M=1.39$, $SD=.841$).

Correlations among Variables

Table 4 presents a correlation matrix of the primary study variables. Correlations were considered significant at the $p < .05$ level.

Relationships Between Health Behaviors. Alcohol use and smoking were most strongly correlated ($r = .593, p < .01$). There was a negative correlation between BMI and physical activity ($r = -.096, p < .05$). Physical activity was positively correlated with consumption of fruits ($r = .158, p < .01$) and vegetables ($r = .168, p < .01$), and fruit and vegetable intake were positively correlated with each other ($r = .304, p < .01$).

Relationships Between Dependent Variables. All of the dependent variables were intercorrelated. The strongest correlation was between poor mental health and functional impairment ($r = .388, p < .01$). The weakest, but still significant, correlation among these dependent variables was that between poor physical health and functional impairment ($r = .096, p < .05$).

Relationship Between Independent and Dependent Variables. Significant correlations between health behaviors and each of the dependent variables are detailed below.

Overall Perceived Health. Negative correlations were found between poorer overall perceived health and fruit intake ($r = -.147, p < .01$), vegetable intake ($r = -.149, p < .01$), and increased physical activity ($r = -.196, p < .01$). A positive correlation was found between poorer overall perceived health and BMI ($r = .322, p < .01$).

Mental Health Status. Negative correlations were found between days of poor mental health and vegetable intake ($r = -.10, p < .05$), fruit intake ($r = -.09, p < .05$), and physical activity ($r = -.094, p < .05$).

Physical Health Status. No significant correlations were found between the health behaviors and days of poor physical health.

Functional Impairment: Physical activity was negatively correlated with days of functional impairment ($r = -.101, p < .05$).

Standard multiple regression was used to assess the ability of seven health behaviors (alcohol use, BMI, fruit intake, vegetable intake, sleep, smoking, and physical activity) to predict each of the following dependent variables: overall perceived health, days of poor mental health, days of poor physical health, and days of functional impairment. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity.

Table 5 displays a multiple regression analysis that examined the relationship between each of the health behavior variables and overall perceived health. The linear regression analyses revealed no health behaviors significantly predicted overall perceived health.

Table 6 displays a multiple regression analysis that examined the relationship between the health behavior variables and days of poor mental health. The linear regression analyses revealed no health behaviors were significantly predicted mental health status.

Because of the lack of significant correlations between the health behaviors and the other two dependent variables, physical health status and functional impairment, regression analyses were not performed on them.

Access to Healthcare. Participants self-reported whether or not they have one person they think of as their personal doctor or healthcare provider. An average of 76% participants ($SD = .439$, $N = 497$) reported having an identified healthcare provider, indicating that almost a quarter of the sample did not.

Independent samples t-tests were conducted to compare participants with and without an identified healthcare provider on each of the following: overall perceived health, days of poor mental health, days of poor physical health, and days of functional impairment. No significant differences were found between the two groups on any of these variables.

Discussion

The purpose of the present study was to further the research investigating personal health behaviors of psychologists and trainees. The sample of 184 trainees and 313 psychology professionals that completed this survey was relatively representative of the current U.S. psychology workforce. This study extended prior findings by providing a comprehensive inventory of personal health behaviors for psychologists and trainees, and the effects each health behavior has on overall perceived health, days of poor mental and physical health, and days of functional impairment.

With respect to hypothesis 1, no significant correlations were found between alcohol use and overall perceived health, poor mental health days, poor physical health days, or days of functional impairment.

With respect to hypothesis 2, alcohol consumption did not account for a greater percentage of variance in overall perceived health, mental health, physical health, or functional impairment. In fact, none of the health behaviors accounted for a significant portion of the variance in the dependent variables.

With respect to hypothesis 3, no statistical differences exist between participants with identified healthcare providers and participants without an identified healthcare provider with regard to overall perceived health, days of poor mental or physical health, or days of functional impairment. Thus, none of the study's hypotheses were confirmed.

It appears that additional unexamined factors are contributing to participants' overall perceived health, poor mental health days, poor physical health days, or days of functional impairment. This study did not explore the effect that psychological health behaviors (i.e. self-care) have on overall perceived health, poor mental health days, poor physical health days, or days of functional impairment. A study by Murad (2011) found that self-care strategies are vital to mental and physical wellbeing. Furthermore, a study by Dattilio (2015) found that mental health professionals are prone to neglecting their own mental health, despite what they are promoting to their clients. The amount of energy that is used when helping others can interfere with mental health professionals' own mental and physical health (Dattilio, 2015). Therefore, mental health professionals may need to be more aware of and attentive to the results of the stress they experience due to the nature of their work and the importance of self-care strategies. Furthermore, with regards to the alcohol use variable, there was only a small sample size of problematic drinkers, allowing only large effects to be statistically significant.

There are limitations to the present study. Due to the fact that this study was survey-based, administered online, and based on participants' self-reports on personal health behaviors, it is difficult to compare its findings to prior research that has investigated health behaviors. Furthermore, research suggests participants are likely to under-report alcohol use. Individuals who describe themselves as less frequent drinkers appear to under-report their drinking rates considerably (Stockwell, 2014). Another study associated both heavy drinking and non-routine drinking patterns with

increased rates of under-reporting of the number of drinking days and the amount of alcohol consumption (Boniface et al., 2016).

Despite previously discussed limitations, this study has several noteworthy strengths. This is one of the only studies that investigated a wide spectrum of health behaviors in psychologist and trainee populations. Additionally, this study explored areas where there has been limited research, such as the correlation between mental health and having an identified healthcare provider. This study further investigated Yearwood's (2014) findings to determine the strength of specific health behaviors on overall perceived health, days of functional impairment, and days of poor mental and physical health of psychologists and trainees. This study further supported previous literature on the benefits of physical activity, BMI, and nutrition on overall perceived health and days of poor mental health.

Future research should explore additional factors that could explain why psychologists and trainees report more days of poor mental, physical health, and functional impairment despite carrying out more positive health behaviors when compared to their U.S. adult control sample (Yearwood, 2014). As noted above, the small sample size of problematic drinkers allowed for only large effects to be clinically significant. Therefore, future research may benefit from increasing the sample size, allowing for more reliable findings. Additionally, potential intervention programs might be explored to promote healthier patterns of alcohol use among psychologists and trainees.

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Appendix A

RESEARCH INVOLVING HUMAN PARTICIPANTS
Exempt Application

This form shall be used if there is **minimal risk** to human subjects; one of the categories on the next page applies to the research. If there is more than minimal risk associated with the research (none of the conditions apply) or if the research utilizes a special population (children, prisoners, institutionalized individuals, etc.), please use the expedited/full application form found on the IRB website.

You should consult the university's document "Principles, Policy, and Applicability for Research Involving Human Subjects" and instructions on the IRB Committee website prior to completion of this form.

<http://www.fit.edu/research/committees/irb/>

IRB Contact Information:

Dr. Lisa Steelman, IRB Chairperson
lsteelma@fit.edu 674-7316

Investigator Information:

Title of Project:	Health Behaviors Contributing to Perceived Health Status, Mental and Physical Health Status, and Functional Impairment in Psychologists and Trainees
Date of Submission:	August 29 2016
Expected Project Start Date:	August 2016
Expected Project Duration:	December 2016

Principal Investigator:	Natasha Brown, M.S. – natashabrown2012@my.fit.edu
DRP Chair	Kristi Van Sickle, Psy.D
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Academic Unit:	School of Psychology
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Committee Member:	Richard Elmore, Ph.D.
Title:	Associate Professor
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Committee Member:	John Deaton, Ph.D.
Title:	Associate Professor, Director of Research, Chair of the Aviation Human Factors Program
Academic Unit:	College of Aeronautics
Phone:	321-674-7474
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Categories of Exempt Research

Researcher must choose one:

- 1) Research conducted in established or commonly accepted educational settings, involving **normal educational practices**, such as:
 - a. research on regular and special education instruction strategies, or
 - b. research on the effectiveness of or the comparison among instruction techniques, curricula, or classroom management methods.

- 2) Research involving the use of **educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior** unless:
 - a. the subjects can be identified, directly or through identifiers linked to the subjects and
 - b. any disclosure of subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Note: This exemption does not apply to survey procedures or interviews involving minors.

- 3) Research involving the use of educational tests, survey or interview procedures, or observation of **public behavior** if:
 - a. the subjects are elected or appointed public officials or candidates for public office or
 - b. the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

- 4) Research involving the **collection or study of existing data, documents, records, or specimens** if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, indirectly or through identifiers linked to the subjects.

- 5) Research and demonstration projects that are conducted by or subject to the approval of Department or Agency heads and that are designed to study, evaluate, or otherwise examine:
 - a. **public benefit or service programs**,
 - b. procedures for obtaining benefits or services under those programs,
 - c. possible changes in or alternatives to those programs or procedures, or
 - d. possible changes in methods or levels of payment for benefits or services under those programs.

- 6) **Taste and food quality evaluation** and consumer acceptance studies if:
 - a. wholesome foods without additives are consumed or
 - b. food is consumed that contains food ingredients found to be safe by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

If any part of this study will be funded by an external funding source, you must note the funding source and award/solicitation number below:

n/a

Answer the following questions as thoroughly as possible.

1. List the objectives of the proposed project.

The review of the literature suggests personal health behaviors are related to one's perceived health status. However, Yearwood (2014) found that, although psychologists and trainees are engaging in more positive health behaviors overall, their perceived health status is poorer than their comparable U.S. adult samples. Furthermore, psychology trainees and professionals reported more days of functional impairment due to physical or mental health difficulties when compared to equivalent U.S. adults. With respect to most individual health behaviors, psychologists and trainees performed significantly better than their U.S. counterparts. However, psychologists and trainees were more likely to engage in excessive alcohol use, binge drinking, or both than their control groups. Therefore, health behavior factors including weight maintenance, tobacco use, nutrition, physical activity, alcohol consumption, and sleep hygiene, will be examined with respect their relationships with one's perceived health status and days of functional impairment. Because having an identified healthcare provider has been linked to health outcomes and recent research found psychologists and trainees less likely to have one, this will also be investigated in terms of its relationship to perceived health status. The specific hypotheses of the current study include the following:

1. As alcohol consumption increases, overall perceived health, mental health, physical health, and functional capacity will decrease.
2. Alcohol consumption will account for a greater percentage of the variance in overall perceived health, days of poor mental health, days of poor physical health, and days of functional impairment when compared to BMI, smoking, physical activity, nutrition, and sleep.
3. Those who have an identified healthcare provider will endorse better overall perceived health, less days of poor physical health, less days of poor mental health, and less days of functional impairment, when compared to those who do not have an identified healthcare provider.

2. Describe the research project design/methodology. Discuss how you will conduct your study, and what measurement instruments you are using. Attach all research materials to this application. Please describe your study in *enough detail* so the IRB can identify what you are doing and why.

This cross-sectional survey study will be used to assess psychologists' and trainees' health behaviors and overall perceived health. In addition, this study will be conducted to determine the contribution of specific health behavior variables to psychologists' and trainees' perceived health statuses and days of functional impairment.

Members of identified professional psychology organizations were emailed an invitation to participate in a web-based survey. The questionnaire was disseminated using an internet-based survey site named QuestionPro. Participants were required to read and complete the online informed consent before beginning the survey. Participants were notified that it was possible to discontinue participation at any point during the survey. Once the survey was completed, a message was displayed thanking the participant for his or her participation. In addition, the respondents were given an opportunity to complete a separate survey, which would enter him or her into a drawing to win a \$100 gift card. Email addresses of individuals who elected to participate in the gift card drawing were collected in a secondary online-survey to maintain confidentiality and guarantee participants' identifying information would not be associated with response information. In July 14, 2013 the survey was posted on QuestionPro and data collection began. Data collection concluded on September 16, 2013.

The survey comprised of 47 items [See Appendix C]. The measurements and domains that comprise the present study's survey include the following health behaviors: The BRFSS (CDC, 2011c) was the primary self-report measure used to evaluate health behaviors. Thirty-five of the BRFSS questions will be used for this study, which will be taken verbatim from the BRFSS questionnaire to increase the level of comparability with control data. The BRFSS is a state-based telephone health survey that gathers data on preventive health behaviors, health risk behaviors, and health care access (CDC, 2012). Every year over 400,000 U.S. adults (18 years or older) are randomly selected for interview. The CDC gathered these data on a monthly basis by telephone survey in all 50 states, Puerto Rico, the U.S. Virgin Islands, the District of Columbia, and Guam since 1984. Participants in the interview were not given compensation for their participation.

Demographics of each sample (professional psychologists, trainees, and US adult controls) will be calculated. The frequency distributions, means, medians, and standard deviations of the primary variables (alcohol use, tobacco use, BMI, sleep, physical activity, and diet) will be calculated for the obtained sample. The intercorrelations among the variables will be calculated, and if significant relationships are obtained, regressions will be conducted. After testing the assumptions of the regression procedures, alcohol use will be regressed on days of functional impairment. In a separate linear regression, each health behavior will be regressed on perceived health. A chi-square analysis will be performed to determine the relationship between having an identified healthcare provider and levels of perceived health. Stepwise procedures will be used to explore the relationships among these variables and determine which combination of health behaviors best predicts perceived health status.

3. Describe the characteristics of the participant population, including number, age, sex, and recruitment strategy (attach actual recruitment email text, recruitment flyers etc).

This study will use a convenience sample of subjects who voluntarily participated in the survey. Subjects were primarily recruited from listservs of professional organizations, including Florida Institute of Technology, American Psychological Association, and Florida Psychological Association. Participants completed survey questions online. Suitability criteria for participation included adults (18 years old or older) whom were classified as professional psychologists or psychology trainees (i.e., post-doctoral resident, pre-doctoral intern, or graduate student). Participants were notified that involvement was voluntary and subjects had an opportunity to win a gift card. Participants' name and identifying information was removed from the assessment measure data collection. Participants who wanted to qualify to win a gift card were requested to include his/her contact information in a separate survey, to maintain anonymity of the data.

The Behavioral Risk Factor Surveillance System (BRFSS) data from the Centers for Disease Control and Prevention (CDC) U.S. telephone survey was used for the control sample groups, comprised of male and female adults in the U.S. whom participated in the 2011 survey (CDC, 2011a). The BRFSS data set is created by federal agencies and available in the public domain. A consideration for the professionals and trainees data was selection bias, due to the research being survey based. Since the nature of the survey is voluntary, subjects were biased by self-selection. Although random sampling is preferred to guarantee subjects are representative of nationwide demographic subgroups and geographical areas, it is not possible to conduct systematic random sampling, since there is no readily available database to acquire participants. Therefore, analyses were conducted to examine if any demographics or characteristics were poorly represented in the sample. Analyses were conducted on demographic and professional characteristics to determine if the survey underrepresented any ethnic group and to assess the sample was a comparable representation of the U.S. psychology workforce.

4. Describe any potential risks to the participants (physical, psychological, social, legal, etc.) and assess their likelihood and seriousness. Describe steps that will be taken to mitigate each risk.

N/A- I am using existing data.

5. Describe the procedures you will use to maintain the confidentiality and privacy of your research participants and project data. If video or audio recordings will be made, you must review the video/audio recording policy found on the IRB website and address precautions you will take in this section.

I will be using existing data, which maintained the confidentiality and privacy of research participants and project data.

6. Describe your plan for informed consent (attach proposed form).

Use of existing data

7. Discuss the importance of the knowledge that will result from your study (benefits to the field and to society) and what benefits will accrue to your participants (if any). Include information about participant compensation if appropriate.

It will be beneficial to investigate potential factors contributing to why psychologists and trainees engage in more positive health behaviors overall, yet perceive their health status to be poorer and reported more days of functional impairment when compared to their control groups.

8. Explain how your proposed study meets criteria for exemption from Institutional Review Board review (as outlined on page 2 of this form).

Use of existing data



Signature Assurances

I understand Florida Institute of Technology's policy concerning research involving human participants and I agree:

1. to accept responsibility for the scientific and ethical conduct of this research study,
2. to obtain prior approval from the Institutional Review Board before amending or altering the research protocol or implementing changes in the approved consent form,
3. to immediately report to the IRB any serious adverse reactions and/or unanticipated effects on participants which may occur as a result of this study.

PI Signature Natasha Brown

Date 9/7/16

Advisor Assurance: If primary investigator is a student

This is to certify that I have reviewed this research protocol and that I attest to the scientific merit of the study, the necessity for the use of human subjects in the study to the student's academic program, and the competency of the student to conduct the project.

Major Advisor Kristi Van Sickle, PsyD
 Major Advisor (print) KRISTI VAN SICKLE, PSYD

Date 9/14/16

Academic Unit Head: It is the PI's responsibility to obtain this signature

This is to certify that I have reviewed this research protocol and that I attest to the scientific merit of this study and the competency of the investigator(s) to conduct the study.

Academic Unit Head [Signature]

Date 9/20/16

FOR IRB USE ONLY

IRB Approval [Signature]
 Name 16-154
 IRB # _____

Date 9-22-16

Appendix B

Dear Participant,

The purpose of this study is to investigate the health and behavioral health practices of licensed psychologists and clinical/counseling psychology graduate students. After you have completed your responses to the survey, you will be able to enter into a raffle to win a \$100 Visa gift card.

Instructions:

1. Please read all information presented and answer accordingly.
2. Click “Submit” once you are satisfied with all of your responses.
3. Click on the link and enter your email address to be eligible to win a gift card.
NOTE: Email addresses are collected in a secondary form to ensure participants’ identifying information is separate and responses on the survey are kept confidential.

Your completion of these instructions will be considered your consent to participate in this study. Participation in this study is strictly voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. All information that you provide will be kept entirely confidential. There are no foreseeable risks involved in participating in this study. Benefits of participating in the study may include gaining awareness into personal health behaviors and a chance at winning a gift card.

Please feel free to contact me at jyearwood2010@my.fit.edu with any questions or comments regarding the study.

Regards,

J. Denard Yearwood, M.S.

Appendix C

1. Are you currently a professional psychologist?
 - Yes [Skip to question 3]
 - No

2. Are you currently a psychology trainee (i.e., graduate student, pre-doctoral intern, or post-doctoral resident)
 - Yes
 - No [*TERMINATE*]

3. Please indicate the setting of your primary employment/internship/practicum position.
 - University/Academic settings
 - Independent practice
 - VA medical center
 - General Hospital
 - Psychiatric hospital
 - Nursing home
 - University/college counseling center
 - Outpatient clinic
 - Rehabilitation facility
 - Primary Care Office
 - Managed care
 - Business/ govt and other
 - Other human service setting

4. How many hours per week do you spend in the following activities in your primary employment/practicum position?

(Write the hours for each activity in the boxes.) Write “0” if you do not engage in a particular activity. **YOUR ANSWERS SHOULD ADD UP TO THE TOTAL NUMBER OF HOURS PER WEEK IN YOUR PRIMARY POSITION**

Direct client/patient care (assessment, evaluation, etc.)	--
Practice Management	--
Clinical supervision (staff and trainees)	--
Clinical/community consultation and prevention	--
Educational activities (teaching, course evaluation, etc.)	--
Management and administration (policy/program development, etc.)	--
Research (basic and applied)	--
Other activities not mentioned above	--

5. Are you Hispanic or Latino?
 - a. Yes
 - b. No
 - c. Don't know / Not sure

6. Which one or more of the following would you say is your race?
 - a. White
 - b. Black or African American
 - c. Asian
 - d. Native Hawaiian or Other Pacific Islander
 - e. American Indian or Alaska Native
 - f. Other [specify]_____

7. What is your age?
 - a. __ Code age in years
 - b. Don't know / Not sure

8. Indicate sex
 - Male
 - Female
 - Transgendered

9. About how much do you weigh without shoes?
 - ____ [specify in pounds]
 - Don't know / Not sure

10. About how tall are you without shoes?
 - __ _ Height [specify in inches]

11. Would you say that in general your health is—?
 - Excellent
 - Very good
 - Good
 - Fair
 - Poor
 - Don't know / Not sure

12. Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?
 - __ Number of days
 - None
 - Don't know / Not sure

13. Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?
- __ Number of days
 - None
 - Don't know / Not sure

➤ *IF NONE above 2 questions go to next section, go to question 15*

14. During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?
- __ Number of days
 - None
 - Don't know / Not sure

15. Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare or Indian Health Services?
- Yes
 - No
 - Don't know / Not sure

16. Do you have one person you think of as your personal doctor or health care provider?
- Yes, only one
 - More than one
 - No
 - Don't know / Not sure

17. Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?
- Yes
 - No
 - Don't know / Not sure

18. About how long has it been since you last visited a doctor for a routine checkup? A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition
- Within past year (anytime less than 12 months ago)
 - Within past 2 years (1 year but less than 2 years ago)
 - Within past 5 years (2 years but less than 5 years ago)
 - 5 or more years ago
 - Don't know / Not sure
 - Never

19. Have you smoked at least 100 cigarettes in your entire life? NOTE: 5 packs = 100 cigarettes
- Yes
 - No [Skip to question 22]
 - Don't know / Not sure [Skip to question 22]
20. Do you now smoke cigarettes every day, some days, or not at all?
- Every day
 - Some days
 - Not at all [Skip to question 22]
 - Don't know / Not sure [Skip to question 22]
21. During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?
- Yes
 - No
 - Don't know / Not sure
22. Do you currently use chewing tobacco, snuff, or snus every day, some days, or not at all?
- NOTE:** Snus (Swedish for snuff) is a moist smokeless tobacco, usually sold in small pouches that are placed under the lip against the gum.
- Every day
 - Some days
 - Not at all
 - Don't know / Not sure

These next questions are about the fruits and vegetables you ate or drank during the past 30 days. Please think about all forms of fruits and vegetables including cooked or raw, fresh, frozen or canned. Please think about all meals, snacks, and food consumed at home and away from home.

23. During the past month, how many times per week did you drink 100% PURE fruit juices? Do not include fruit-flavored drinks with added sugar or fruit juice you made at home and added sugar to. Only include 100% juice.
- __ Per week
 - Never
 - Don't know / Not sure

24. During the past month, not counting juice, how many times per week did you eat fruit? Count fresh, frozen, or canned fruit
- __ Per week
 - Never
 - Don't know / Not sure
25. During the past month, how many times per week did you eat cooked or canned beans, such as refried, baked, black, garbanzo beans, beans in soup, soybeans, edamame, tofu or lentils. Do NOT include long green beans.
- __ Per week
 - Never
 - Don't know / Not sure
26. During the past month, how many times per week did you eat dark green vegetables for example broccoli or dark leafy greens including romaine, chard, collard greens or spinach?
- __ Per week
 - Never
 - Don't know / Not sure
27. During the past month, how many times per week did you eat orange-colored vegetables such as sweet potatoes, pumpkin, winter squash, or carrots?
- __ Per week
 - Never
 - Don't know / Not sure
28. Not counting what you just told me about, during the past month, about how many times per week did you eat OTHER vegetables? Examples of other vegetables include tomatoes, tomato juice or V-8 juice, corn, eggplant, peas, lettuce, cabbage, and white potatoes that are not fried such as baked or mashed potatoes.
- __ Per week
 - Never
 - Don't know / Not sure

The next few questions are about exercise, recreation, or physical activities other than your regular job duties.

29. During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?
- Yes
 - No [Skip to question 32]
 - Don't know / Not sure [Skip to question 32]

30. How many times per week did you take part in this physical activity during the past month?
- __ Times per week
 - Don't know / Not sure
31. And when you took part in this physical activity, for how many minutes or hours did you usually keep at it?
- __ _ minutes
 - Don't know / Not sure
32. During the past month, how many times per week did you do physical activities or exercises to STRENGTHEN your muscles? Do NOT count aerobic activities like walking, running, or bicycling. Count activities using your own body weight like yoga, sit-ups or push-ups and those using weight machines, free weights, or elastic bands.
- __ Times per week
 - Never
 - Don't know / Not sure
33. How often do you use seat belts when you drive or ride in a car? Would you say—
- Always
 - Nearly always
 - Sometimes
 - Seldom
 - Never
 - Don't know / Not sure
 - Never drive or ride in a car
34. During the past 30 days, how many days per week did you have at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor?
- __ Days per week
 - No drinks in past 30 days [Skip to question 38]
 - Don't know / Not sure [Skip to question 38]
35. One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you drank, about how many drinks did you drink on the average?
- NOTE: A 40 ounce beer would count as 3 drinks, or a cocktail drink with 2 shots would count as 2 drinks.
- __ Number of drinks
 - Don't know / Not sure

36. Considering all types of alcoholic beverages, how many times during the past 30 days did you have X [X = 5 for men, X = 4 for women] or more drinks on an occasion?
- __ Number of times
 - None
 - Don't know / Not sure
37. During the past 30 days, what is the largest number of drinks you had on any occasion?
- __ Number of drinks
 - Don't know / Not sure
38. During the past 30 days, for about how many days have you felt you did not get enough rest or sleep?
- __ Number of Days
 - None
 - Don't know / Not sure
39. On average, how many hours of sleep do you get in a 24-hour period? Think about the time you actually spend sleeping or napping, not just the amount of sleep you think you should get.
- NOTE: Enter hours of sleep in whole numbers, rounding 30 minutes (1/2 hour) or more up to the next whole hour and dropping 29 or fewer minutes.
- __ Number of hours [01-24]
 - Don't know / Not sure
40. Please indicate your current primary theoretical orientation:
- Behavioral
 - Biological
 - Cognitive
 - Cognitive/Behavioral
 - Developmental
 - Family
 - Humanistic/Existential
 - Integrative
 - Interpersonal
 - Psychodynamic/Psychoanalytic
 - Systems
 - Other

41. Please indicate reported training in intervention(s) for health issues:

- Read about topic
- Attended single workshop
- Attended multiple workshops
- Clinical course work
- Clinical supervision
- An area of expertise
- Primary area of expertise
- Other training
- No training or expertise

42. Approximately what percentage of your patients do you counsel on some type of health behavior (e.g., diet, exercise, smoking, weight, alcohol consumption, medical adherence, seatbelt use, sleep, etc.)?

__ __ % of patients

43. With a typical patient, how often do you actually perform counseling for these activities?

	Never	Rarely	Sometimes	Usually	Always
Nutrition					
Exercise/Physical Activity					
Weight					
Tobacco Use					
Alcohol					
Seatbelt Use					
Sleep					

44. In general, how confident are you in your abilities to counsel your patients on health behaviors?

	Not at all confident								Extremely confident
	1	2	3	4	5	6	7	8	9
Nutrition									
Exercise/Physical Activity									
Weight									
Tobacco Use									
Alcohol									
Seatbelt Use									
Sleep									

45. How important is counseling patients about health behaviors?
 1 (not at all important) to 9 (extremely important)

46. Are you currently attempting to change the following personal health practices?

	Yes	No
Improve nutrition		
Increase exercise/physical activity		
Lose or gain weight		
Stop or decrease tobacco use		
Stop or drink less alcohol		
Increase seatbelt use		
Improve quality or quantity of sleep		

47. To what extent does your own health behavior influence your counseling of patients about these same behaviors?

	Not at all								Very much
	1	2	3	4	5	6	7	8	9
Nutrition									
Exercise/Physical Activity									
Weight									
Tobacco Use									
Alcohol									
Seatbelt Use									
Sleep									

Table 1

Demographic Characteristics of Psychologists and Trainees

	Professionals		Trainees	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
<u>Gender^a</u>				
Male	76	24.28	41	22.28
Female	237	75.72	141	76.63
<u>Race^b</u>				
White	293	93.61	159	86.41
Black or African American	9	2.88	8	4.35
Asian	5	1.60	11	5.98
Hawaiian or Other Pacific Islander	1	0.32	1	0.54
American Indian or Alaska Native	2	0.64	1	0.54
Other	12	3.83	4	2.17
Don't know/ Refused	0	0	0	0
<u>Ethnicity^c</u>				
Hispanic or Latino	20	6.39	15	8.15
Not Hispanic or Latino	291	92.97	168	91.30
Don't know/Not sure	2	0.64	1	0.54

Note:

^aData available for professionals (N=313), trainees (N = 184)

^bData available for professionals (N=311), trainees (N = 184)

^cData available for professionals (N=313), trainees (N = 184)

Table 2

Means and Standard Deviations of Overall Perceived Health, Mental and Physical Health Status, and Functional Impairment Variables

	<i>M</i>	<i>SD</i>
Overall Perceived Health	2.15	.828
Days of Poor Mental Health	3.28	5.47
Days of Poor Physical Health	2.25	9.30
Days of Functional Impairment	1.38	3.31

Table notes: *N*= 497

Table 3

Means and Standard Deviations of Health Behaviors

	<i>M</i>	<i>SD</i>
Average Drinks of Alcohol Each Week	4.59	6.31
Body Mass Index	1.39	.841
Smoking	1.95	.210
Average Physical Activity Each Week	153.611	150.47
Sleep	6.87	1.57
Average Serving of Fruit Each Week	7.84	6.23
Average Serving of Vegetables Each Week	4.85	4.11
Participants With an Identified Healthcare Provider	.762	.439

Table notes: *N*= 497

Table 4

Correlations Among Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Alcohol Use	—	.004	-.593*	.014	.085	-.042	.042	-.029	-.004	-.045	.054
2. BMI		—	-.305	-.096*	.016	-.008	-.024	.025	.037	.055	.322*
3. Smoking			—	-.213	.297	-.379	-.028	-.005	.032	.023	-.041
4. Physical Activity				—	.067	.158*	.168*	-.094*	.047	-.101*	-.196*
5. Sleep					—	.079	.056	-.035	.015	.015	-.074
6. Fruit Intake						—	.304*	.090*	-.037	-.084	.147*
7. Vegetable Intake							—	.100*	-.043	-.038	.149**
8. Poor Mental Health								—	.164*	.388*	.183*
9. Poor Physical Health									—	.096*	.244**
10. Function Impairment										—	.202*
11. Overall Health											—

Note. * $p < .05$; ** $p < .01$.

Table 5

Multiple Regression Analysis Examining the Relationship Between Health Behaviors and Overall Perceived Health

Variable r_{part}^2	β
Alcohol .038	-.196
BMI .104	.322
Fruit Intake .021	-.147
Vegetable Intake .022	-.149
Sleep .005	-.074
Smoking .015	.122
Physical Activity .038	-.196

Note. N = 497. The dependent variable was overall perceived health. Beta values represent unique effects for each variable.

* $p < .05$; ** $p < .01$.

Table 6

Multiple Regression Analysis Examining the Relationships Between Health Behavior Factors and Days of Poor Mental Health

Variable r_{part}^2	β
Alcohol .001	-.029
BMI .001	.025
Fruit Intake .008	-.090
Vegetable Intake .010	-.100
Sleep .001	-.035
Smoking .028	-.169
Physical Activity .007	-.094

Note. N = 497. The dependent variable was days of poor mental health. Beta values represent unique effects for each variable.
* $p < .05$; ** $p < .01$.

Table 7
Identified Healthcare Provider Descriptive Statistics

Outcome	Group				t	Df
	Healthcare Provider		No Provider			
	M	SD	M	SD		
Overall Health	2.12	.82	2.23	.83	1.22	491
Poor Mental Health	2.90	4.94	4.57	6.89	2.39	146.07
Poor Physical Health	1.82	4.48	3.68	17.73	1.10	115.20
Functional Impairment	1.20	2.77	2.04	4.70	1.80	134.27

* $p < .05$.

Participants with a healthcare provider N= 381

Participants with no healthcare provider N= 112