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Evaluation of the Relationship between the Enneagram Personality Types and the Health-Promoting Lifestyle Profile (HPLP-II)

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Abstract **Original Research Article**

Background: Background and objectives: The Enneagram is a system that aims to classify personality types basically in nine categories. The relationship between personality traits and various health indicators was examined. Studies have shown that a healthy lifestyle can reduce the mortality and morbidity caused by chronic diseases. This study aims to investigate the role of the enneagram personality types on healthy life behaviors. ***Methods:*** The sample of the study comprised 553 people who were admitted to Ankara Yildirim Beyazit University Hospital for routine control with no chronic disease or regular drug use. The data were collected between June and September 2018 with a questionnaire consisting of 92 questions, including a sociodemographic information form, the HPLP-II scale, and the Enneagram personality scale. ***Results:*** In terms of the HPLP- II scale, the highest overall score was found in Type 7(Enthusiast) personality and the lowest score was found in Type 5 (Investigator) personality. Additionally, the highest scores on health responsibility, physical activity, spiritual growth, and stress management sub-scales were observed on Type 7 personality. Type 7 was physically more active than Type 2 (Helper). Type 5 had significantly lower scores on interpersonal relations compared to Type 2, Type 7, and Type 1 (Reformer). ***Conclusion:*** Some remarkable associations are found between some healthy lifestyle behaviors and the Enneagram personality types. Nevertheless, we think that a health-promoting lifestyle is a learnable model that requires proactivity and self-discipline. Considering the unique characteristics of each patient may provide more effective results on the guidance provided while consulting individuals on health promotion. At the same time clinicians can increase patients' adherence to treatment recommendations, and ultimately improve public health outcomes.

Keywords: Health-promoting lifestyle, Enneagram, personality, holistic approach.

INTRODUCTION

An unhealthy lifestyle is associated with a wide range of diseases and their mortality. Non-communicable diseases (NCDs) are among the leading causes of death and diseases in the world [1]. Among the risk factors of non-communicable diseases, preventable factors such as obesity, tobacco use, stress, and sedentary life play an important role, which are highly related to lifestyle [2]. The basic step in improving health and well-being is the adoption of healthy lifestyle behaviors starting from early childhood [3]. Some of the cost-effective and applicable evidence-based lifestyle change recommendations defined by WHO are the promotion of adequate and balanced nutrition, reducing or preventing tobacco use, increasing physical activity, reducing salt and fat consumption, and consuming at least five portions of fruit or vegetables per day [4, 5].

The researches show an association between lifestyle and personality traits [6]. There are various classifications of personality types used in the literature. One of these is the Enneagram system, which is a model that investigates categorically classified nine personality types, their complex relationships with each other, as well as healthy, average, and unhealthy behaviors of each type. It asserts that human beings have three basic centers as mind, emotion, and instinct; and that each center has three personality types [7]. The most important difference from other personality theorems is that it is a more dynamic and personally interpretable personality system without sharp boundaries with the definition of wing factor, stress, and security points [8].

The main personality types of the Enneagram

Type 1 (The Reformer):

Healthy Type 1s, who have a principled, objective, and balanced character, want everything to be

perfect. They chase the ideal. They are orderly, rational, honest, and ethical. Their self-discipline is high. They want to correct everyone; they are always critical. They are overly cautious, afraid of making mistakes [7].

Type 2 (The Helper):

They are giving, compassionate, humble, generous, and service-focused. They seek to be indispensable to others, loved, and appreciated. They dedicate themselves to the needs of others. They are afraid of being alone [9]. Type 2's, whose empathy skills are highly developed, can look at everything positively. Their unhealthy attitudes include aggressive, obsessive, and oppressive behaviors. This can make it difficult for them to tie up with others, and leave them alone [10, 11].

Type 3 (The Achiever):

Result-oriented, stubborn, and always motivated Type 3's attract attention with their high performance and ambition. They value themselves and have a glitter that attracts others. They care about status and image, and they keep pace with innovations. They care a lot to be appreciated in their social life. For Type 3's, the career comes before family. Besides, they may be arrogant and addicted to reputation [12].

Type 4 (The Individualist):

They express their feelings openly, are melancholic, introverted, creative, and artistic. Their aesthetic understanding is highly developed. They are kind, sensitive, considerate, and understanding individuals towards themselves and others. Romantic and passionate Type 4's become easily vulnerable to extreme sensuality; they usually feel "different" and "alien" [13].

Type 5 (The Investigator):

They enjoy loneliness. Their intuition, observation ability, and predictions are highly developed. They have a nitpicker character and they give importance to their own thoughts rather than facts. Standing out with their high-level mental capacities, Type 5's are also attentive, hardworking, curious, and open to learning. Besides, healthy Type 5s may also be compassionate, naive, respectful, and reliable [9, 10, 11].

Type 6 (The Loyalist):

They are trustworthy, dedicated, defensive, and skeptical [7]. Type 6's are true believers, who have developed loyalty, desired to be in groups, and are open to cooperation. They identify themselves with the people they see oppressed and become protective and compassionate towards them. The average Type 6 looks suspiciously at everyone and everything, including himself, and questions his life. It is difficult to gain the trust of a Type 6, who is constantly on alert [14].

Type 7 (The Enthusiast):

They are free-spirited, optimistic, cheerful, at peace, and happy types. They have refined tastes. They love adventure and fun. They are quick-witted, they can deal with more than one area at the same time. They cannot specify priorities and say no. They are usually messy and uneven [11, 15].

Type 8 (The Challenger):

They are people who love and achieve authoritarianism. Their self-confidence is very high. The confidence in their high physical ability underlies this self-confidence. They show their anger and strength clearly. Type 8s are also people who want to taste various pleasures, are daring, passionate, adventurous. They take risks to prove themselves and get excited [11, 15].

Type 9 (The Peacemaker):

They are peaceful, accommodating, guiding, and avoiding conflicts. They are far from creating tension in both their business and private lives. They are persons who work in harmony with others, and whose happiness is clear from the outside. They respect differences, accept ideas without judgment, and support positive competition. They are lively, full of life, mediator types. They understand other people's perspectives, thoughts, but are not so good at knowing what themselves want or think [7, 16].

This study aims to investigate a probable relationship between personality types defined according to the Enneagram system and the implementation of the health-promoting lifestyle profile.

METHODS

A cross-sectional study using convenience sampling was conducted on 553 healthy adult volunteers who attended the family medicine polyclinics of Ankara Yildirim Beyazit University Hospital for routine check-ups between July 2018 and November 2018. After the participants were informed about the study, their consent was obtained and a questionnaire form consisting of three parts was applied. Volunteers who were over the age of 18, literate, without known chronic disease or drug use, were included in the study. Data were collected using a structured questionnaire form consisted of a sociodemographic data form, Health-Promoting Lifestyle Profile Scale-II, and the Enneagram Personality Scale.

Sociodemographic Data Form

In addition to *HPLP-II* and *The Enneagram Personality Scale*, a sociodemographic data form was filled by all participants. In this form participants answer the questions on age (continuous), gender (male/female), marital status (single/married/divorced/widowed), education level (high school or below/university or above), employment status (employed, unemployed/student/other), BMI (height, weight), income level (categorized as low, middle, or high based on self-perception), and self-assessed health status (very poor, poor, moderate, good, excellent). Participants were

also asked about their smoking status (current smoker, former-smoker, non-smoker), alcohol consumption (none, occasional, former drinker), and physical activity level (low, moderate, high), as well as the reason and time for their most recent visit to a physician. These data were analyzed to explore their potential relationship with personality types and health-promoting lifestyle behaviors.

Health Promoting Lifestyle Profile Scale-II

It was first developed in 1987 by Walker *et al*. based on Pender's health promotion model. The scale was revised in 1996 and named as HPLP-II, and consists of 52 items in six sub-dimensions, which are; spiritual growth, interpersonal relationships, nutrition, physical activity, health responsibility, and stress management [17]. The Turkish validity and reliability study of the scale was performed by Bahar *et al*. in 2008 [18]. The items of HPLP-II are scored according to the four-point Likert [1 (never), 2 (sometimes), 3 (often), and 4 (routinely)]. The score range of the scale is 52 to 208. Higher scores indicate that the person adopts more healthy lifestyle behaviors [19].

The Enneagram Personality Scale

The 27-question Enneagram Personality Scale developed by Subaş *et al*. based on the Enneagram methodology was used to determine the personality types of the participants in the study. There are three questions for each main personality type in the scale and the dominant type is determined by evaluating the answers. The Cronbach-α value of 27 items of the scale is 0.901; the Guttman reliability coefficient is 0.915; the Spearman-Brown coefficient is 0.910 [20].

Statistical analysis

All statistical analyses were performed using the R statistical programming language (version 3.5.1). The normality of continuous variables such as age, body mass index (BMI), and cigarette pack-year index was assessed using the Shapiro–Wilk test. Since most variables did not follow a normal distribution, nonparametric statistical methods were primarily utilized. Descriptive statistics were reported as mean ± standard deviation for normally distributed variables and as median with interquartile range (IQR) or minimum–maximum values for non-normally distributed variables.

Group comparisons were implemented using the Mann-Whitney U test for two independent groups and the Kruskal-Wallis test for comparisons in more than two groups. Post-hoc analyses were conducted using the Dunn-Bonferroni method when the Kruskal–Wallis test showed meaningful differences. Associations between categorical variables were assessed by the Pearson Chi-square test.

We also did extra comparisons between different groups. These groups were based on social and demographic characteristics. We used Chi-square tests for yes/no type data, and nonparametric tests like Kruskal–Wallis or Mann–Whitney U for number data. And also, we performed multiple linear regression analyses. The aim was to prove how personality type affects healthy lifestyle behavior scores. Potential affecting factors were age, gender, education level, and income level. For all analyses, a p-value of <0.05 was noted statistically significant.

RESULTS

Most of the participants in the study were young adults, and 62.4% were between 18 and 34 years old. The mean age was 30.5 ± 11.8 years. Most participants were female (57.3%), married (57.0%), and had university-level education or higher (60.9%). 37.6% of participants had a job, and over half (54.8%) said their income was average. When it comes to habits, 29.7% were current smokers, and 13.2% reported occasional alcohol consumption. Nearly half (48.8%) had a normal BMI, and 50.5% described their health as good (Table 1).

Table 1: Participants' sociodemographic information, cigarette-alcohol consumption habits, body mass indexes and health perceptions

Variable	Category	N (%)
Age Group	18–34	345 (62.4%)
	35–49	152 (27.5%)
	50–64	52 (9.4%)
	65 and above	4 (0.7%)
Gender	Female	317 (57.3%)
	Male	236 (42.7%)
Marital Status	Married	315 (57.0%)
	Single	213 (38.5%)
	Divorced/Widowed	25 (4.5%)
Education Level	High school or below	216 (39.1%)
	University or above	337 (60.9%)
Employment Status	Employed	208 (37.6%)
	Unemployed/Student/Other	345 (62.4%)
Income Level	Low	101 (18.3%)
	Middle	303 (54.8%)
	High	149 (26.9%)

Variable	Category	N (%)
Smoking Status	Current smoker	164 (29.7%)
	Former smoker	47 (8.5%)
	Non-smoker	342 (61.9%)
Alcohol Consumption	None	468 (84.6%)
	Occasional	73 (13.2%)
	Former drinker	12 (2.2%)
Body Mass Index (kg/m²) *	Underweight	23 (4.2%)
	Normal	270 (48.8%)
	Overweight	176 (31.8%)
	Obese	84 (15.2%)
Perceived Health	Very Poor	6 (1.1%)
	Poor	22 (4.0%)
	Moderate	191 (34.5%)
	Good	279 (50.5%)
	Excellent	55 (9.9%)

*According to the Body Mass Index, 0-18.49 are classified as underweight, 18.5-24.99 as normal, 25-29.99 as overweight, and 30 and over as obese.

In our study, the most common personality type was number 1, and the least common personality type was number 5. The comparison of the personality types of participants in terms of gender is shown in Table 2.

Table 2: Comparison of personality types in terms of male and female gender

Personality types	Women (%57.42; n=317)			Men (%42.70; n=236)			Total		
	n	Column %	Row %	n	Column %	Row %	n	%	p
The Reformer (1)	69	21.77	54.33	58	24.60	45.67	127	22.97	0.437
The Helper (2)	27	8.52	77.14	8	3.40	22.86	35	6.33	0.014
The Achiever (3)	25	7.89	39.68	38	16.10	60.32	63	11.39	0.002
The Individualist (4)	31	9.78	72.09	12	5.10	27.91	43	7.78	0.041
The Investigator (5)	18	5.68	66.67	9	3.80	33.33	27	4.88	0.314
The Loyalist (6)	24	7.57	70.59	10	4.20	29.41	34	6.15	0.107
The Enthusiast (7)	50	15.77	60.98	32	13.60	39.02	82	14.83	0.469
The Challenger (8)	37	11.67	46.84	42	17.80	53.16	79	14.29	0.042
The Peacemaker (9)	36	11.36	57.14	27	11.40	42.86	63	11.39	0.975

The cumulative smoking status was divided into two categories according to the pack-year index (PYI), classified as "low" if PYI ≤ 20, and "high" if PYI> 20. Among the personality types, it was observed that the type with the most common "high" pack-year index rate was Type 8 personality (15.2%) $[x^2(8) = 18.495, p = 0.018$.

Instead of comparing each personality type with other types individually in terms of smoking habits, all other personality types were combined under the category of "other types" and each personality type was compared with "the other type". After performing the 3x2 cells Chi-square tests, it was seen that the smoking habits of personality Type 1 differed from the other personality types category $[x^2(2) = 7.1, p = 0.028]$. According to the post-hoc test results performed to determine in which consumption habits these differences exist, individuals in Type 1 personality quit smoking more than individuals in the "other personality types" category (p = 0.008). There was no significant difference between smokers and non-smokers.

When the relationship between the participants' personality types and their perception of self-health is examined, Type 7 (23.6%) personality type had the highest perception of "excellent" health among all participants, Type 1 had the highest "good" (26.2%) and "moderate" health perception (20.9%), Type 2 had the highest "weak" health perception (22.7%), and Type 8 had the highest frequency of "very weak" perception of health (66.7%). We found that personality types differ statistically according to personal health perception p=0.03]. In post-hoc tests; the Type 2 personality category contained more persons with a "poor" perception of health than statistically expected (p = 0.001), and Type 8 personality contained more persons with "very weak" health perception than expected (p <0.001) (Figure 1).

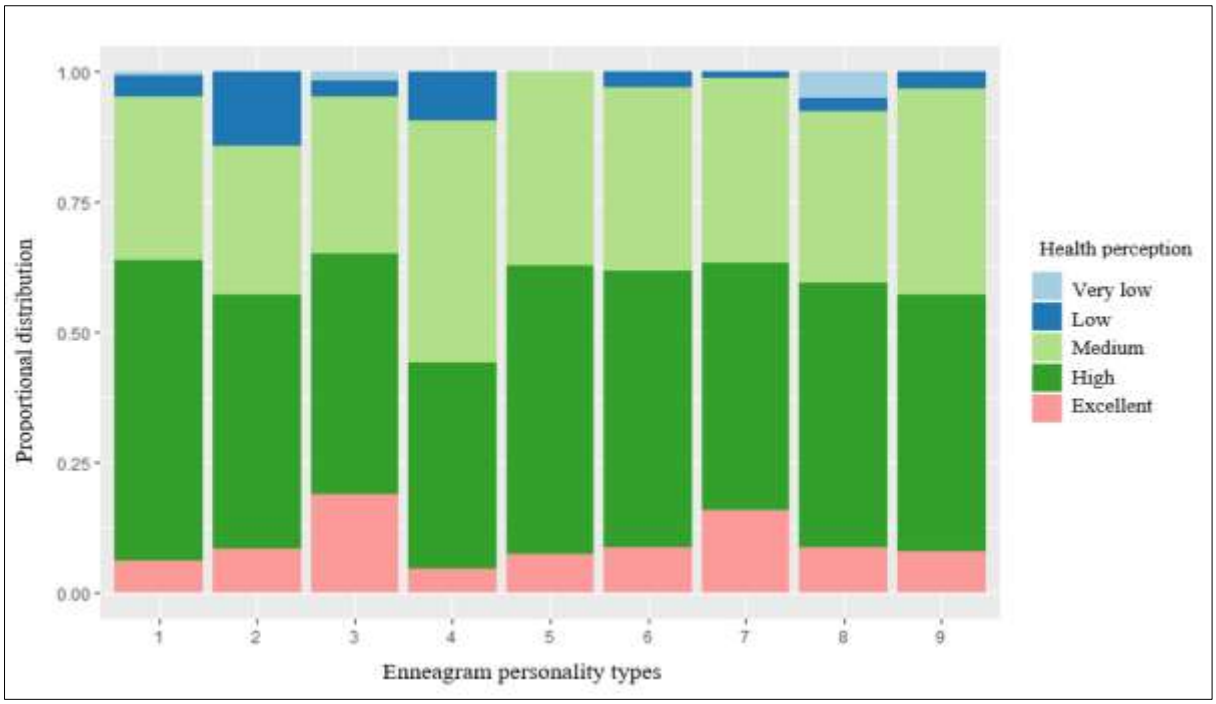

Figure 1: Proportional distribution of personal health perception according to personality types

As a result of the Kruskal-Wallis H test conducted to reveal whether there is a significant difference between the Enneagram categories in terms of HPLP-II scale total scores, a significant difference was found $[\chi|2(8) = 17.957, p = 0.021]$. As a result of the Dunn-Bonferroni post-hoc test performed to determine which binary groups caused this difference, the difference in HPLP-II total score between Type 5 personality (median = 117) and Type 7 (median = 131), that was found to be statistically significant (Z = -3.66, p = 0.008). We found no significant difference between other binary groups (Figure 2). The Kruskal Wallis test was performed to explore whether there is a difference between personality types in terms of HPLP-II sub-dimension scores. The difference between personality types in terms of "Physical Activity" and "Interpersonal Relationships" sub-dimensions scores were found to be significant (Table 3).

Table 3: The Relationship Between Personality Types and HPLP-II Sub-Dimensions

	HPLP-II sub-dimensions																	
	Interpersonal Relations			**Nutrition**			**Health Responsibility**			**Physical Activity**			**Stress Management**			**Spiritual Growth**		
Personality types	median	min	max	median	min	max	median	min	max	median	min	max	median	min	max	median	min	max
The reformer	25	13	36	20	12	33	20	11	34	15	8	32	19	10	30	26	13	36
The helper	26	18	36	19	14	29	20	14	28	13	8	25	19	12	25	27	16	34
The achiever	25	11	36	20	10	33	19	9	33	16	8	32	18	9	31	27	10	36
The individualist	24	18	36	19	12	30	21	10	33	15	8	30	19	12	30	25	17	35
The investigator	22	13	34	18	12	24	19	10	27	15	8	29	19	14	25	24	15	34
The loyalist	25	20	34	20	14	34	21	14	36	15	8	24	18	13	28	27	19	35
The enthusiast	27	12	35	20	11	30	21	12	35	17	8	28	19	9	30	28	14	36
The challenger	24	15	34	20	13	27	19	9	31	16	8	29	18	9	32	26	14	36
The peacemaker	25	14	35	19	12	28	20	11	31	16	8	31	19	10	30	27	15	36
P value	**<0.001**			**0.234**			**0.425**			**0.023**			**0.550**			**0.144**		

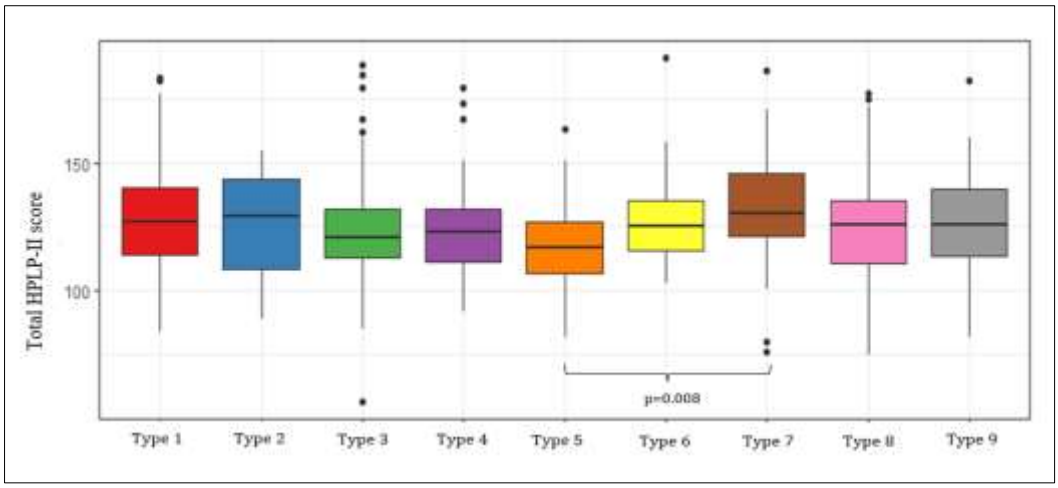

Figure 2: The distribution of total HPLP-II scores according to personality types

In Dunn-Bonferroni post-hoc test, Type 7 was found to have higher scores than Type 2 in the physical activity sub-dimension (Z = 3.45, p = 0.023) (Figure 3a). On the other hand, Type 5 had significantly lower scores in the sub-dimension of interpersonal relations, compared to Type 2, Type 7, and Type 1 (Figure 3b).

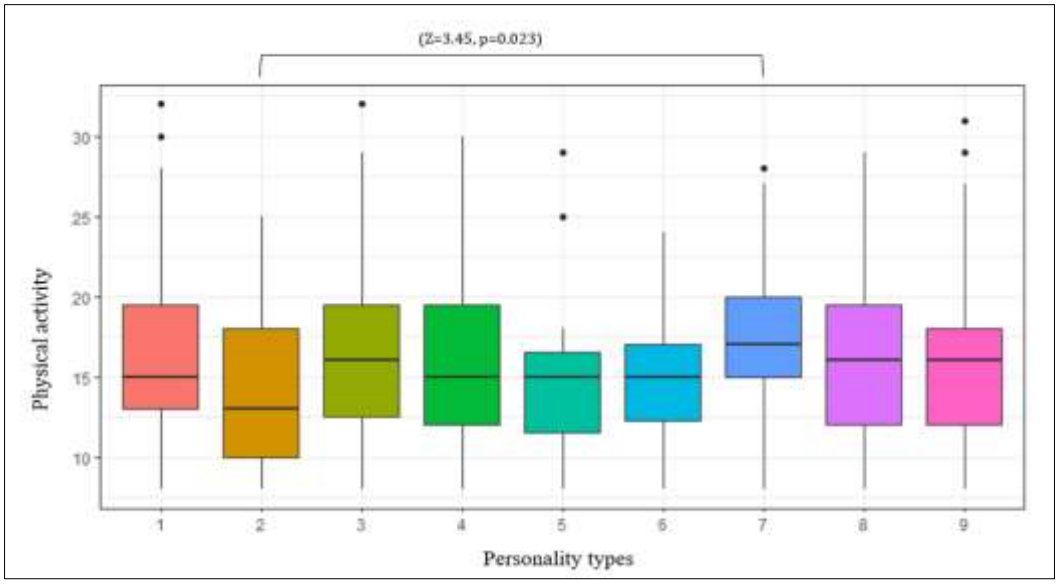

Figure 3a: Statistical distribution of personality types according to physical activity sub-dimension

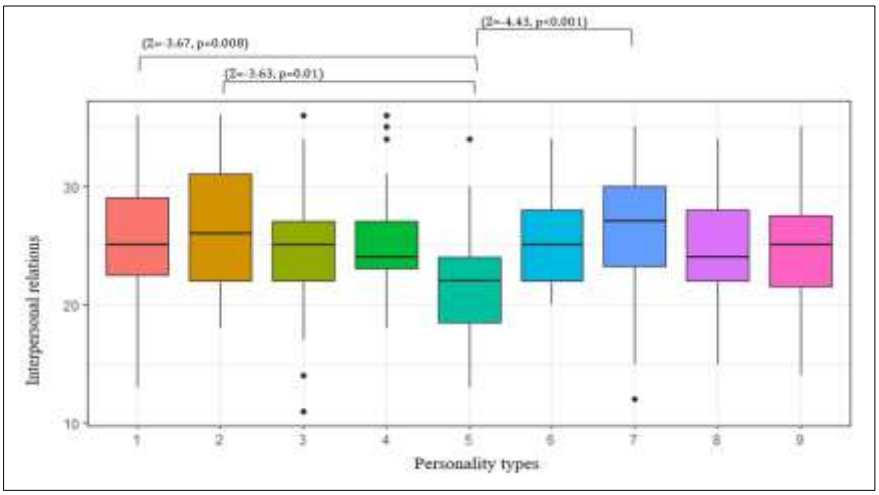

Figure 3b: Statistical distribution of personality types according to interpersonal relations sub-dimension

DISCUSSION

This study showed some remarkable associations between the Enneagram personality types and some health-promoting lifestyle behaviors. Type 7 personality had significantly higher median HPLP-II scores than Type 5 ($Z = -3.66$, $p = 0.008$). So Type 7 has a greater tendency to adopt health-promoting behaviors. At the same time, Type 7 got the highest score from health responsibility, physical activity, spiritual growth, and stress management from HPLP-II sub-scales. Of these, only the difference between Type 7 and Type 2 in the Physical activity sub-scale was found to be statistically significant. In a study from Iran, it was found that those with Type 2 and Type 3 personalities are more ready for lifestyle changes, and those with Type 8 are in the most resistant group [21]. The energetic, lively, tireless, adventurous nature of Type 7 personality suggests that they may have a high interest in physical activity. Their happy, positive, harmonious, and relaxed manner; their structure, which aims to exclude emotions such as boredom and disgust, suggests that they can be successful in stress management.

In the interpersonal relations subscale, it was found that the Type 5 personality scored significantly lower than the Type 1, Type 2, and Type 7 personalities. Individuals with Type 5 personality place little value on emotional and interpersonal dimensions and these aspects are usually found underdeveloped on them. They cannot socialize with people quickly. We think that their discreet, quiet, shy nature and loving loneliness cause them to get lower scores on the interpersonal relations subscale compared to other types.

It has been observed that individuals with Type 1 personality quit smoking more than other personality types. In the study of Saeidi *et al*., it was observed that Type 1s and Type 3s show higher health responsibility, which supports our findings [22]. Considering that the Type 1s have a perfectionist, principled structure, and the ability to direct their instincts to behaviors that are acceptable to society, it can be thought that smoking cessation behavior may be seen at a higher rate to achieve perfection in health [7]. Along with the opinions that support this, it was stated that the high perfectionism characteristics of this personality type may occasionally lead them to have difficulty in keeping up with a determined program [16, 22]. Type 1 personality has also been linked to a higher risk of cardiovascular diseases [23]. Further studies which are evaluating the cardiovascular risks and smoking habits of Type 1s together can reveal whether this association is coincidental or not.

Among personality types, it was observed that Type 8 had the highest cumulative smoking rate. Considering the perception that smoking is a symbol of authority, charisma, and self-confidence in some segments of the society, it can be thought that self-assertion, self-confidence, and authority traits of Type 8 personality may be effective in smoking more intensely than other types [7]. In a study using the Riso-Hudson Type Enneagram Indicator Questionnaire, it was seen that the personality types most associated with addiction were Type 5, Type 4, and Type 1, respectively [24]. However, in the same study, it is an interesting finding that there is a addiction scores increased with higher scores across all personality types.

We analyze that sociodemographic factor such as age, education level, and marital status showed variation across different personality types. At the same time these sociodemographic factors were moderately associated with health behavior scores. For example, participants with higher education levels tended to report better health-promoting lifestyle scores across all Enneagram types. This matches with previous study indicating that higher education and income are generally associated with more health awareness and more proactive lifestyle choices. These results show that it is important to adjust for sociodemographic variables when interpreting personality-based differences in health behavior.

CONCLUSION

This study is among the first to explore the relationship between Enneagram personality types and health-promoting lifestyle behaviors. While we identified notable associations between certain Enneagram personality types and health-promoting lifestyle profile—such as physical activity and stress management—we believe that healthy behaviors are fundamentally learnable and not rigidly determined by personality. Although some personality types may be advantageous compared to others in terms of physical activity and stress management, it will be beneficial for everyone to take responsibility for their own health for a long and healthy life. Evaluation of the Enneagram personality types may prove useful in daily practice within the scope of the personalized care principle. It may help clinicians identify potential health risks, tailor lifestyle recommendations to align with a person's core motivations and enhance both patient satisfaction and long-term health outcomes. Moreover, considering the unique and complicated characteristics of each individual may lead to more effective guidance when consulting individuals on health promotion [25, 26]. This study bridges psychology and preventive medicine by introducing a novel, personalized framework for promoting health. By considering personality traits in healthcare planning, clinicians can optimize patient engagement, increase adherence to healthy behaviors, and ultimately improve public health outcomes. In this way, more effective results can be achieved in specific areas such as smoking cessation counseling and family counseling [22, 24, 26].

Ethical considerations

Ethical approval was taken from the local ethics committee (date: 28.06.2018, approval number: 19).

Author Contributions: Dr. Hatice Seyma ERCIN: data collection, approval of the final version, statistical analysis

Assist. Prof. Dr. Basri Furkan DAGCIOGLU: study design, first draft, literature research

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Conflict of Interest: The authors declare no conflict of interest.

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