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THE IMPACT OF UNIVERSITY STUDENTS' INDIVIDUAL HEALTH PERCEPTIONS ON INTERNET ADDICTION LEVELS

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Abstract

The aim of this study is to investigate the impact of university students' individual health perceptions on the level of internet addiction. Additionally, the study aims to reveal differences in internet addiction and individual health perceptions among students based on various demographic variables. A total of 286 students from Düzce University participated in the study. The data collection tools used were the Internet Addiction Scale and Individual Health Perception Scales. It was found that the students' levels of internet addiction were low, while their individual health perceptions were at a moderate level. The average internet addiction scores were relatively higher for male students, those enrolled in formal education, and those with a moderate income level compared to other groups. It was observed that the level of health perception did not vary according to students' income status, gender, type of settlement, and type of education. A weak relationship was identified between university students' health perceptions and internet addiction. These findings contribute significantly to understanding the relationship between internet addiction and health perceptions among university students. However, it should be noted that further research is needed to better comprehend the complexity of this relationship. This study may serve as a foundation for future research aiming to develop effective intervention strategies against internet addiction.

Keywords: Digital Addiction, Health Perception, University Students.

Jel Codes: I10, I12, I20.

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ÜNİVERSİTE ÖĞRENCİLERİNİN BİREYSEL SAĞLIK ALGILARININ İNTERNET BAĞIMLILIK DÜZEYLERİNE ETKİSİ

Öz

Bu çalışmada amaç, üniversite öğrencilerinin bireysel sağlık algılarının internet bağımlılık düzeyi üzerinde etkisini ortaya koymaktır. Ayrıca öğrencilerin çeşitli demografik değişkenlere göre internet bağımlılık ve bireysel sağlık algılarına yönelik farklılıkları ortaya koymaktır. Çalışmaya Düzce üniversitesinde eğitim gören 286 öğrenci katılım sağlamıştır. Veri toplama aracı olarak internet bağımlılığı ölçeği ve bireysel sağlık algısı ölçekleri kullanılmıştır. Öğrencilerin internet bağımlılık düzeylerinin düşük, bireysel sağlık algılarının ise orta düzeyde olduğu tespit edilmiştir. Ortalama internet bağımlılık skorları erkek, örgün öğrenim ve orta gelir düzeyine sahip öğrencilerde diğer gruplara nispetem daha yüksektir. Öğrencilerin gelir durumuna, cinsiyete, yerleşim türüne ve eğitim türüne göre sağlık algı düzeyi değişmediği tespit edilmiştir. Üniversite öğrencilerinin sağlık algıları ile internet bağımlılığı arasında zayıf bir ilişki bulunmuştur. Bu bulgular, üniversite öğrencilerinin internet bağımlılığı ve sağlık algıları arasındaki ilişkiyi anlamak için önemli bir katkı sağlamaktadır. Ancak, bu ilişkinin karmaşıklığını daha iyi anlamak için daha fazla araştırmaya ihtiyaç olduğu unutulmamalıdır. Bu çalışma, internet bağımlılığına karşı etkili müdahale stratejileri geliştirme çabalarına yönelik gelecekteki çalışmalar için temel oluşturabilir.

Anahtar Kelimeler: Dijital Bağımlılık, Sağlık Algısı, Üniversite Öğrencileri.

Jel Kodları: I10, I12, I20.

1. INTRODUCION

Recent times have seen the internet becoming an integral part of our lives, and its increasing usage among the youth has made internet addiction an important issue. This situation, especially considering its potential effects on university students who make up a large portion of the young population, requires significant attention. Internet addiction can negatively affect individuals' social, psychological, and even physical health. However, whether individuals' own health perceptions have an impact on their levels of internet addiction is a topic not adequately covered in the literature.

Excessive use of the internet has been linked to various adverse mental health effects, including anxiety, depression, and psychopathology (Fallah et al., 2020; Kuss & Griffith, 2017). The accessibility and prevalence of the internet among students make them a clear target for the risk of internet addiction (Kuss & Griffith, 2017, p, 311). As the digital world expands, understanding the impact of internet addiction on the health perceptions of university students is crucial. Previous studies have emphasized the relationship between internet addiction and mental health problems, indicating a need for preventive measures and appropriate treatment (Lin et al., 2014, p, 662). The harmful effects of internet use have been acknowledged by organizations such as the European Parliament, which researches internet addiction and its potential negative outcomes (European Parliment, 2020).

The widespread use of the internet for various purposes, such as studying, socializing, entertainment, and gaming, complicates the identification of problematic internet usage. Students who are addicted to the internet are more likely to experience negative outcomes, such as academic problems, social isolation, and mental health issues (Rosen et al., 2013, p, 2507; Wang et al., 2018, p, 1027; Young, 2010, p, 8; Chen et al., 2019a, p, 5052; Lee et al., 2014, p, 377). Tabatabaee et al. (2018) found that there is a relationship between internet addiction and body mass index and this has an impact on sleep quality, physical activity and eating habits. In China, the prevalence of internet addiction was significantly higher in overweight and obese people (Li et al., 2014).

Various factors affecting internet addiction include individual health perceptions. Individual health perceptions express people's own views on their health and well-being (Lin et al., 2011, p, 743; Park et al., 2008, p, 898). People with negative individual health perceptions may be more likely to engage in unhealthy behaviors such as excessive internet use. Several reasons can explain why people with negative individual health perceptions may be more addicted to the internet. First, the internet can provide a way for people to escape negative thoughts and feelings about their health. Second, the internet can provide a sense of control and dominance, which may be attractive to people who feel they have little control over their health status. Third, the internet can provide a sense of connection and belonging, which may be significant for those who feel isolated or lonely (Rosen et al., 2013; Wang et al., 2018; Kim et al., 2018; Chen et al., 2019b; Chen et al., 2019c; Kuss et al., 2018; Yu et al., 2019).

According to the results of the "Household Information Technologies Usage Survey-2022" conducted by the Turkish Statistical Institute (TUIK), the "internet usage rate" was 85.0% in 2022 for the 16-74 age group, whereas it was 82.6% in 2021. The proportion of households with internet access in Turkey was determined as 94.1% for the year 2022, and as 92.0% for the previous year (TUIK, 2022).

The youth assess cell phones differently compared to other digital media tools, and these devices are increasingly utilized not only as communication tools but essentially as miniature computers. This trend contributes to the rise in digital addiction (Haddock et al., 2022).

With the increasing dependency on digital technology, it becomes crucial to uncover the factors influencing internet addiction, with individual health perception being one of them. The manner in which university students perceive their own health has the potential to impact their levels of internet addiction. Thus, the objective of this study is to scrutinize the influence of university students' individual health perceptions on their levels of internet addiction.

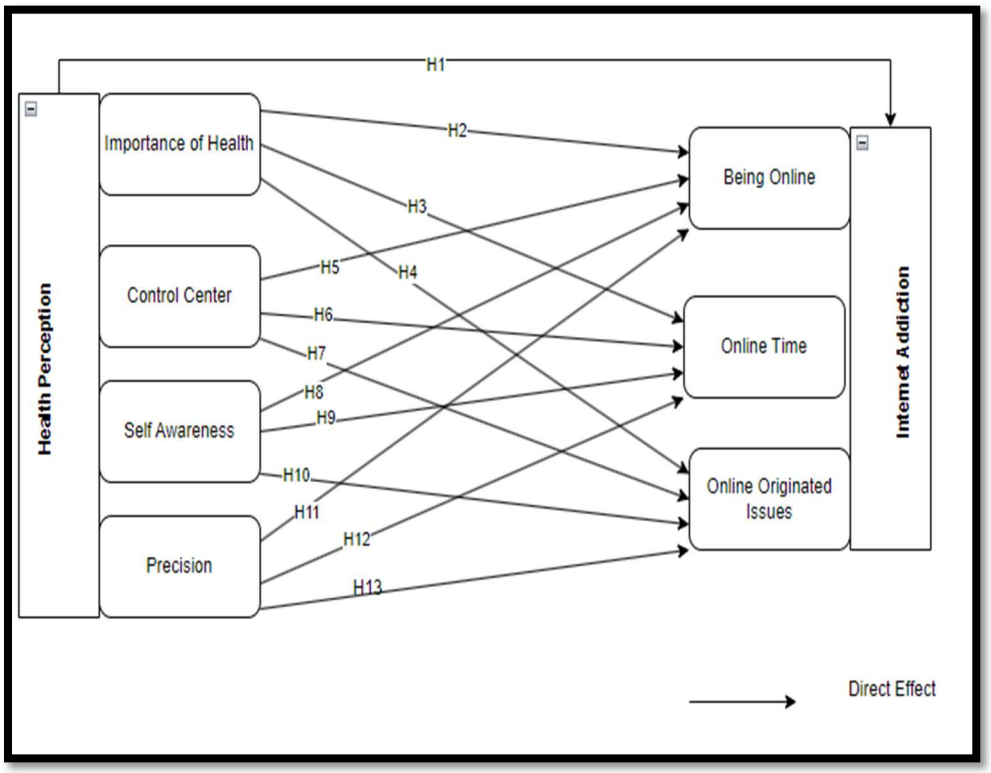
Additionally, it aims to investigate the variations in internet addiction and individual health perception based on diverse demographic variables. The outcomes of this study may encompass findings geared towards formulating effective strategies for preventing and mitigating internet addiction among university students. This information could prove beneficial for health service professionals, educators, and policymakers in gaining a deeper understanding and overseeing the internet usage of young individuals. Moreover, recognizing the potential impact of health perception on internet addiction can contribute to the development of more efficient intervention strategies in this field.

2. METHOD

2.1. Model of the Research

The following model has been developed within the scope of the above mentioned literature.

Figure 1. Research Model



Under the context of the model above, the following hypotheses have been developed.

H1: Students' perceptions of individual health have an impact on their levels of internet addiction.

Within the scope of hypothesis H1, the effect of the sub-dimensions of the individuals' health perception scale on internet addiction was also examined. (H2-H13).

2.2. Study's Universe and Sample

The universe of the study consists of university students studying at Düzce University in the Spring term of 2022-2023. Various criteria exist in the literature for determining the study's sample. In this study, the criterion suggested by Bryman & Cramer (2001) and often utilized in many social sciences studies is adopted; namely, the number of expressions in the data collection tool/scale(s) should preferably be five times or ten times the number. Based on this criterion, considering the total number of 35 expressions in the two scales present in the survey, it has been decided that a sample group reached with at least 175 (5x35) university students will be sufficient.

In the study, 286 university students were reached, and it was decided that this number was sufficient for the sample according to the criteria of Bryman and Cramer (2001). For the exclusion criteria, participants with incomplete survey responses or those who did not meet the specified criteria related to the expressions in the scales will be excluded from the final analysis. Convenience sampling was employed as the sampling technique in this study due to its fast, easy, and cost-effective nature.

2.3. Data Collection Tools Used in the Study

The survey, consisting of three sections, was used as a data collection tool in this study.

Demographic Information Form: Five questions about the students gender, learning style, educational background, family income status, and typical settlement are included in this form that was made by the researchers.

Internet Addiction Scale: This scale was developed by Balta & Horzum (2008) and consists of three sub-dimensions and 20 items. The first dimension is the preference for being online over daily life (10 items), the second dimension is the desire to increase online time (5 items), and the third dimension is problems stemming from being online (5 items). High scores from the scale indicate high internet addiction. The Cronbach Alpha coefficient for the scale in this study was found to be 0.842, with the sub-dimensions found to be 0.838, 0.833, and 0.817 respectively. The scale sub-dimensions are explained below:

- Preference for being online over daily life: This dimension expresses that the individual experiences problems in daily life due to internet use, cannot finish tasks on time, and tries to live daily life in the virtual world.
- Desire to increase online time: This dimension expresses that the individual sees life as meaningless when not using the internet and constantly thinks about the virtual world.
- Problems stemming from being online: This dimension expresses that the individual feels tense and nervous when not online and tends to become introverted due to problems caused by the internet.

Individual Health Perception Scale: The scale developed by Diamond et al., (2007), was validated and reliability tested for Turkish by Kadıoğlu & Yıldız (2012). The scale consists of 15 items and four sub-dimensions and is of the five-point Likert type. A maximum of 75 and a minimum of 15 points can be obtained from the scale. High scores indicate a high perception of health, low scores indicate a low perception of health. The Cronbach alpha coefficient of the scale was determined to be 0.777. The Cronbach alpha coefficients of the scale's sub-dimensions were found to be 0.702 for locus of control, 0.704 for certainty, 0.712 for importance of health, and 0.782 for self-awareness. The scale sub-dimensions are explained below:

- Locus of Control: This sub-dimension measures an individual's belief in their ability to control their health status. Individuals who believe that they have control of their health are more likely to manage their health better and generally achieve better health outcomes.
- Certainty: This sub-dimension measures an individual's uncertain beliefs about their health status. The individual does not have a definitive idea about health.
- Importance of Health: This dimension measures how much value an individual places on the effect of health on overall quality of life and well-being. Individuals who perceive the importance of health at a high level generally prioritize behaviors related to health.
- Self-Awareness: This sub-dimension measures the level of an individual's awareness of their own body and health status. Individuals with high self-awareness generally detect health-related changes faster and seek medical help when needed.

2.4. Data Collection and Analysis of the Study

After obtaining permission, the data of the study were collected online from students studying at Düzce University in the spring term of 2022-2023 between March 1, 2023, and July 6, 2023. The survey process took an average of 2 minutes.

In analyzing the data obtained in the study, normality distribution was checked first to decide which method to use. For this purpose, it was checked whether the mean scores of the scales and sub-dimensions displayed a normal distribution. The skewness and kurtosis coefficient values, which are indicators of the normality of the obtained data, were considered in making the decision. Accordingly, it was observed that the skewness and kurtosis values of both scales and sub-dimensions showed distribution within normal limits (+0.537/-0.697) (Tabachnick & Fidell, 2001, p, 157).

T-tests and Anova tests were conducted in the study to reveal differences according to the demographic variables of the students. Before conducting regression analysis, a correlation analysis was conducted to examine whether there was a multicollinearity problem among the sub-dimensions of the scale. Multiple regression analysis was conducted to reveal the effect of students' health perception levels on their levels of internet addiction. IBM SPSS 25 software package program was utilized in performing the statistical analyses.

2.5. Ethical Statements in the Research

After determining the purpose and scope of the study, necessary forms were created and an application was made to the Artvin Çoruh University Scientific Research and Publication Ethics Board to evaluate its ethical suitability. The board granted permission for ethical suitability with its decision number E-18457941-050.99-83654 dated February 28, 2023. A short paragraph was included at the beginning of the survey to indicate the purpose of the study to the participating university students and their informed consents were obtained.

3. RESULTS

Examining the demographic distribution of the university students who participated in the study; 52.8% (n:151) were female, 47.2% (n:135) were male, 87.1% (n:249) were enrolled in the first cycle, and 12.9% (n:37) were in the second cycle of education. Additionally, 24.8% (n:71) were associate degree students, 69.9% (n:200) were undergraduate students, and 5.3% (n:15) were Master’s degree students. On the other hand, in terms of income level, 1.1% (n:3) of the students stated that their income was very poor, 9.5% (n:27) stated it was poor, 59.4% (n:170) stated it was average, 28.3% (n:81) stated it was good, and 1.7% (n:5) stated it was

very good. Finally, in terms of the general location where students live, it was determined that 14.0% (n:40) lived in villages, 26.6% (n:76) in towns, 39.5% (n:113) in city centers, and 19.9% (n:57) in metropolises.

Table 1. Descriptive Statistics Related to Factors

Factors	n	Mean	Standard Deviation
Internet Addiction (All Scale)	286	2.27	.800
Prefer Being Online to Daily Life	286	2.45	.779
Increase Your Online Time	286	2.17	.915
Online Based Issues	286	2.18	.887
Individual Health Perception (All Scale)	286	3.04	.779
Importance of Health	286	2.56	.548
Control Center	286	2.98	.669
Self Awareness	286	3.87	.730
Precision	286	2.75	.873

Table 1 provides the fundamental values related to the scale and subfactors of the students participating in the study. According to this, it was seen that the students responded "Neutral" for the variable 'preference for being online over daily life' (2.45), a sub-variable of addiction, and "Agree" for the variable 'self-awareness' (3.87), a sub-dimension of health. For the entirety of the internet addiction scale (2.27), they responded "Disagree", and for the individual health perception scale (3.04), they responded "Neutral". In other words, it was observed that students' levels of internet addiction are low, while their perceptions of individual health are at a moderate level.

The t-test results conducted to reveal the differences between the binary groups in the study are given in Table 2.

Table 2. Differences by Gender and Type of Education

Factors	Variables	n	Mean	t	p
Internet Addiction	Woman	151	2.13	-3.270	**0.001**
	Man	135	2.43		
Individual Health Perception	Woman	151	3.07	1.549	0.122
	Man	135	3.00		
Internet Addiction	First Shift	249	2.23	-2.352	**0.019**
	Second Shift	37	2.56		
Individual Health Perception	First Shift	249	3.05	0.416	0.377
	Second Shift	37	2.99		

According to Table 2, there is a significant difference in the level of internet addiction according to students' gender ($p<0.05$). Accordingly, it was observed that the level of internet addiction of man students (2.43) is higher than that of woman students (2.13). It is seen that students' health perception levels do not change according to gender ($p>0.05$).

According to Table 2, there is a significant difference in the level of internet addiction according to the type of learning of students ($p<0.05$). Accordingly, it was observed that the level of internet addiction of students in the second shift of education (2.56) is higher than that of students in the first shift (2.23). It is seen that students' health perception levels do not change according to the type of learning ($p>0.05$).

The t-test results conducted to reveal differences between groups of three or more in the study are given in Table 3.

Table 3. Demographic Differences in Internet Addiction and Health Perception

Demographic Indicators	Variables	F	p	S.D	Reason for the difference
Income	Internet Addiction	8.278	**0.000**	2.101	Good (2.11) Middle (2.38)
	Individual Health Perception	0.639	0.635	0.514	No Difference
Type of Settlement	Internet Addiction	1.497	0.215	0.871	No Difference
	Individual Health Perception	2.232	0.085	1.240	No Difference
Education	Internet Addiction	1.381	0.253	0.351	No Difference
	Individual Health Perception	3.935	**0.021**	1.871	Associate Degree (2.94) Undergraduate Degree (3.07)

Note: The LSD post hoc test was applied to identify between which groups the significant difference arose.

According to Table 3, there is a significant difference in the level of internet addiction according to students' income level ($p<0.05$). Accordingly, it was observed that the level of internet addiction of students who state that their family income is at a medium level (2.38) is higher than that of students who say it is at a good level (2.11). It is seen that students' health perception levels do not change according to income level ($p>0.05$).

It is observed that the levels of internet addiction and health perception of students do not change according to the type of settlement ($p>0.05$).

According to Table 3, there is no significant difference in the level of internet addiction according to the students' level of education ($p>0.05$). However, there is a significant difference in the level of health perception according to the students' level of education ($p<0.05$). Accordingly, it was observed that the health perception levels of undergraduate students (3.07) are higher than those of associate degree students (2.11).

Table 4 presents the results of the correlation analysis conducted for the sub-dimensions of the scale.

Table 4. Correlation Analysis Findings

Variables	1	2	3	4	5	6	7
Prefer Being Online to Daily Life	1						
Increase Your Online Time	.764**	1					
Online Based Issues	.811**	.810**	1				
Importance of Health	.267**	.170**	.181**	1			
Control Center	.031	.027	.066	-.051	1		
Self Awareness	-.303**	-.222**	-.230**	-.175**	.025	1	
Precision	.372**	.349**	.419**	.249**	.122*	-.101	1
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

Upon examining Table 4, it can be seen that most of the relationships between the sub-dimensions are significant. When the correlation coefficients are evaluated, it can be said that there is no multicollinearity problem since the tolerance values calculated for all variables are below 0.10 and the VIF values are not above 10 (Pallant, 2005, p, 171).

Finally, in the study, a multiple regression analysis was conducted to determine the effect of the level of health perception and its sub-dimensions on the level of internet addiction and its sub-dimensions. The findings obtained are given in Table 5.

Table 5. Multiple Regression Analysis Results

Model	Dependent Variable	Independent Variable	β	t	P	F	Model (p)
1	Prefer Being Online to Daily Life	Importance of Health	.209	2.677	**.008**	20.912	**0.000**
		Control Center	.008	.136	.892		
		Self Awareness	-.263	-4.621	**.000**		
		Precision	.277	5.660	**.000**		
		R^2:0.229;Adjusted.R^2:0.218 F:20.912.					
2	Increase Your Online Time	Importance of Health	.096	1.033	.301	13.399	**.000**
		Control Center	.076	-.063	.945		
		Self Awareness	.070	-3.236	**.001**		
		Precision	.060	5.532	**.000**		
		R^2:0.160;Adjusted.R^2:0.148 F:13.399.					
3	Online Based Issues	Importance of Health	.088	.980	.328	19.218	**.000**
		Control Center	.035	.491	.624		
		Self Awareness	-.222	-3.397	**.001**		
		Precision	.390	6.956	**.000**		
		R^2:.215;Adjusted.R^2:.204 F:19.218.					
4	Internet Addiction	Individual Health Perception	0.464	3.658	**.000**	13.384	.000
		R^2:.045;Adjusted.R^2:.042 F:13.384					

In Model 1, the regression model created to determine whether the sub-dimensions of the level of health perception have an effect on the level of internet addiction sub-dimension, preference for being online over daily life, is seen to be statistically significant (F:20,912; p:0,000<0.05). The adjusted R2 value is seen to be 0.218. According to this result, it shows

that 21% of the variance in students' preference for being online over daily life is explained by health perception. Accordingly, it has been seen that among the sub-dimensions, the importance of health (β=0,209, p:0,008<0.05) has a positive effect, self-awareness (β=-,263 p:,000<0.005) has a negative effect, and certainty (β=,277 p:,000<0.005) has a positive effect on the level of addiction. It was observed that the level of control center did not have any effect on the preference for being online over daily life (p:0,892>0.05). As a result, H2, H8, and H11 hypotheses were accepted and H5 hypothesis was rejected.

In Model 2, the regression model created to determine whether the sub-dimensions of the level of health perception have an effect on the level of internet addiction sub-dimension, the level of increasing online time, is seen to be statistically significant (F:13,399; p:0,000<0.05). The adjusted R2 value is seen to be 0.148. According to this result, it shows that 15% of the variance in students' level of increasing online time is explained by health perception. Accordingly, it was seen that self-awareness (β=,070 p:,001<0.005) and certainty (β=,060 p:,000<0.005) positively affect the level of increasing online time. It was observed that the importance of health and the level of control center did not have any effect on the increase of online time (p:,301;,945>0.05). As a result, H9 and H12 hypotheses were accepted, and H3 and H6 hypotheses were rejected.

In Model 3, the regression model created to determine whether the sub-dimensions of the level of health perception have an effect on the level of internet addiction sub-dimension, the level of problems caused by being online, is seen to be statistically significant (F:9,218; p:0,000<0.05). The adjusted R2 value is seen to be 0.204. According to this result, it shows that 20% of the variance in students' level of problems caused by being online is explained by health perception. Accordingly, it was seen that self-awareness (β=-,222 p:,001<0.005) negatively and certainty (β=,390 p:,000<0.005) positively affect the level of problems caused by being online. It was observed that the importance of health and the level of control center did not have any effect on problems caused by being online (p:,328;,624>0.05). As a result, H10 and H13 hypotheses were accepted, and H4 and H7 hypotheses were rejected.

In Model 4, the regression model created to determine whether the level of health perception has an effect on the level of internet addiction is seen to be statistically significant (F:13,384; p:0,000<0.05). The adjusted R2 value is 0.042. According to this result, it shows that 4% of the variance in students' level of internet addiction is explained by health perception. As a result, the H1 hypothesis has been accepted.

4. DISCUSSION

In this study aimed at determining the impact of university students' individual health perceptions on their internet addiction levels and identifying differences according to various demographic variables, significant findings have been obtained. These findings will be discussed within the context of existing literature in this section.

The study reveals that the students' levels of internet addiction are low while their individual health perceptions are at a medium level. This finding is consistent with the literature (Chemnad et al., 2023) and suggests that internet addiction is a relatively rare problem among university students.

It was identified that male students' levels of internet addiction are higher than those of female students, that Second Shift students' levels of internet addiction are higher than first-education students, and that students who describe their families' income level as "medium" have higher levels of internet addiction than those describing their families' income level as "good". No significant difference was observed regarding the level of internet addiction according to the type of residence and educational level of the students. In a study conducted by Tsitsika et al., (2011), it was found that male students had higher levels of internet addiction compared to females. Moreover, Yen et al., (2007) found that individuals with higher levels of education had lower levels of internet addiction. While these findings may not fully align with the finding that Second Shift students have higher levels of internet addiction, it does suggest that educational status may have an effect on internet addiction.

It was found that the students' health perception levels did not differ according to gender, type of education, income level, and type of residence. However, undergraduate students were found to have higher health perception levels than associate degree students. Vlassoff (2007), investigated gender difference in health perception, concluding that women diagnosed with the same condition had twice as poor health perception as men.

It is shown that 4% of the variance in university students' levels of internet addiction is explained by health perception. Kim & Davis (2009) found that internet addiction has a negative impact on individuals' overall health status. The finding that only 4% of the level of internet addiction can be explained by health perception indicates the presence of a wide range of factors affecting internet addiction. This finding is consistent with the literature; for example, Kuss et al., (2018) state that internet addiction is a multifactorial phenomenon and various factors such as genetics, personality traits, and environmental factors can affect this

condition. The study also suggests that individual health perception is a relatively weak predictor of internet addiction. This should be considered in light of the fact that this study only looks at a single factor that may contribute to internet addiction. Other factors such as personality traits, social support, and coping mechanisms could also play a role.

5. CONCLUSION AND SUGGESTIONS

This study has revealed a relationship between university students' individual health perceptions and levels of internet addiction. However, the impact of health perception on internet addiction is relatively weak. This indicates that internet addiction is a multifactorial phenomenon and there may be other factors beyond health perception that could affect this condition.

Additionally, the study has demonstrated that demographic factors - gender, educational status, and income level - have a significant influence on levels of internet addiction. However, these factors have not had a significant impact on levels of health perception.

It is recommended that future research delve more deeply into the relationship between health perception and internet addiction. In particular, other potential factors that might contribute to internet addiction, such as personality traits, social support, and coping mechanisms, should be investigated.

Furthermore, steps should be taken by policy makers and university administrators to increase awareness about internet addiction among university students and to develop preventive and intervention strategies on this matter.

Lastly, there is a need for more research to better understand the influence of demographic factors like educational status and income level on levels of internet addiction. This could be significant for the development of effective preventive and intervention strategies.

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