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ARAŞTIRMA/RESEARCH

ASSESSMENT OF NURSING AND TECHNICAL SCIENCES STUDENTS' PERCEPTIONS OF THE HEALTH LOCUS OF CONTROL

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ABSTRACT

Aim: This research aimed to assess the perception of the health locus of control in nursing and technical sciences students.

Methods: The study conducted at one state university in 2014 and consisted of 413 (192 nursing, 222 technical sciences) students. Data were obtained with the Multidimensional Health Locus of Control Scale, and a survey about the socio-demographic and some of the health behaviors of students and evaluated with percentage, frequency, median, standard deviation, ANOVA, t and Tukey tests.

Results: The school type of students were observed to affect their health locus of control perceptions. Students who exercised regularly had more internal control, whereas students who do not drink alcohol were more deterministic in terms of their health.

Conclusion: Students should be encouraged to improve a sense of responsibility in health and disease, and enhance internal health locus of control.

Keywords: Health Locus of Control; University Student; Health

ÖZ

Hemşirelik ve Teknik Bilimler Öğrencilerinin Sağlık Kontrol Odağı Algılarının Değerlendirilmesi

Amaç: Bu araştırma hemşirelik ve teknik bilimler öğrencilerinin sağlık kontrol odağı algılarının değerlendirilmesi amacıyla planlandı.

Yöntem: Bu araştırmanın örnekleme, 2014 yılında bir devlet üniversitesinde eğitim gören 413 öğrenci (192 hemşirelik, 222 teknik bilimler öğrencisi). Veriler Çok Boyutlu Sağlık Kontrol Odağı Ölçeği ve literatür doğrultusunda hazırlanan, katılımcıların sosyo-demografik özellikleri ile, bazı sağlıklı yaşam biçimi davranışlarını sorgulayan anket formu ile toplandı. Elde edilen veriler yüzde, sıklık, ortalama, standart sapma, ANOVA, t testi ve Tukey testi kullanılarak değerlendirildi.

Bulgular: Eğitim görülen okul türü, kişilerin sağlık kontrol odağı algıları üzerinde etkilidir. Düzenli olarak egzersiz yapan öğrenciler sağlıkları ile ilgili daha güçlü içsel kontrole sahipken, alkol kullanmayan öğrencilerin ise sağlıklarıyla ilişkili daha kadenci bir tutum sergiledikleri belirlendi.

Sonuç: Öğrenciler kendi sağlıklarıyla ilgili olarak sorumluluk alma konusunda cesaretlendirilmeli, öğrencilerin içsel sağlık kontrol odağı algıları geliştirilmelidir

Anahtar Kelimeler: Sağlık Kontrol Odağı; Üniversite Öğrencisi; Sağlık

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INTRODUCTION

Health locus of control (HLC) refers to the extent to which individuals believe that they have control over the health events that affect them (Tabak and Akköse 2006). Individuals' experience of control is related to their experience of different psychological and physical symptoms (Roddenberry and Kimberly 2010; Acharya and Sangam 2010; Moshki and Ashtarian 2010)

The HLC includes three facets: internal, powerful others external, and chance external. Internal beliefs characterize one's health condition as being the direct result of one's own actions. External beliefs are premised on the notion that one's health outcome is under the control of powerful others (i.e., medical professionals), or is determined by fate, luck, or chance. People with internal beliefs can plan their future behavior and compete with the delay of their gratification better than people with external beliefs. People with external beliefs have depressive features, low expectations and self-esteem, and believe that it is useless to take responsibility for their lives (Tabak and Akköse 2006). HLC has been associated with health outcomes and behaviors. Understanding the mechanisms of these relationships are key to designing and implementing effective health behavior intervention programs (Pourhoseinzadeh, Gheibizadeh, Moradikalboland and Cheraghian 2017; Marr and Wilcox 2015).

Attention to health issues is relatively low during the youth period, as this is typically defined as the healthiest period in one's lifespan. Bold and sociable behavior derived from peak physical abilities in youth can cause risky behavior to health. Thus, it is more difficult for young people to adopt healthy behaviors (Aksoy and Uçar 2014; Kurt and Savaşer 2013). University life, which encompasses the youth span, may be perceived as a stressful period due to separation from family, introduction to new education life, and responsibility for their own decision-making about what to eat, where to eat, and as relates to drinking, smoking, joining social groups, etc. Difficulties in adapting to a new environment may initiate negative health behaviors and habits during this time, which can affect future lives and future families, as well as society as a whole (Aksoy and Uçar 2014; Cuenca-García, Huybrechts, Ruiz, Ortega, Ottevaere, Gonzalez-Gross et al. 2013).

Nevertheless, there is limited research relating to health responsibility, and health

behaviors such as exercise, smoking and alcohol consumption, also associations between HLC dimensions and health behaviours during youthful ages, when risky behavior is acquired (Helmer, Kramer and Mikolajczyk 2012; Kelly, Melnyk, Jacobson and O'Haver 2011; He, Kramer, Houser, Chomitz, Hacker et al. 2004). If practitioners understand HLC and its association with health behaviours, they can design and implement effective interventions for better health outcomes within university students.

Therefore, this descriptive, questionnaire study aimed to assess the perceptions of the HLC in nursing and technical sciences students according to their school type, and some of the health behaviours including smoking, alcohol consumption, and physical exercise.

The following four main research questions were answered:

Q1: Do nursing and technical sciences students with and without formal health education differ in their perceptions of the HLC according to their school type?

Q2: Do nursing and technical sciences students with and without formal health education differ in their perceptions of the HLC according to their smoking status?

Q3: Do nursing and technical sciences students differ in their perceptions of the HLC according to their alcohol consumption?

Q4: Do nursing and technical sciences students differ in their perceptions of the HLC according to their physical exercise status?

METHOD

Population and Data Collection: : The population of this research included nursing school and technical sciences students who were enrolled in the 2013-2014 academic year. There were 291 students in the nursing school and, 3000 technical sciences students in the 2013-2014 academic year. The sample size calculated at least 344 students for statistical data interpretation with a 95% confidence interval and $\pm 5\%$ sampling error. Sampling of the research consisted of randomly selected 413 students including 191 nursing and 222 technical sciences students.

Data Collection Tools: Data were obtained using a 6-question survey about socio-demographic characteristics and health behaviors of students, which constituted the literature and an 18-question Multidimensional Health Locus of Control Scale (MHLOC). The 6-question survey about socio-demographic characteristics and

health behavior of students included gender, age, school type of students, and their status of smoking, alcohol consumption, and exercise.

Multidimensional Health Locus of Control Scale (MHLOC): The MHLOC was developed by Wallston, Wallston, DeVellis (1978). It was adapted to the Turkish language by Üstündağ Budak and Mocan Aydın (2005). It is 6-point Likert scale with three subscales: Internal of HLC, powerful others HLC, and chance HLC. Examples items included, for internal HLOC, 'If I get sick, I have the power to get well again,' for powerful others, 'Other people play a major role in whether I stay healthy or get ill' for chance, 'It seems that my health is greatly influenced by accidental events'. Each of these subscales contains six items from 'Strongly Agree' to 'Strongly Disagree'. Sum scores calculated in order to present each sub-scale on a range from 6 to 36 (min:6, max:36). There is no cut-off point for scale. Higher scores represent more tendencies toward use of a certain locus of control. There are no reversely scored items on the scale. The Cronbach alpha coefficient of the scale was 0.63 (Üstündağ Budak and Mocan Aydın 2005). Cronbach alpha for the current study was 0.72.

Data Analysis: Data were analysed using the SPSS (Statistical Package for Social Sciences) software version 18 (IBM Corp, Armonk, New York). Percentage, frequency, median, standard deviation, ANOVA, t and Tukey tests were used to assess data. Results were evaluated with a

$p < 0.05$ significance level.

Ethical Issues: Written permission from schools (No: 49114951-100-1630, date: 7.03.2014, No:45334981-044-99, date: 10.03.2014) and informed consent from students were obtained for the research. The principles of Helsinki Declaration were followed in this study.

Limitations of the study: Firstly, this study relied on self report measures. However, all questionnaires were anonymously completed in order to reduce potential response bias. Secondly, this study had a small sample size which limits the generalization of results and disproportionate allocation of participants that the population of technical sciences students is 10 times more than nursing school students (10.3:1) but the sampling proportion is 1.16:1 is a serious limitation. Thus, it is good to re-verify the current results with future studies including larger sample groups with proportioned allocation.

RESULTS AND DISCUSSION

Fifty five point two percent ($n=228$) of students were women, 53.8% ($n=222$) were students of the Vocational School of Technical Sciences, 46.2% ($n=191$) were nursing students, and the mean age of the sample group was 20.6 ± 1.62 . The prevalence of smokers was 32% ($n=132$), alcohol users was 44.3% ($n=183$), those who exercised regularly was 17.2% ($n=71$), those who exercised occasionally was 59.1% ($n=244$) of students in sample group (Table 1).

Table 1. Demographic features and health behaviours of students in sample group ($n=413$)

Characteristics	Number	%
Gender	Women	228
	Men	185
School	Vocational School of Technical Sciences	222
	Nursing School	191
Smoking status	Never	281
	1-2 pack in a day	72
	1-2 pack in a week	45
	Less than 1 pack in a month	12
	1-2 pack in a month	3
		0.7
Drinking Status	Never	230
	One or several times in a week	70
	One or several times in a year	101
	Every day	12
Excercise status	Regularly	71
	Sometimes	244
	Never	98

Internal HLC scores were significantly higher for technical sciences students than for nursing students ($p<0.001$), whereas chance HLC scores were significantly higher for nursing students than for technical sciences students ($p=0.038$) (Table 2). Thus, we may extrapolate that nursing students who obtain health education do not necessarily internalize information gained at school to the extent that they integrate this information into their own lives. This result may

be due to the first-grade nursing students in the sample group. Future studies should investigate the reasons for this finding. Such as, one study showed that emergency unit staff with internal HLC had higher self-esteem than other staff (Pourhoseinzadeh, Gheibizadeh, Moradikalboland and Cheraghian 2017). Evaluating the association between self-esteem levels and HLC scores of university students in future researches would be interesting.

Table 2. Health locus of control by school type

	Technical sciences (n:222)		Nursing (n:191)				
	$\bar{x}$	S	$\bar{x}$	S	Sd	T	p
Internal	28.40	4.83	26.78	4.07	411	3.64	0.000
Powerful others external	22.64	5.47	21.81	4.54	411	1.66	0.098
Chance external	16.04	5.19	17.10	5.19	411	2.09	0.038

*Independent Samples t test

There was significant difference for chance external HCL scores by alcohol consumption. Chance external HLC scores of non-drinker students were significantly higher than students who drink one or several times in a week ($p=0.018$) (Table 3). Contrary to our findings, frequent alcohol consumption was associated with higher chance external HLC scores in a study by Helmer, Kramer and Mikolajczyk (2012). Furthermore, it was

indicated in the literature that individuals who exhibit adverse health behaviors have more external beliefs (Kuwahara, Nishino, Ohkubo, Tsuji, Hisamichi and Hosokawa 2004). Our findings led us to believe that the majority of the sampling group did not drink due to cultural and religious reasons and that they had a deterministic approach in regard to their health for the same reasons.

Table 3. Health locus of control by alcohol consumption of students (n=413)

		Sum sq	df	Mean sq	F	p
Internal	Between	60.789	3	20.263	0.974	0.405
	Within	8507.303	409	20.800		
	Total	8568.092	412			
Powerful others external	Between	7.440	3	2.480	0.096	0.962
	Within	10588.372	409	25.888		
	Total	10595.811	412			
Chance external	Between	271.515	3	90.505	3.391	0.018
	Within	10915.356	409	26.688		
	Total	11186.872	412			

There was no significant difference for the HLC by the smoking status of students ($p>0.05$) (Table 4). Contrary to this finding, in a study among university students in Germany, higher ratings in the chance external HLC were associated with a higher likelihood of being a current smoker (Helmer, Kramer and

Mikolajczyk 2012). Furthermore, internal HLC was significantly different according to the smoking status in a study among nursing students (Cha 2013). Another research suggested that smokers had higher external HLC scores than non-smokers (Kuwahara, Nishino, Ohkubo, Tsuji, Hisamichi and Hosokawa 2004).

Table 4. Health locus of control by smoking of students (n=413)

		Sum sq	df	Mean sq	F	p
Internal	Between	190.579	4	47.645	2.320	0.056
	Within	8377.513	408	20.533		
	Total	8568.092	412			
Powerful others external	Between	148.622	4	37.156	1.451	0.216
	Within	10447.189	408	25.606		
	Total	10595.811	412			
Chance external	Between	98.453	4	24.613	0.906	0.461
	Within	11088.418	408	27.177		
	Total	11186.872	412			

*One way ANOVA

We performed a one way anova to determine the health locus of control by the exercise status of students. There was a statistically significant difference in points for internal HLC. By using the Tukey test, we determined that the points of internal HLC for students who exercised regularly were statistically significantly higher than the points of internal HLC for students who did not exercise ($p=0.000<0.05$) (Table 5). Consistent with our

finding, points of the internal HLC for students who exercised regularly were usually higher than points of internal HLC for students who did not exercise in the literature (Helmer, Kramer and Mikolajczyk 2012; Young 2010; Tabak and Akköse 2006; Kuwahara, Nishino, Ohkubo, Tsuji, Hisamichi and Hosokawa 2004; Steptoe and Wardle 2001). This finding indicated that students who exercised regularly exhibited enhanced self-control in terms of their health.

Table 5. Health locus of control by physical exercise of students (n=413)

		Sum sq	df	Mean sq	F	p
Internal	Between	395.657	2	197.829	9.925	0.000
	Within	8172.435	410	19.933		
	Total	8568.092	412			
Powerful others external	Between	115.433	2	57.717	2.258	0.106
	Within	10480.378	410	25.562		
	Total	10595.811	412			
Chance external	Between	88.089	2	44.044	1.627	0.198
	Within	11098.783	410	27.070		
	Total	11186.872	412			

*One way ANOVA

CONCLUSION

The school type of students were observed to affect their HLC perceptions. Unless the nursing students are more exposed to health education than technical science students, they were more deterministic in terms of their health than technical sciences students. Students who exercised regularly had more internal beliefs, whereas students who do not drink alcohol were

more deterministic in terms of their health. Students should be encouraged to improve a sense of responsibility in health and disease, and enhance internal HLC. The implementation of new actions is essential to achieve this goal. Thus, projects to increase the health responsibility should be added to nursing education schedules. Moreover, personal health responsibility should

become a part of nursing students' education since nursing students as future health professionals

should practice health responsibility in their own lives.

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