

The Correlations Between Nursing and Medical Students' Values and Social Innovation Tendencies

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ABSTRACT

Aim: This study aimed to determine the correlation between values and social innovation tendencies of nursing and medical students and examine the effect of values on social innovation tendencies.

Method: This descriptive and correlational study consisted of 524 third-year students at nursing and medical faculties in a public university in Istanbul (response rate of 57.1%). The data of the study were collected using the information form, Portrait Values Questionnaire, and Social Innovation Scale. The data were collected between December 2015 and May 2016. The data were analyzed using descriptive and correlational analyses, and the factors affecting the score of social innovation were analyzed using linear regression analysis (backward).

Results: A positive significant correlation was determined between the total scores of Portrait Values Questionnaire and Social Innovation Scale ($r=0.453$). The subscale mean scores of Portrait Values Questionnaire had an effect of 26.6% in total score of Social Innovation Scale. In the regression model where significance was determined ($F=37.566$; $p<0.01$), the highest effect was observed in the subscale of universalism.

Conclusion: The value of universalism affected the social innovation for both groups at the most, which is an expected result by the nature of these occupations. The value of openness to innovation including self-direction and stimulation in medical students had a significant effect on the total score of social innovation, which is compatible with innovative behavior literature. These results are expected to guide educators and managers in developing socially innovative behaviors.

Keywords: Innovation, medical students, nursing students, social innovation, values

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INTRODUCTION

Innovation covers all kinds of beneficial economic and social incidents. Even though technology and product are still in the foreground in innovation, it can also be applied to the education, administration, and social level (Sönmez, 2014). In countries that target innovation as a national socioeconomic policy, it is required to establish the culture of innovation in society for individuals to turn their innovation tendencies into behaviors (Seçkin-Halaç, Eren, & Bulut, 2014).

Individuals play a key role in the process of innovation as the creators and bearers of knowledge (Goldenberg, 2004). Social innovators are the creators of change; they socially develop new ideas and try to solve social problems. They are expected to have enterprising features and act like the agent of change; they constantly conduct innovation activities to create a sustainable social value (Dees, 2007). Being one of the important factors for innovation, human capital is knowledge, abilities, and talents of individuals that could be developed with education. There is a great need for raising social entrepreneurs who generate innovative solutions to social problems (Eren, 2010). Environment and education determine the behavior patterns of social entrepreneurs who bear and conduct innovation (Seçkin-Halaç et al., 2014). In the literature, it is seen that individual factors and mostly organizational factors that affect innovative behaviors of individuals are examined (Sönmez, 2014). In their systematic review on innovation in the field of health, Greenhalgh, Robert, Macfarlane, Bate, and Kyriakidou (2004) stated that personality characteristics, intellectual talents, tolerance to uncertainty, motivations, values, and learning styles affect innovative behaviors of individuals. It is thought that determining the value types of individuals is important es-

pecially in terms of developing their socially innovative behaviors.

As the International Council of Nurses-ICN (2017) stated, nurses, and physicians who serve to preserve and improve the health of individuals, families, and societies are expected to take part in the social transformations that improve health. However, it is stated that their personal principles will guide their occupational practices and their relationships with individuals, families, and society (Kaya, Küçük-Yüceyurt, Şenyuva & Ulupınar, 2018). No study of nurse and medical student samples has examined the relationship between their values and social innovation (SI) tendencies. Accordingly, the theoretical framework of this study contains the relationship between values and SI tendencies.

Values are evaluated as phenomena that strain incidents in the environment and direct behaviors. Accordingly, it is stated that knowing the values of individuals will pave the way to estimate their behaviors in the face of incidents in their life (Çalışkur, Demirhan, & Bozkurt, 2012). Values guide in selecting behaviors or evaluating incidents and become distinct depending on their relative importance in individuals (Lan, Gowing, McMahon, Rieger, & King, 2008).

In his Theory of Values, Schwartz (2012) states that values are cognitive reflections of three universal needs that exist innately in every individual according to their content and structure. He defines these needs as basic needs of individuals (like stimulation) as biological organism, needs (like benevolence) required by successful interpersonal interaction, and needs (like adaptation) required by groups and communities to survive (Dirilen-Gumus & Buyuksahin-Sunal, 2012; Schwartz, 2012). Considering the three universal needs, Schwartz defines ten value types that contain values in similar or different motivational infrastructure and show an interrelated continuity

within a dynamic structure on a circular array (Schwartz, 2012) (Table 1). Studies conducted in different cultures support the circular array considerably (Demirutku & Sümer, 2010).

In the study comparing the value profiles of university students studying in nursing and business, the most important values of nursing students were "personal development" and "benevolence." Nursing students had higher "benevolence" and lower "life style, advancement, autonomy, authority, creativity, economic, and risk values" compared to business students (Thorpe & Loo, 2003). In a longitudinal study examining the value preferences of first-year nursing students, students preferred social values in the beginning and at the end of the academic year. It was indicated that the most distinctive features of an individual adopting social values were philanthropy, benevolence, and unselfishness (Kaya, Işık, Şenyuva, & Kaya, 2012a). In another study conducted with nursing students (Kaya, Kaya, Senyuva, & Isık, 2012b), while moral, social, financial/economic values were on the first three ranks; religious and scientific/theoretical values had the lowest scores.

In another study conducted with physiotherapists, physiotherapists showed the high-

est value tendency to the value of "benevolence" and the lowest tendency to the value of "power" (Nosse & Sagiv, 2005). In the study conducted by Çalışkur, Demirhan, and Bozkurt (2012), with different occupational groups using Rokeach Value Inventory, the values of honesty, family security, and inner peace were common values in all groups. The values on the first three ranks were honesty, family security, and inner peace for engineers; honesty, inner peace, and independence for psychologists; and inner peace, happiness, and honesty for physicians.

Max Weber addressed SI for the first time as social inventions in late nineteenth century. In the 1930s, Joseph Schumpeter emphasized the requirement of SI along with technology and innovation to provide an economic efficiency (Seçkin-Halaç et al., 2014). Considering the definition of innovation, "social innovation" may be defined as forming or applying new or reformed products, services, and processes to solve personal and social problems (Seçkin-Halaç et al., 2014; Sönmez, 2014). In other words, SI is the generation of new ideas and solutions to meet social needs and increase the life standards of individuals (Mulgan, Tucker, Ali, & Sanders, 2007). Phills, Deiglmeier, and

Table 1. Values and definitions according to Schwartz's Theory of Values (Schwartz, 2012)

	Value	Definition
Self-enhancement	Power	Social status, dominance over people and resources
	achievement	Personal achievement tendency established by social standards
Openness to change	Hedonism	Quest for physical pleasure and sensual satisfaction
	Stimulation	Quest for excitement and innovation
	Self-direction	Tendency of independent thinking and behaving
Self-transcendence	Universalism	Sensibility and tolerance for everyone; protecting the welfare of people and the nature
	Benevolence	Protecting and strengthening the well-being of other people
Conservatism	Tradition	Respect for and commitment to cultural and religious applications and senses
	Conformity	Limitation of impulses and behaviors that may harm other people or contrast with social expectations
	Security	Quest for security and stability for self, society, and relations

Miller (2008) redefined SI as finding a more effective, efficient, and sustainable solution to a social problem or creating values primarily for society instead of private individuals based on present solutions to bring a higher sensitivity and understanding in this concept.

SI includes the development of new social products and services to provide a sustainable benefit to problems like working conditions, education, social development, health, environmental supervision, and climate change (Seçkin-Halaç et al., 2014). Mulgan et al. (2006) gave the following examples to SI, "telephone help lines, neighborhood nurseries and neighborhood wardens, Wikipedia and the Open University, complementary medicine, holistic health and hospices."

This study was conducted to determine the correlation between values and SI tendencies of nursing and medical students, and examine the effect of values on SI tendencies.

Research Questions

1. What are the values of nursing and medical students?
2. What are the SI tendencies of nursing and medical students?
3. Is there a correlation between the values and SI tendencies of nursing and medical students?
4. Do the values affect SI tendencies of nursing and medical students?

METHOD

Study Design

The study was conducted in a descriptive and correlational design.

Sample

This study consisted of third-year students (totally 917 students; 355 nursing, 562 medical students) at a medical and nursing faculty in a

public university in Istanbul. In Turkey, medical students study for six years and nursing students study for four years. It was aimed to include students from similar ages and grades. As fourth-year nursing students were doing internship, the population consisted of third-year students instead of fourth-year students. It was aimed to reach the entire population without using sampling method. A total of 524 valid data collection tools were obtained with a total response rate of 57.1%.

Data Collection

The data were collected between December 2015 and May 2016. The data of the study were collected using the information form, Portrait Values Questionnaire (PVQ), and Social Innovation Scale. To use the scales, permissions were obtained from the researchers who developed them and adapted them into Turkish.

The Information Form: The form consisted of seven questions including sociodemographic characteristics of the students such as age, gender, number of siblings, the residence of the family, and income level of the family.

Portrait Values Questionnaire (PVQ): The PVQ was developed by Schwartz, Melech, Lehmann, Burgess, and Harris (2001) as 40 items to exceed the limitations of the Schwartz Value Survey and measure the value tendencies more efficiently. It was adapted into Turkish by Demirutku and Sümer (2004). In the scale, participants are asked to indicate how much they like the person being described. The scale consists of 40 items that are responded in the 6-point Likert scale (1-not like me at all, 6-very much like me) and 10 separate subscales respectively as power, achievement, conformity, hedonism, tradition, self-direction, security, universalism, stimulation, and benevolence. In their study, Schwartz et al. (2001) reported

reliability coefficients as follows: power, 0.84; security, 0.88; conformity, 0.86; tradition, 0.81; benevolence, 0.82; universalism, 0.83; self-direction, 0.66; stimulation, 0.74; hedonism, 0.84, and achievement, 0.83. Demirutku and Sümer (2004) calculated both Cronbach's alpha and test-retest reliability coefficients for reliability. Cronbach's alpha and test-retest values were follows: power, 0.77–0.81; security, 0.71–0.81; conformity, 0.77–0.75; tradition, 0.63–0.82; benevolence, 0.69–0.66; universalism, 0.79–0.72; self-direction, 0.65–0.65; stimulation, 0.61–0.70; hedonism, 0.81–0.77; and success, 0.84–0.81. In this study, the cronbach's alpha values were follows: self-direction, 0.65; stimulation, 0.64; hedonism, 0.71; power, 0.59; achievement, 0.74; universalism, 0.79; benevolence, 0.54; security, 0.62; conformity, 0.60; and tradition, 0.51.

Social Innovation Scale: Developed by Seçkin-Halaç et al. (2014) in Turkish to measure measuring SI tendency at individual level, the SI scale consists of a total of eight items that are responded as self-report in the 5-point Likert type (1-strongly disagree, 5-strongly agree). Cronbach's alpha value of the unidimensional scale was reported as 0.85. In this study, the cronbach's alpha value was 0.84 for the overall scale.

Data Analysis

The Number Cruncher Statistical System (NCSS) 2007 (Kaysville, Utah, USA) program was used for statistical analyses. The data of the study were evaluated using descriptive statistical methods (mean, standard deviation, median, frequency, ratio, minimum, maximum). While Student's t test was used in two-group comparison of variables that showed a normal distribution, Mann–Whitney U test was used in two-group comparison of variables that did not show a normal distribution. One-way ANOVA test was used in three-group (and more) comparison of

variables that showed a normal distribution, and Tukey HSD test was used to determine the group that caused the difference. Kruskal–Wallis test was used in three-group (and more) comparison of variables that did not show a normal distribution, and Bonferroni corrected Mann–Whitney U test was used to determine the two groups that caused the difference. Spearman correlation analysis was used to evaluate the correlations between variables that did not show normal distribution. Factors affecting the total score of Social Innovation Scale were analyzed using linear regression analysis (backward).

Ethical Considerations

Ethics committee approval (Faculty Clinical Research Ethics Committee, Date: 12.02.2016, Decision No: 03) and permission of faculty management were obtained to conduct the study. Written informed consent was obtained from students who participated in this study, and they were ensured to participate in the study voluntarily.

RESULTS

Sociodemographic Characteristics of Participants

Among the students who participated in the study, 44.1% were nursing students and 55.9% were medical students. Of the students, 71.6% (n=375) were female, 28.4% (n=149) were male. The average age was 20.52 ± 1.04 years (min 18, max 26). Only 17.2% of the students had no siblings; 69.1% of their families were living in the city; and 29.2% had a good income level, 54.4% had a middle income level, and 16.4% had a minimum and below income level.

Descriptive Results of the PVQ and SI

Total mean score obtained by the students from the SI was 3.99 ± 0.59 . Among the subscale mean scores of PVQ, the lowest mean

score was value of power (3.79±1.00), and the highest mean score was value of universalism (5.12±0.70) (Table 2).

There was no statistically significant difference between the total scores obtained by nursing and medical students from the SI (t=0.367, p=0.714). No significant relationships were found between the students' sociodemographic characteristics and their total SI scores (p>0.05). When comparing the mean scores of PVQ between the groups, the scores obtained by nursing students from the subscales of hedonism (p=0.002), universalism (p=0.046), and security (p=0.012) were higher than the scores of medical students in a statistically significant way (p<0.05).

There was a positive statistically significant correlation between the total scores obtained by the participating students from the SI and the total scores of PVQ at the rate of 45.3% (r=0.453; p=0.001; p<0.01) (Table 3). Positive but weak correlation between the total scores obtained by the students from the SI and their scores in the subscales of "hedonism, power, achievement and tradition" in the PVQ were statistically significant. There was also a positive statistically significant correlation between

another subscales, mainly in the subscale of universalism at the rate of 44% (Table 3).

Regression Analysis of the Effect of the Subscale Scores of PVQ on Total Score of SI

The effect of the subscale scores of PVQ on total score of SI was tested by the help of linear regression analysis (backward stepwise); and as a result of the analysis, the regression model was significant (F=37.566; p<0.01) and R²=0.266. According to the model, the effect of the subscale scores of PVQ on the SI was 26.6%.

As a result of the analysis, the subscales of self-direction (p=0.071), stimulation (p=0.031), power (p=0.031), universalism (p=0.001), and benevolence (p=0.073) of the PVQ were involved in the model. In the final step, the model also involved the subscales of self-direction and benevolence, which were not significant but were close to the significance level. The greatest effect in the model was shown by the value of universalism. The formula obtained as a result of the model was as follows (Table 4):

$$SI = 1.456 + 0.076(\text{Self-Direction}) + 0.061(\text{Stimulation}) + 0.052(\text{Power}) + 0.268(\text{Universalism}) + 0.067(\text{Benevolence})$$

Table 2. Mean scores and standard deviations of the SI and PVQ

			Item No	Mean	SD
Social Innovation Scale			8	3.99	0.59
Portrait Values Questionnaire	Openness to change	Self-Direction	4	4.87	0.76
		Stimulation	3	4.44	0.96
		Hedonism	3	4.55	0.99
	Self-enhancement	Power	3	3.79	1.00
		Achievement	4	4.26	0.95
	Self-transcendence	Universalism	6	5.12	0.70
		Benevolence	3	4.84	0.75
	Conservatism	Security	6	4.94	0.66
		Conformity	4	4.68	0.78
		Tradition	4	4.27	0.79

SD: standard deviation; PVQ: Portrait Values Questionnaire; SI: social innovation

Regression Analysis of the Effect of the Nursing and Medical Students' Subscale Scores on the PVQ on Their Total SI Scores

The effect of the subscale scores obtained by nursing and medical students from the PVQ on total score of SI was tested with the help of linear regression analysis (backward stepwise). As a result of the analysis, the regression model was significant in nursing students ($F=25.161$; $p<0.01$) and $R^2=0.250$. According to the model, the effect of the subscale scores of PVQ on SI was 25%.

Table 3. Correlations between the total and subscale scores of PVQ and the total scores of SI

PVQ	Total score of SI	
	r	p
Self-direction	0.395	0.001**
Stimulation	0.327	0.001**
Hedonism	0.209	0.001**
Power	0.160	0.001**
Achievement	0.206	0.001**
Universalism	0.440	0.001**
Benevolence	0.350	0.001**
Security	0.260	0.001**
Conformity	0.222	0.001**
Tradition	0.160	0.001**
Total score	0.453	0.001**

r: Spearman's Correlation Coefficient; ** $p<0.001$. PVQ: Portrait Values Questionnaire; SI: social innovation

As a result of the analysis, power ($p=0.014$); universalism ($p=0.001$), and benevolence ($p=0.007$) subscales of the PVQ were involved in the model. The greatest effect in the model was depicted by the value of universalism. The formula obtained as a result of the model is as follows (Table 5):

$$SI_{(\text{Nursing students})} = 1.578 + 0.089(\text{Power}) + 0.244(\text{Universalism}) + 0.169(\text{Benevolence})$$

As a result of the regression analysis applied in medical students, the model was significant ($F=31.999$; $p<0.01$) and $R^2=0.308$. According to the model, the effect of the subscale scores of PVQ on SI was 30.8%. Self-direction ($p=0.011$), stimulation ($p=0.001$), hedonism ($p=0.001$), and universalism ($p=0.040$) subscales of the PVQ were involved in the model. The greatest effect in the model was depicted by the value of universalism. The formula obtained as a result of the model is as follows (Table 5):

$$SI_{(\text{Medical students})} = 1.574 + 0.120(\text{Self-Direction}) + 0.131(\text{Stimulation}) - 0.064(\text{Hedonism}) + 0.301(\text{Universalism})$$

DISCUSSION

This study was conducted in nursing and medical students to determine the values that would direct individuals, the most important component in the process of SI, and establishing its relationship with SI tendency. The students obtained high total mean score from the

Table 4. Regression analysis of the effect of the subscale scores of PVQ on total score of SI

	Unstandardized coefficients		95% Confidence interval for β	
	β	p	Lower bound	Upper bound
Self-direction	0.076	0.071	-0.006	0.158
Stimulation	0.061	0.031	0.006	0.117
Power	0.052	0.031	0.005	0.099
Universalism	0.268	0.001	0.180	0.356
Benevolence	0.067	0.073	-0.006	0.140
(Constant)	1.456	0.001	1.083	1.829

*Dependent variable: Total score of SI; Independent variable: The subscales of PVQ; PVQ: Portrait Values Questionnaire; SI: social innovation

Table 5. Regression analysis of the effect of the subscale scores obtained by nursing and medical students from the PVQ on total scores of SI

		Unstandardized coefficients		95% Confidence interval for β	
		β	p	Lower bound	Upper bound
Nursing students	Power	0.089	0.014	0.018	0.160
	Universalism	0.244	0.001	0.110	0.379
	Benevolence	0.169	0.007	0.047	0.291
	(Constant)	1.578	0.001	1.021	2.135
Medical students	Self-direction	0.120	0.011	0.028	0.211
	Stimulation	0.131	0.001	0.065	0.196
	Hedonism	-0.064	0.001	-0.126	-0.003
	Universalism	0.301	0.040	0.206	0.396
	(Constant)	1.574	0.001	1.127	2.021

*Dependent Variable: Total score of SI; Independent variable: The subscales of PVQ; PVQ: Portrait Values Questionnaire; SI: social innovation

Social Innovation Scale. In the study conducted by Eren (2010) to compare the social and technological innovation tendencies of university students, students had higher tendencies to SI compared to technological innovation. The author explains this result with the fact that individualistic communities have a tendency to seeking technological solutions to their problems rather than SI; and the Turkish society, which has a collectivist culture, was more inclined or eager to SI due to its cultural traits. In the literature, it is seen that the concepts of SI and social entrepreneurship are used together (Altman & Brinker, 2016). Accordingly, the results of our study were discussed with the literature on social entrepreneurship and innovative behavior. In their study comparing the business values of Turkish and American university students, Karakitapoğlu-Akgün, Arslan, and Güney (2008) determined that entrepreneurship value scores of Turkish students studying at Bilkent and Hacettepe universities in Ankara were significantly higher than the scores of American students. The authors stated that this result was associated with the increase of industrialization and developmental opportunities in Turkey after the 1980s. In

addition, they explained that values like progression, independent decision-making, creativity, and helping one's organization ahead that were questioned as entrepreneurship values had emerged as a result of spreading of Western way of thinking obtained at American business schools. Nursing and medical students are trained to preserve and improve human health and to treat disorders. They have a tendency to be social innovators, which are to be expected. Being educated about social responsibilities regarding public health and the collectivist characteristics of the Turkish culture may be among the reasons for the number and size of the results.

When evaluating the mean scores obtained by the students from the subscales of PVQ, the highest mean score was observed in the subscale of universalism, the lowest mean score was observed in the subscale of power, and other values varied between these two mean scores. It was observed that nursing students had significantly higher scores of universalism, security, and hedonism than medical students. Karakitapoğlu-Aygün and İmamoğlu (2002) state that the value of self-transcendence, which includes the values of universalism

and benevolence that emphasize the welfare of others and the nature, is an important value for the Turks. This condition is reported to be associated especially with the increase of educational level (Dirilen-Gumus & Buyuksahin-Sunal, 2012; Karakitapoğlu-Aygün & İmamoglu, 2002). In the study conducted by Başaran (1992) with students from eight universities in Ankara using Rokeach Value Survey, students had the highest scores from the values of freedom, world peace, equality, self-esteem, and inner harmony. On the other hand, the lowest scores were obtained from the values of exciting life, pleasure, salvation, a world of beauty, and national security. In the study conducted by Demirutku (2007) to compare the values of high school and university students, university students had the highest mean scores from the values of self-direction, universalism (5.02 ± 0.62), and benevolence (5.01 ± 0.71) respectively; whereas, the lowest mean score was obtained from the values of power (4.06 ± 1.07) and tradition (4.23 ± 0.83).

In the study by Dirilen (2006), the values of Turkish students and students from Turkic Republics were compared. The highest mean scores of the Turkish students were observed respectively in the values of self-direction and universalism, whereas their lowest mean score was observed in the value of tradition. On the other hand, the highest mean score of the students from Turkic Republics were observed respectively in the values of self-direction and benevolence; whereas, their lowest mean scores were observed in the values of power and hedonism. In the intercultural comparison conducted by Gümüş (2009) in Turkish and American students, the highest mean scores were observed respectively in the values of benevolence and universalism Turkish students, whereas their lowest mean scores were observed in the values of tradition and power. On the other hand, the highest mean scores

were observed respectively in the values of self-direction, benevolence, and universalism in American students; whereas, their lowest mean scores were observed in the values of power and tradition. In the study conducted by Karakitapoğlu-Aygün and İmamoglu (2002) with university students and their families, they determined that the values of students mainly involved individualistic values like autonomy, achievement, self-improvement and relational values like benevolence. In accordance with these results, it was indicated that there have been not only collectivist values but also individualistic values in Turkey since the 1980s. In this study, it was observed that nursing and medical students had the highest mean scores in universalism values defining the act of understanding the people, dignification, protection of the people and the nature, equality and social justice, which is an expected result by the nature of health professions and is similar to other studies conducted with students. Along with universalism, the value of security defining commitment, and protection of family and social order was significantly higher in nursing students, which shows that the two health professions are different and nursing naturally focuses on, protects, and helps individuals rather than disease.

In the regression analysis that was carried out in our study, subscale scores of PVQ had an effect of 26.6% on total score of SI. In the regression model, the highest effect was observed in the subscale of universalism. In addition, stimulation, power, self-direction, and benevolence were involved in the model. Two separate regression analyses were performed for the nursing students and the medical students. The scores obtained by nursing students from the subscales of PVQ had an effect of 25% on SI; on the other hand, this rate was 30.8% in medical students. In the study of Eren (2010), the regression model established to de-

termine the effects of personal entrepreneurship characteristics (creativity, innovativeness, taking risk, proactiveness, skill of controlling, independence motive, need for achievement, and avoiding the ambiguity) on SI was statistically significant; and it was reported that all the independent variables in the model explained 38.9% of the change in SI. This result is similar and close to the regression model applied to medical students in our study. The regression models explained the SI tendency most for the medical students (30.8%), which indicates that variables other than those included in the model affected the results.

In our study, the value of universalism was involved in the model as the value with the highest effect in both groups. Additionally, other values in the model were benevolence and power in nursing students and stimulation, self-direction and (negative) hedonism in medical students. It was observed that values affecting SI changed between the groups, except for the value of universalism. Hofstede (1980) defines the Turkish culture as collectivist, hierarchical, and feminine. Values like serving the public and helping others are expressed as feminine values. In other studies conducted with nursing students, benevolence (Thorpe & Loo, 2003) and social value (Kaya et al., 2012a; 2012b) were the highest values. The value of power had the lowest mean score among all students; however, it was an effective value upon SI in nursing students. This result may be evaluated as a personal and professional outcome of the struggle of nursing to earn respect and status in the Turkish society. On the other hand, it should be taken into consideration that a professional training that is sustained on the basis of these results may also be efficient. Roles in advocacy and agents of change are related to preserving rights to life and health, which are significant in nursing education, improving individuals' general health status,

enabling nurses to access health services and solve social inequality, which may raise their tendencies to SI. In addition, studies suggest that women participate in social responsibility activities because they are more compassionate and sensitive (Külekçi, 2015). The majority of nursing students in Turkey are females, which explains the effect of universality, benevolence, and power values on SI tendencies.

The value of self-direction defining independent thinking and acting in medical students was observed to be significant in the model. Another significant value was stimulation including quest for excitement and innovation. The value of stimulation defining innovation, an exciting life, and enterprise is evaluated as openness to change together with the value of self-direction (including hedonism) defining creativity, freedom, and curiosity. In this study, hedonism was significant in the model and had a negative effect. The values of universalism and openness to change in medical students had a significant effect on total score of SI, which is compatible with innovative behavior literature (Greenhalg et al., 2004). Innovator individuals took greater risks than other people (tolerance to uncertainty) and voluntary in trial and error (Parzefall, Seeck, & Leppänen, 2008). It was indicated that medical education received "training on uncertain conditions" for students to absolutely learn how to struggle with their information deficiency and limitations of medical sciences (Kasapoğlu, 1988). It may be asserted that the content of this training can be effective in developing the properties of quest for innovation.

Study Limitations

This study was conducted at two faculties of a public university. Its data were collected in a particular period. More than half of the population was contacted, and self-reporting

data collection tools were used. These are the limitations of this study. Thus, the sample and data collection tools were limited.

CONCLUSION AND RECOMMENDATIONS

In this study conducted in the third-year nursing and medical students, SI tendencies of students were high as expected from the candidates of the profession, which serves for people. In this study, it was also determined that universalism, self-direction, stimulation, benevolence, and power values of students affected their (social) innovative behaviors at the rate of 26.6%. It was observed that values being effective on SI were both individual and collectivist values as reflecting the Turkish society. The scores obtained by nursing students from the subscales of PVQ affected SI at the rate of 25%, and this rate was 30.8% in medical students. The greatest effect was observed in the value of universalism in both groups, and the value of openness to innovation (self-direction and stimulation) containing features like quest for innovation affecting innovative behaviors in the model in medical students increased the effect upon SI.

Education and investment in human are involved among the most important objectives of SI. Universities have significant roles such as creating cultures of SI, and realizing and supporting new ideas in countries where SI is extensive. It is thought that results acquired as a result of this study regarding personal values that affect innovative behavior will contribute to the relevant literature. It is recommended

to consider the values that are effective upon activities to be conducted by educators and faculty managers to develop SI behaviors of students. Thus, this study's recommendations include determining educational methods that can improve the development of values in students' occupational courses, forming activity-based project groups to combine values with experiences and convert them into behaviors, and cooperating with healthcare experts. It is also recommended to compare senior students (fourth-year nursing and sixth-year medical students) and address SI and social determinants of health that affect individual and public health and access to healthcare services together in future studies.

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