EVALUATION OF PROBLEM SOLVING AND AGGRESSION LEVELS AMONG NURSING STUDENTS IN A UNIVERSITY

Nükhet Kırağ[1] (iD), **Yusuf Güver** [1] (iD)

1- Adnan Menderes University Faculty of Nursing. Aydın, Türkiye

Abstract
The aim of this study was to examine problem-solving levels and aggressive behaviors among nursing students studying at a nursing faculty in western Turkey. This cross-sectional study was carried out between February and March 2019. Students are stratified according to the class they are in, and sampling by school number is included with the simple random sampling method. While collecting research data, 314 students from stratified classes participated. 314 students from the first (n=111), second (n=84), third (n=61) and fourth (n=58) grades of the Nursing Faculty, who volunteered to participate, were included in the study sample. Data were collected using a sociodemographic questionnaire, the Buss–Perry Aggression Questionnaire (BPAQ) and the Problem Solving Inventory (PSI). Pearson correlation and regression analysis were performed on the continuous variables of this study. Results' type-I error was accepted as 5%. Mean PSI scores were 132.96±15.52 (min: 90, max: 202). Nursing students obtained the following scores from the Buss–Perry aggression questionnaire subscales: 19.51±5.43 (min: 8, max: 37) for physical aggression, 24.50±5.17 (min: 12, max: 40) for hostility, 20.81±5.03 (min: 9, max: 56) for anger, and 14.46±3.04 (min: 6, max: 25) for verbal aggression. A significant relationship was found between the aggression questionnaire, and the PSI and its various subscales (*p*=0.000). A statistically significant relationship was found between problem-solving skills and aggressive behavior among nursing students; as problem-solving skills increase, aggressive behavior decreases.
Keywords: Problem solving, students, nursing, aggression.

**HEMŞIRELİK FAKÜLTESİ ÖĞRENCILERİNİN
PROBLEM ÇÖZME VE SALDIRGANLIK DÜZEYLERININ İNCELENMESİ**
Bu çalışmanın amacı, Türkiye'nin batısındaki bir hemşirelik fakültesinde okuyan hemşirelik öğrencileri arasında problem çözme düzeylerini ve saldırgan davranışları incelemektir. Bu kesitsel çalışma Şubat ve Mart 2019 tarihleri arasında gerçekleştirilmiştir. Öğrenciler bulundukları sınıfa göre tabakalandı ve basit rastgele örnekleme yönteminde okul numarasına göre seçildi. Hemşirelik Fakültesinde gönüllü olan birinci (n = 111), ikinci (n = 84), üçüncü (n = 61) ve dördüncü (n = 58) sınıflarından 314 öğrenci çalışma örneklemine dahil edilmiştir.Veriler sosyodemografik bir anket, Buss-Perry Saldırganlık Ölçeği (BPAÖ) ve Problem Çözme Envanteri (PÇE) kullanılarak toplanmıştır. Bu çalışmanın sürekli değişkenlerinde Pearson korelasyonu ve regresyon analizi yapıldı. Sonuçlar %95 güven aralığında ve %5 anlamlılık düzeyinde değerlendirildi (p = 0.05). Ortalama PÇE skorları 132.96 ± 15.52 (min: 90, maks: 202) idi. Hemşirelik öğrencileri Buss-Perry saldırganlık ölçeğinin alt boyutlarından şu puanları almıştır: 19.51 ± 5.43 (min: 8, maks: 37) fiziksel saldırganlık için, 24.50 ± 5.17 (min: 12, maks: 40) düşmanlık için, 20.81 ± 5.03 min: 9, maks: 56) öfke için ve 14.46 ± 3.04 (min: 6, maks: 25) sözlü saldırganlık için. Saldırganlık ölçeği ile PÇE ve çeşitli alt ölçekleri arasında anlamlı bir ilişki bulunmuştur (p<0.001). Hemşirelik öğrencileri arasında problem çözme becerileri ile saldırgan davranış arasında istatistiksel olarak anlamlı bir ilişki bulunmuştur; problem çözme becerileri arttıkça agresif davranış azalmaktadır..
Anahtar kelimeler: Problem çözme, öğrenciler, hemşirelik, saldırganlık.

Introduction

According to the Turkish Language Association's dictionary definition, the term *problem* is defined as a situation that needs to be dealt with or solved (1). Problem solving is defined as choosing and using effective and beneficial tools and behaviors to reach an intended objective. Individuals' personality traits, the living conditions that accompany a certain problem, and the individual's success when solving problems, are all determinant factors of problem solving. (2).

Having inadequate problem-solving skills results in damaging relationships among individuals and can lead to the development of other cognitive problems. Studies about this topic in literature have shown that a significant relationship exists between problem-solving skills and aggressive behavior (3, 4). Therefore, people who approach problems in a positive way, and who have rational problem-solving skills, are less likely to behave aggressively (4). A study conducted with adolescents reported that aggressive behavior increased as problem-solving skills decreased (3).

Healthcare professionals encounter various problems when dealing with patients, accordingly it is important for them to have problem-solving skills. Healthcare professionals, who provide care services for patients with different needs, detect patients' problems, determine their priorities, perform nursing practices, and make decisions by assessing the outcomes of these practices, are required to use their problem-solving skills when helping individuals and increasing the quality of patient care. Healthcare professionals who are unaware that they should possess problem-solving skills will provide lower quality care to patients. It is important for healthcare professionals to develop problem-solving skills to increase the quality of patient care, maintain healthy relations with patients, and reduce aggressive behaviors. Problem solving and aggressive behaviors among students of those schools that provide education within the healthcare field should be determined according to contributions made by vocational education (5).

The objective of this study was to evaluate problem-solving levels and aggressive behaviors of nursing students studying in nursing faculty located in western Turkey.

Material and Method

Sample and settings

The study population comprised of 800 students studying at the Nursing Faculty during the 2018–2019 academic year. "Number of persons in the population is known" sampling calculation formula $(N = Nt^2pq/d^2 (N-1) + t^2 pq)$ was used to calculate the sample and the sample of the study was found as minimum 257.

N=800, t=1.96, p=0.44, q=0.56, d=0.05

$800=800 \times 1.96^2 \times 0.44 \times 0.56/0.05^2(800-1) + 1.96^2 \times 0.44 \times 0.56 = 257$

Students are stratified according to the class they are in, and sampling by school number is included with the simple random sampling method. While collecting research data, 314 students from stratified classes participated. 314 students from the first (n=111), second (n=84), third (n=61) and fourth (n=58) grades of the Nursing Faculty, who volunteered to participate, were included in the study sample.

Ethical Consideration

Necessary written permission was taken from the Aydın Adnan Menderes University Non-Interventional Clinical Research Ethics Committee of the Nursing Faculty (code number:

093/2019) before the study commenced, and verbal consent was obtained from all the study participants. Students were informed that their credentials would be kept confidential. All participation was voluntary.

Survey

The study survey consisted of three sections. The first section included 17 questions developed by the researchers about students' sociodemographic characteristics such as age, sex, grade, place of residence, educational level of parents, smoking, and alcohol use.

The second section of the survey comprised of 29 questions taken from the Buss–Perry Aggression Questionnaire (BPAQ), which was developed by Buss and Perry (1992) and subsequently adapted into Turkish by Mardan (2012) (6). Responses to these questions were given according to a five-point Likert scale. These questions assess aggression according to four dimensions: a physical aggression subscale, which includes nine questions about hurting others physically; a verbal aggression subscale, which includes five questions about hurting others verbally; an anger subscale, which includes seven questions that aim to measure emotional aspect of aggression; and a hostility subscale, which includes eight questions about the cognitive aspect of aggression. The reliability study of scale was conducted with 220 university students; the internal consistency coefficient value of the scale found to be 0.85 (α=0.85). Alpha values of physical aggression, verbal aggression, anger and hostility subscales were found to be 0.78, 0.48, 0.76 and 0.71, respectively. Third section of the survey included 35 questions from the Problem Solving Inventory (PSI), which was developed by Heppner and Peterson (1982) (7) and adapted to Turkish by Şahin et al. (1993) (8). The questionnaire comprises of 35 items; responses are given according to a six-point Likert-type scale, scored between one and six: "I

always behave this way", "I usually behave this way", "I often behave this way", "I sometimes behave this way", "I rarely behave this way", and "I never behave this way." Total score that can be obtained from the scale range between 32 and 192 points. A reliability test was conducted, and the scale's consistency coefficient was found to be 0.90. The coefficients of various subscales ranged between 0.72 and 0.85. Items 5, 10, 11, 12, 19, 23, 24, 27, 33, 34 and 35 were used to measure "problem solving confidence," items 1, 2, 4, 6, 7, 8, 13, 15, 16, 17, 18, 20, 21, 28, 30, and 31 were used to measure "approach-avoidance," items 3, 14, 25, 26, and 30 were used to measure "personal control," and items numbered 9, 22, and 29 were not assessed. High total scores obtained from the inventory indicated that the individual participant perceived themselves as inadequate regarding their problem-solving abilities, whereas low scores indicated that individual participants perceived to have adequate problem-solving abilities.

Data Collection

The data were collected by the researchers from questionnaire responses between February and March 2019. Researchers informed the students about the aim of the study, the duration to complete questionnaires, etc. after a course. The forms were distributed to the students by the researchers, which ensured their participation in a classroom environment and then the forms are collected. The Students were reminded not to write their names and surnames on the questionnaire form to ensure anonymity of their responses. The researchers did not leave the classroom until the forms had been completed.

Data Analysis

Statistical Package for the Social Sciences software version 16.0 was used for data analysis. Frequency, numbers, standard deviation, and mean descriptive statistics tests were applied in the data analysis step. Data for the study of the

suitability of the Shapiro Wilk test was used for normal distribution. Compliance with the investigation of distributions received from Shapiro Wilk test was used. Results' type-I error was accepted as 5%. Quantitative continuous data between two independent groups were compared using a *t*-test, while quantitative continuous data between more than two independent groups were compared using one-way analysis of variance (ANOVA). The Scheffe test was used as a descriptive *post-hoc* analysis to detect the differences following the ANOVA test. Regression analyses were performed on the the Buss–Perry Aggression Questionnaire (BPAQ) and subscale Score and the Problem Solving Inventory (PSI) and subscale Score.

Results

The mean age of the participants in this study was 22±2.06 (Mean±SD). The maximum and minimum ages were 24 and 18, respectively. Of the nursing students, 35.4% were first-grade students, 80.6% were female, 33.4% had lived in a city center for longest period, 72% lived apart from their families, 44.6% had mothers who had graduated from primary school, 32.5% had fathers who had graduated from primary school, 78.7% had a middle-level income, and 94.6% of students had two living parents. Of the nurses, 81.5% grew up with their parents, 77.7% smoked, 72% did not take alcohol, 96.5% did not use other addictive substances, 77.7% had never been exposed to violence, 63.1% used Internet more than four hours a day, and 60.5% did not play war, strategy and adventure games (Table 1).

Table 1: Sociodemographic variables of nursing students.

Variables	n	%
Class		
1.	111	35.4
2.	84	26.8
3.	61	19.4
4.	58	18.5
Gender		
Girl	253	80.6
Boy	61	19.4
Place of residence for longest period		
Metropolis	90	28.7
City	66	21.0
District	105	33.4
Town	7	2.2
Village	46	14.6
Who he/she lives with		
With family	88	28.0
Apart from family	226	72.0
Education level of mother		
Illiterate	35	11.1
Literate	13	4.1
Primary School	140	44.6
Secondary School	56	17.8
High school	53	16.9
University	17	5.5

Education level of father		
Illiterate	8	2.5
Literate	13	4.1
Primary School	102	32.5
Secondary School	57	18.2
High school	88	28.0
University	46	14.6
Income level		
Very low	9	2.9
Low	34	10.8
Medium	247	78.7
High	21	6.7
Very high	3	1.0
Living status of parents		
Both parents are alive	297	94.6
My mother died, and my father is alive	4	1.3
My father died, and my mother is alive	11	3.5
Both parents are dead	2	0.6
Caregiver during babyhood		
Only mother	45	14.3
Mother and father	256	81.5
Only grandparents	6	1.9
Close relative	4	1.3
Babysitter	3	0.9
Smoking		
Yes	70	22.3
No	244	77.7
Alcohol use		
Yes	88	28
No	226	72
Use of addictive substances		
Yes	11	3.5
No	303	96.5
Exposure to violence		
Yes	70	22.3
No	244	77.7
Internet use for more than four hours each day		
Yes	198	63.1
No	116	36.9
Play war, strategy and adventure games		
Yes	124	39.5
No	190	60.5

Nursing students' mean PSI scores were 132.96±15.52 (min:90, max:202); the following scores were recorded for the four subscales: 58.97±8.56 (min:36, max:126) for approach-avoidance, 15.64±4.16 (min: 5, max: 27) for personal control, and 32.06±7.57 (min:12, max:84) for problem solving confidence (Table 2).

Table 2: Problem solving inventory and subscale scores of nursing students.

Problem Solving Inventory and Subscales	Minimum	Maximum	Mean ± SD
Approach Avoidance	36	126	58.97±8.56
Personal Control	5	27	15.64±4.16
Problem Solving Confidence	12	84	32.06±7.57
Total of the Problem Solving Inventory	90	202	132.96±15.52

Nursing students received the following mean scores from the Buss–Perry aggression questionnaire subscales: 19.51±5.43 (min:8, max:37) for physical aggression, 24.50±5.17 (min:12, max:40) from hostility, 20.81±5.03 (min:9, max:56) for anger, and 14.46±3.04 (min:6, max:25) for verbal aggression (Table 3).

Table 3: The Buss–Perry Aggression Questionnaire and subscales scores of nursing students.

Buss–Perry Aggression Questionnaire and Subscales	Minimum	Maximum	Mean ± SD
Physical Aggression	8	37	19.51±5.43
Hostility	12	40	24.50±5.17
Anger	9	56	20.81±5.03
Verbal Aggression	6	25	14.46±3.04

When the relationship between problem solving inventory and some sociodemographic characteristics of nursing students is examined the personal control subscale score of the students who were exposed to violence was higher (16.36±4.70) than those of participants whose were not the exposed the violence (15.51±3.94), the personal control of the students who grew up with the caregiver in infancy, the subscale score was 18.50±0.70 compared to 12.83±1.72 points of the students who grew up with grandmother and grandfather was significantly higher (Table 4).

Table 4: Problem Solving Inventory and subscale score according to the socio-demographic characteristics of nursing students.

Variables	Approach Avoidance	Personal Control	Problem Solving Confidence	Total of the Problem Solving Inventory
Exposure to violence				
Yes	60.75±11.32	16.36±4.70	32.33±8.05	135.18±18.57
No	58.50±7.56	15.51±3.94	31.98±7.46	132.43±14.5
t	1.931	1.515	.337	1.303
p	.132	**.030**	.142	.138
Caregiver during babyhood				
Only mother	59±7.69	17.17±3.74	33.22±7.54	133.62±15.60
Mother and father	59.08±8.78	15.44±4.22	31.91±7.57	132.90±15.67
Only grandparents	56.33±8.52	12.83±1.72	28.66±6.34	133.16±13.46
Close relative	60.66±4.04	13.66±3.78	27±4	138.33±5.03
Babysitter	53±7.07	18.50±0.70	41±5.65	124±14.14
F	.421	2.818	1.641	.275
p	.793	**.025**	.164	.894

The relationship between nursing students' aggression scale scores and their sociodemographic features was then examined. The overall aggression scores of those participants raised with a nanny (104±1.41) were found to be higher than those who grew up with their parents (81.44±13.49) (p=0.028). The anger subscale scores of those participants whose mothers (25.07±10.02) were of a 'literate' level of education were significantly higher than those of participants whose mothers were university graduates (19.35±4.04) (p=0.000). The relationship between the family economic status and the total mean scores of the physical aggression, hostility, anger, and aggression subscales were then examined. It was found that the physical aggression (25.33±5.07) (p=0.018), hostility (30±6.98) (p=0.013), anger (24.55±3.77) (p=0.022) subscale scores, and the overall aggression (100.11±17.88) (p=0.001) scores of students of a very low income levels were statistically higher than those of higher income levels. Smokers' physical aggression (21.32±6.34) (p=0.001), verbal aggression (15.21±3.47) (p=0.019) and total aggression (85.52±17.92) (p=0.048) scores were found to be higher than non-smokers' scores for these three subscales (18.99±5.03, 14.25±2.88 and 81.68±13.06, respectively). Hostility (24.53±5.56) (p=0.015) and total aggression (85.29±17.14) (p=0.007) scores of participants who used alcohol were found to be significantly higher than those who do not use alcohol (24.48±5.02 and 81.46±12.98). The physical aggression (0.30±5.90) (p=0.009) and total aggression (87.07±17.23) (p=0.005) scores of nursing students who considered themselves academically unsuccessful were higher than those who considered themselves academically successful (19.30±5.30 and 87.07±17.23, respectively). Physical aggression (20.53±6.05) (p=0.018) and total aggression (86.52±15.80) (p=0.015) scores of those nursing students who played war, strategy, and adventure games were found to be higher than those who did not play these games (18.85±4.89 and 79.94±12.69, respectively). Physical aggression (22.50±8.57) (p=0.018), verbal aggression (15.5±5.03) (p=0.010), and total aggression (86.52±15.80) (p=0.015) scores of those nursing students who used other addictive substances were found to be statistically higher than those who do not use such substances (19.43±5.29, 14.43±2.97, and

79.94±12.69, respectively). Hostility scores of those students who were exposed to violence (26.39±5.78) were found to be statistically higher than those who had not been exposed to violence (23.96±4.80) (*p*=0.040) (Table 5).

Table 5: Buss–Perry Aggression Questionnaire and subscale score according to the socio-demographic characteristics of nursing students.

Variables	Physical Aggression	Hostility	Anger	Verbal Aggression	Overall Aggression
Caregiver during babyhood					
Only mother	20.55±6.19	26.15±5.69	22.02±4.83	14.93±3.78	87.11±16.75
Mother and father	19.24±5.08	24.16±5.05	20.51±5.06	14.32±2.89	81.44±13.49
Only grandparents	19.16±10.4	24.16±5.34	21.33±5.6	13.66±3.38	81.5±22.2
Close relative	20.33±6.65	24±4.58	21.66±2.51	16.66±0.57	86.33±13.57
Nanny	28.5±3.53	30.5±4.94	24.50±0.7	16.5±0.7	104±1.41
F	1.994	2.127	1.186	1.122	2.756
p	.095	.0775	.317	.346	**.028**
Educational level of mother					
Illiterate	19.02±5.37	24.20±6.06	19.05±4.80	13.51±2.70	78.85±14.48
Literate	20.3±6.65	25.69±3.77	25.07±10.02	15.23±3.72	89.30±11.8
Primary School	19.4±5.05	24.96±4.84	20.91±4.48	14.61±2.96	83.23±13.3
Secondary School	19.57±5.74	23.48±5.55	20.53±4.25	14.23±3.36	81.01±16.1
High school	19.67±5.70	24.24±4.97	20.69±3.88	14.50±2.83	82.35±14
University	18.57±5.30	24.71±6.55	19.35±4.04	15.35±3.43	78.85±14.48
F	1.222	.717	5.398	1.018	1.972
p	.295	.636	**.000**	.413	.069
Economic status of family					
Very low	25.33±5.07	30±6.98	24.55±3.77	15.88±3.98	100.11±17.88
Low	18.88±4.38	23.55±5.4	19.79±5.94	13.79±2.78	79.32±13.58
Medium	19.31±5.38	24.38±4.93	20.65±4.62	14.41±3.01	81.95±13.73
High	20.04±6.2	24.61±5.92	23.04±7.31	15.33±3.24	86.47±16.38
Very high	21.66±8.62	27.66±1.52	18.66±3.78	16±3.60	87.33±14.57
F	3.019	3.226	2.899	1.547	4.584
p	**.018**	**.013**	**.022**	.189	**.001**
Smoking					
Yes	21.32±6.34	24.65±5.88	20.97±5.15	15.21±3.47	85.52±17.92
No	18.99±5.03	24.45±4.96	20.76±5	14.25±2.88	81.68±13.06
t	3.213	.288	.300	2.349	1.985
p	**.001**	.774	.764	**.019**	**.048**
Alcohol use					
Yes	21.29±6.16	24.53±5.56	21.20±4.94	14.95±3.29	85.29±17.14
No	18.82±4.96	24.48±5.02	20.65±5.06	14.27±2.93	81.46±12.98
t	-1.320	-3.759	-2.339	-1.185	-2.911
p	.195	**.015**	.482	.279	**.007**
Considering oneself successful					
Yes	19.30±5.30	23.93±4.78	20.43±5.03	14.37±2.94	81.30±13.32
No	20.30±5.90	26.6±6.09	22.06±4.76	14.87±3.44	87.07±17.23
t	3.694	.073	.862	1.782	2.134
p	**.009**	.428	.235	.309	**.005**
Playing war, strategy, and adventure games					
Yes	20.53±6.05	25.42±5.61	22.13±5.72	14.91±3.45	86.52±15.80
No	18.85±4.89	23.89±4.79	19.94±4.32	14.16±2.71	79.94±2.12
t	2.705	2.588	3.853	2.145	4.071
p	**.018**	.065	.253	.010	**.015**
Use of addictive substances					
Yes	22.50±8.57	27.3±8.3	23.3±5.81	15.5±5.03	86.52±15.8
No	19.43±5.29	24.4±5.04	20.69±4.97	14.43±2.97	79.94±12.69
t	2.705	2.588	3.853	2.145	4.071
p	**.018**	.065	.253	**.010**	**.015**
Exposure to violence					
Yes	22.10±6.04	26.39±5.78	21.13±4.88	15.27±3.39	88.28±16.82
No	18.84±5.0	23.96±4.80	20.73±5.09	14.26±2.90	81.02±13.13
t	4.544	3.527	.572	2.448	3.794
p	.105	**.040**	.841	.399	.399

An assessment of the relationship between students' mean aggression scale scores and subscale scores, and their mean PSI and subscale scores, revealed a weak positive correlation between hostility and physical aggression ($p<0.001$). There is an association between hostility and aggression (r=38.3%) and a weak positive correlation was found between anger and physical aggression ($p<0.001$). There is an association between anger and aggression (37.2%). A weak positive correlation was found between verbal aggression and physical aggression ($p=0.000$). There is an association between verbal aggression physical aggression (44.8%). A weak positive correlation was found between physical aggression and total aggression scores ($p<0.001$). There is an association between total aggression and physical aggression (r=77.7%). A weak positive correlation was found between personal control and physical aggression ($p<0.001$). There is an association between personal control causes and physical aggression (r=24.8%) (Table 6).

Table 6: Buss–Perry Aggression Questionnaire scores relationship between the problem.

		Physical Aggression	Hostility	Anger	Verbal Aggression	Total of Aggression	Problem Solving Confidence	Approach-Avoidance	Personal Control	Total of the Problem Solving Skills
Physical Aggression	r	1.000	.383	.372	.448	.777	.037	.030	.248	.038
	p	**.000**	**.000**	**.000**	**.000**	**.000**	.517	.598	**<0.001**	.503
Hostility	r	.383	1.000	.421	.332	.742	.056	.060	.321	.076
	p	**<0.001**	**<0.001**	**<0.001**	**<0.001**	**<0.001**	.322	.289	**<0.001**	.178
Anger	r	.372	.421	1.000	.334	.735	.051	.008	.180	.024
	p	**<0.001**	**<0.001**	**<0.001**	**<0.001**	**<0.001**	.369	.886	**.001**	.672
Verbal Aggression	r	.448	.332	.334	1.000	.653	-.004	.084	.109	.105
	p	**<0.001**	**<0.001**	**<0.001**	**<0.001**	**<0.001**	.941	.139	.053	.062
Total of Aggression	r	.777	.742	.735	.653	1.000	.050	.055	.305	.075
	p	**<0.001**	**<0.001**	**<0.001**	**<0.001**	**<0.001**	.377	.331	**.000**	.184
Problem Solving Confidence	r	.037	.056	.051	.051	.050	1.000	-.527	.186	-.671
	p	.517	.322	.369	.369	.377	**<0.001**	**<0.001**	**.001**	**<0.001**
Approach-Avoidance	r	.030	.060	.008	.084	.055	-.527	1.000	.199	.878
	p	.598	.289	.886	.139	.331	**.000**	**<0.001**	**<0.001**	**<0.001**
Personal Control	r	.248	.321	.180	.109	.305	.186	.199	1.000	.231
	p	**<0.001**	**<0.001**	**.001**	.053	**<0.001**	**.001**	**<0.001**	**<0.001**	**<0.001**
Physical Aggression	r	.038	.076	.024	.105	.075	-.671	.878	.231	1.000
	p	.503	.178	.672	.062	.184	**<0.001**	**<0.001**	**<0.001**	**<0.001**

Solving Inventory Scores of the Nursing Students

A weak positive correlation was found between hostility and anger (p=0<0.001, r=42.1%). A weak positive correlation was found between hostility and verbal aggression ($p=0<0.001$, r=33.2%). A weak positive correlation was found between hostility and total aggression scores ($p=0<0.001$, r=74.2%). A weak positive correlation was found between hostility and personal control (p=0<0.001, r=32.1%). A weak positive correlation was found between anger and verbal aggression ($p=0<0.001$, r=33.4%). A weak positive correlation was found between anger and total aggression scores ($p=0<0.001$, r=73.5%). A weak positive correlation was found between anger and personal control ($p=0.001$, r=18%). There was a medium level positive correlation between verbal aggression and total aggression ($p=0<0.001$, r=65.3%). A weak positive correlation was found between overall aggression and personal

control (p=0<0.001, r=30.5%). A medium level negative correlation was found between problem-solving confidence and approach-avoidance (p=0<0.001, r=52.7%). There was a weak positive correlation between problem solving confidence and personal control (p=0.001, r=18.6%). A medium level negative correlation was found between problem-solving confidence and overall problem-solving skills (p=0<0.001, r=67.1%). A weak positive correlation was found between approach-avoidance and personal control (p=0<0.001, r=19.9%). A high positive correlation was found between approach-avoidance and overall problem solving (p=0<0.001, r=87.8%). A weak positive correlation was found between personal control and overall problem solving (p=0<0.001, r=23.1%). (Table 6).

Discussion

A significant relationship was found between nursing students' problem-solving skills and aggressive behavior; this agrees with Aydın et al. (2005), who reported a significant relationship between anger, aggression behavior, and problem-solving skills (9). Büyükgöze and Koç (2015) reported that improving university students' problem-solving skills reduces their aggressive behavior (10). Accordingly, the findings of the current study agree with those of related literature.

A relationship was found between mother's educational level and anger among nursing students. The anger scores of the participants whose mothers were of a 'literate' educational level were higher than those whose mothers were university graduates. It was found that students' level of anger decreases as their mothers' educational level increases, as an increase in mothers' consciousness and awareness is believed to have an effect on their children's anger management.

Statistically significant relationships were found between the economic status of students' families, and physical aggression, anger, and overall aggression scores. Similarly, Yurttaş (2016) found a significant relationship between income level and aggressive behaviors (11). Ece (2014) also found that family income level affected aggressive behavior (12). The results of this study, therefore, are similar to those of relevant literature. Yıldız (2009) reports that there is a difference between income level and aggression, which disagrees with the results of the current study; this difference is potentially attributable to the fact that sociodemographic variables of participants in Yıldız's research differed from those of the current study (13).

A statistically significant relationship was found between smoking and physical aggression, and verbal aggression and overall aggression scores. In the current study, aggressive behavior levels of nursing students who smoked were found to be higher than those who did not smoke, while Yurttaş (2016) found that mean aggression scores of individuals who smoke are higher than those who do not smoke (11), thereby supporting this study's findings. A statistically significant relationship was found between alcohol use and hostility, and total aggression scores. University students who use alcohol were found to have higher hostility and overall aggression scores compared with those who do not use alcohol. Physical aggression and total aggression scores of students who use other addictive substances were found to be higher than those who do not use such substances. Similarly, Yurttaş (2016) found a statistically significant difference between the mean participants' aggression scale and alcohol habit and use scores (11). In the current study, levels of aggression among individuals who use alcohol were found to be higher than those who do not

use alcohol. In line with relevant literature, this study found that substance abuse has a negative effect on aggressive behaviors.

The results of this study indicate that physical aggression and total aggression scores of students who consider themselves to be unsuccessful were higher than those who consider themselves to be successful. Kurtyılmaz (2005) conducted a study on the aggression levels and academic achievements of teacher candidates and found a statistically significant relationship between aggression behaviors and problem-solving skills; these results show that the aggression behaviors of teacher candidates increase in parallel with their inadequacy perceptions regarding their own problem-solving skills (14).

The results of the current study showed that playing war, strategy and adventure games was a distinctive variable regarding total physical aggression and general aggression scores. Therefore, total physical aggression and general aggression scores of individuals who played such games were found to be significantly higher than those who did not play these games. Accordingly, Evcin (2010) reported that scores obtained from the aggression scale and its subscales increased for children who play violent games (15). Öztütüncü (2006) conducted a review of studies related to the effects of computer games on violence among children. The review found that games caused violence, and negatively affected children's behavior and brain functions (16). The results of the current study show similarities to those of other related research in the available literature.

Students who were exposed to violence had higher hostility subscale scores than those who had not been exposed to violence. Accordingly, exposure to violence is a potential factor increasing emotions of hostility.

Aggression in nursing students tendency detection, early problem solving skills and prevent aggression is important in terms of. Also, examining the relationship between problem solving skill and aggression level will be guiding. These skills of nursing students winning will enable them to use their problem-solving skills without exhibiting aggressive behavior in their professional life. Especially difficult the tension that will occur when the patient and the difficult patient relatives meet nurses play important roles in reducing them. Nurses to fulfill this role, their problem solving skills it is possible with their use.

Conclusion and Limitations

Problem solving skills of nursing students, as healthcare professionals, should be determined, developed, and assessed within those schools in which they receive their training. Problem-solving skills of students can be developed by healthcare professionals, experts and scientists by applying special techniques and educations about problem-solving on the students. Therefore, the science world should give importance to problem solving topic. The development of problem-solving skills will enable these students to find rational solutions by increasing their ability to deal with obstacles that may arise during the provision of care. Moreover, the aggression levels of students can be determined during nursing training, and course curriculums can be emended or changed to improve nurses' handling methods accordingly.

The findings of this study are limited to nursing students who participated in this study. All findings were based on respondents' own statements.

<u>References</u>

1. *Turkish Language Association. www.tdk.gov.tr, Erişim tarihi: 24.08.2019.*
2. *Gülbüz E. Evaluation of the Problem Solving Skills Among the Students of Vocational School of Health Services. University of Turkish Aeronautical Association, Institute of Social Sciences, Department of Business Administration, 2014; Master Thesis, Ankara.*
3. *Arslan C, Hamarta E, Arslan E, Saygın Y. An Investigation of Aggression and Interpersonal Problem Solving in Adolescents. Elementary Education Online, 2010; 9(1):379-388.*
4. *Şahin P. The Relationship Between Various Demographic Characteristics of Problem-Solving Skills Nurses (Sample of Adnan Menderes University Application and Research Hospital). Beykent University, Institute of Social Sciences, Department of Business Administration, Hospital and Health Institutions Management, 2015; Master Thesis, İstanbul.*
5. *Yılmaz E, Karaca F, Yılmaz E. Examining the Problem Solving Skills and Some Related Factors of the Health College. Atatürk University Journal of Anatolia Nursing and Health Sciences, 2009; 12: 1.*
6. *Mardan A. The Reliability and Validity of the Buss-Perry Aggression Questionnaire (BAQ)-Turkish Version. Turkish Journal of Psychiatry, 2012; 23:5.*
7. *Heppner P.P, Petersen C.H. The Development and Implications of a Personal Problem Solving Inventory. Journal of Counseling Psychology, 1982; 29:166–175.*
8. *Şahin N, Şahin N.H, Heppner P.P. Psychometric Propoties of the Problem Solving Inventory in a Group of Turkish University Students. Cogn Ther Res, 1993; 17:379-396.*
9. *Aydın B, İmamoğlu S, Yukay M. Examination of the Relationship Between Anger Experiences and Problem Solving Skills of University Students. Marmara University Journal of Educational Sciences, 2005; 21:1-18.*
10. *Büyükgöze A, Koç B. The Investigation of the Relationships Between Aggression and Interpersonal Problem-Solving Skills, Interpersonal Relationship Styles, and Communication Skills Among University Students. International Journal of Turkish Literature Culture Education, 2015; 4(2): 783-799.*
11. *Yurttaş H. Investigation of Aggression Levels of University Students Making and Not Making Sports. Atatürk University, Institute of Educational Sciences, Department of Physical Education and Sports Teaching, Physical Education And Sports Teaching, 2016; Master Thesis, Erzurum.*
12. *Ece C. Research of Aggression Level of Student who are Spectators of Football. (Sample as Sakarya). Dumlupınar University Institute of Health Sciences, Department of Physical Education and Sports, 2014; Master Thesis, Kütahya.*
13. *Yıldız S. An Examination of the Levels of Aggression of the Secondary School Students Participating and Non Participating Sports. Selçuk University, The Institute of Health Science, Department of Physical Education and Sport, 2009; Master Thesis, Konya.*
14. *Kurtyılmaz Y. Relationships Between Teacher Trainees' Aggression Levels and Academic Achievement, Communication Skills, Problem Solving Skills: (An Investigation on the Students of Anadolu and Osmangazi University). Eskişehir Anadolu University, Institute of Educational Sciences, Department of Educational Sciences, 2005; Master Thesis, Eskişehir.*
15. *Evcin S. Investigation of the Effects of Computer Games on the Tendency of Aggression of Elementary School Students. Maltepe University, Institute of Social Sciences, Department of Psychology, Unpublished 2010; Master Thesis, İstanbul.*
16. *Öztütüncü F. Video Games and Children: Violence in Video Games New. Yeni Symposium Journal, 2006;44(4):161-164.*