# **Determining the Achievement Levels of Current** and Newly Graduated Nursing Students Through **Undergraduate Curriculum Outcomes**

## Öğrenci ve Yeni Mezun Hemşirelik Öğrencilerinin Lisans Programı Çıktılarına Ulaşma Düzeylerinin Belirlenmesi

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#### **ABSTRACT**

Purpose: The aim of this study is to determine the level of achievement of undergraduate program outputs of student and newly graduated nursing students.

Methods: This research was conducted as a descriptive study with 108 students (juniors=54. seniors=37, newly graduated=17). To collect data the study used a personal information form determining the sociodemographic characteristics of the students, a bachelor's degree nursing program assessment scale (BNPAS), and an evaluation form assessing the students' level of achievement in the nursing department program.

Results: In the study, the mean score of the students' level of achievement in the nursing department program outcomes was 59.35±12.23 for junior students (n=54), 59.62±11.28 for senior students (n=37), and 62.29±9.67 for newly graduated students (n=17). The total mean score of the students was 76.61±22.11. A positive and highly significant correlation was determined between the students' mean scores in achieving the program outcomes and their BNPAS and subdimension mean scores (p<0.05).

Recommendations and Conclusion: The study found the achievement level of the nursing students in the program to be good. The study also found that the students evaluated the nursing program to be preparing them sufficiently to enter the nursing profession.

Keywords: Nursing education, nursing students, graduate, program evaluation

ÖZ

Amaç: Bu çalışmanın amacı öğrenci ve yeni mezun hemşirelik öğrencilerinin lisans programı çıktılarına ulaşma düzeylerini belirlemektir.

Yöntem: Bu çalışma 108 öğrenci (3. Sınıf=54, 4. Sınıf=37, yeni mezun=17) ile tanımlayıcı tipte yapılmıştır. Araştırmada veri toplama aracı olarak, öğrencilerin sosyodemografik özelliklerinin belirlendiği kişisel bilgi formu, Hemşirelikte Lisans Programını Değerlendirme Ölçeği (HLDPÖ) ve Öğrencilerin Hemşirelik Bölümü Program Çıktılarına Ulaşma Düzeylerini Belirleme Formu

Bulgular: Çalışmada öğrencilerin hemşirelik bölümü program çıktılarına ulaşma düzeyi puan ortalamaları 3. Sınıf (n=54) 59,35±12,23, 4. Sınıf (n=37) 59,62±11,28, yeni mezun (n=17) 62,29±9,67 ve öğrencilerin HLPDÖ'den aldıkları toplam puan ortalaması 76.61±22.11 olarak

Sonuç ve Tartışma: Çalışmadan elde edilen bulgulara göre; hemşirelik öğrencilerinin program çıktılarına ulaşma düzeylerinin iyi olduğu ve hemşirelik programını mesleği hazırlamada etkin olarak değerlendirdikleri belirlenmiştir.

Anahtar kelimeler: Hemşirelik eğitimi, hemşirelik öğrencileri, mezun, program değerlendirme

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#### **INTRODUCTION**

Infectious diseases and chronic diseases such as COVID-19 are challenging the existing health systems around the world, increasing the urgency of the need for nurses with high professional qualifications and competence (1). WHO has stated that professional qualification and competence play a key role in ensuring nurses' work safety and health (2). The graduate of a nursing education program is considered to have achieved the required program outcomes and to be adequately equipped for professional working life. A nursing education program is a planned set of activities utilizing resources and structures that deliver a curriculum that ensures the achievement of educational objectives and program outcomes. Nursing program outcomes are the final results of a curriculum that defines the knowledge, skills and attitudes students must acquire to complete a nursing education program (3). Nursing education programs incorporate course content, course teaching styles and program outcomes to ensure the success and professional development of nursing students. For this reason, a successful academic program must have the competence to fulfil both the theoretical education requirements and practical training needs of the students. The learning process requires not only acquisition of knowledge and skills, but also the practical training to do a professional job. A qualified nursing program trains qualified graduates for the current nursing workforce by accepting the students with the highest potential to complete this program (4). For this process to work successfully, it is important to determine which goals have been achieved in the implementation of training programs.

The process of program evaluation is the systematic and critical examination of existing programs and organizations to obtain measurable, accurate and useful information about the value of a particular program or organization <sup>(5,6)</sup>. Objective decisions regarding changes to be made in the current program, evaluation of program objectives and effectiveness, and presenting transparent findings and unbiased results to the program stakeholders are the most important stages of the program evaluation process. In fact, this process creates a structure that includes the self-evaluation process of educational institutions, supports the decision-making strategies of institutions in reference to results, and is maintained in a goal-directed way <sup>(7)</sup>.

Nursing program evaluations include methods ranging from evaluating a course in a curriculum to evaluating program graduation rates and cover the internal and external stakeholders of the program (faculty, administrators, governmental institutions, students, hospitals, etc.) to guide changes in the curriculum and to meet the current educational needs <sup>(8)</sup>. With the establishment in the 1980s of standard program evaluation criteria in higher education, nursing programs began to be included in this process, and these criteria are now being used to evaluate how educational institutions are meeting accreditation standards <sup>(9)</sup>.

The most widely accepted program evaluations around the world are student evaluations. Students are among the most important stakeholders of any educational program. Measuring students' perceptions regarding program quality and learning experience, resulting readiness for practice, and perception of competence after graduation provides important findings for evaluating teaching quality (10). However, program evaluations, such as the level of students' achievement in program outcomes and information about graduates, should be based on more than one source. They are often made only within the time allotted to ensure accreditation standards, which is thought to reduce the value that program evaluation can have in continuous program improvement (11). Only limited studies exist in the literature on the evaluation processes of current programs (5,12,13).

## **MATERIALS AND METHODS**

#### Aim

This study aims to determine the achievement level of newly graduated and current undergraduate nursing students in undergraduate program outcomes during the COVID-19 pandemic period.

**Type of research:** The research was of descriptive type.

Place and time of research: The research was carried out between October and November 2021 with students studying in the nursing department of a private university in Istanbul.

The population and sample of the research: The population of the research consisted of junior and senior students studying in the nursing department



of the university and students who graduated in the summer term of 2021 (n=208). The study aimed to reach the entire universe without selecting the sample. 54 junior students, 37 senior students and 17 newly graduated students were included in the study. and a total of 108 students (52%) were reached. After the World Health Organization (WHO) declared the pandemic on March 11, 2020, the Council of Higher Education in Turkey (CoHE) announced as of March 16, 2020 the commencement of distance education in all higher education institutions (14,15). The students participating in the study could not attend clinical practice in the spring semester and courses were held online. When the restrictions lifted, all students completed the missing practices in hospitals and other practice areas (family health centers, schools, workplaces) in the summer term.

**Data collection tools:** To collect data, the study used a personal information form determining the sociodemographic characteristics of the students; a Bachelor's Degree Nursing Program Assessment Scale (BNPAS); and a form evaluating students' level of achievement in the nursing department program outcomes. The personal information form prepared by the researchers consists of 10 questions designed to collect information like students' age, gender, school type, and grade point average.

Bachelor's degree nursing program assessment scale (BNPAS): This is a scale consisting of four subdimensions such as "Assessment of Professional Development and Competence-APDC", "Assessment of Teaching Process-ATP", "Assessment of Individual Development-AID", and "Gaining Universal, National and Professional Values-GUNPV". The scale was developed by Demiralp et al. in 2014 to evaluate the effectiveness of nursing undergraduate programs in Turkey (16). The internal consistency Cronbach Alpha value of the Bachelor's Degree Nursing Program Assessment Scale was 0.97, and the Cronbach Alpha values of the four subscales were between 0.91 and 0.95. The Cronbach Alpa value of the scale in this study was determined as 0.994. In practice, the participant is asked to read each statement in the scale carefully and give a score ranging from 1 to 10. The total score obtained as a result of the evaluation is a minimum of 40 and a maximum of 400. The score obtained is divided into four and the total score of the scale then evaluated out of 100. Low scores obtained from the scale correlate to negative effectiveness of the program, and high scores indicate that the effectiveness of the program correlate to positive effectiveness.

The evaluation form of students' level of achievement in the nursing department program outcomes: This form consists of 14 nursing program outcomes in the Bologna Information System of the university where the research was conducted. The form was prepared in a five-point Likert-type scale and each program outcome was scored from 1 to 5 (1 = I strongly disagree, 5 = I strongly agree). According to the answers given by the students for the level of achievement in the program outcomes, a minimum of 14 and a maximum of 90 points can be obtained from the form. High scores obtained from the form correlate to high levels of achievement in the program outcomes.

**Data collection:** The data were collected online via a survey form prepared using Google forms. The link to the data collection form was shared with the participants via WhatsApp social media.

Data analysis: The data obtained from the research were analyzed using the SPSS 21.0 (Statistical Package for Social Sciences Version 21) program. Statistical methods (number, percentage, mean, standard deviation) were used to evaluate the data. Normal distribution compliance tests were checked using the Kolmogorov-Smirnov test. Analysis of the data determined there was no normal distribution. Mann Whitney U test was used to compare two measurements in quantitative data. Kruskal Wallis tests were used for comparison of more than two groups.

Ethical aspect of research: Permission conduct the study was obtained from the Non-Interventional Research Ethics Committee of the host university (61351342/September/2021-01). Language stating the research and participation in the research was voluntary was added to the beginning of the online data collection form, and informed consent was obtained. After the students approved the consent form, they moved on to other questions.

## **FINDINGS**

The mean age of the students participating in the study was  $21.91 \pm 2.035$  and their grade point average was  $3.05 \pm 0.51$ . 88% of the participants were women. 70.4% graduated from non-health-

related high schools such as Science or Anatolian Vocational High School. 50.0% were juniors and 92.6% had no courses remaining. 88.9% chose nursing voluntarily, 74.1% had knowledge of nursing department program outcomes, and 79.6% judged nursing department program outcomes to be achievable (Table 1).

Table 2 presents the total and item mean scores showing achievement level of students in the program outcomes. The junior students' total mean scores is 59.35±12.23 (min. 28-max. 70); the senior students' total mean scores are 59.62±11.28 (min. 28-max. 70); and the newly graduated students' mean scores are 62.29±9. 67 (min. 40-max.70).

Table 3 shows student scores on the BNPAS scale. The mean score was 76.61±22.11. The mean from the sub-dimensions of the scale were 19.02±5.45 from APDC, 14.68±4.69 from ATP, 21.21±6.31 from AID and 21.68±6.23 from GUNPV (Table 3).

Table 4 shows the relationship between the students' age, grade point average (GPA), their achievement

in meeting the program outcomes and their BNPAS scores.

The Table 5 shows that determined a statistically different (p=0.023) in the mean score of the Assessment Individual Development sub-dimension of the students who chose the nursing department voluntarily.

The study determined a statistically significant difference (p<0.05) between the total mean BNPAS score of the students who voluntarily chose the nursing department (p=0.023) and the students who believed the program outcomes of the nursing department were achievable (p=0.001).

#### **DISCUSSION**

Evaluation of nursing programs is a professional responsibility. There is a need for systematically conducted program evaluations to raise qualified graduates and strengthen existing education programs academically; one of the most widely accepted of these all over the world is student

Table 1. Descriptive Characteristics of the Students Participating in the Study

Descriptive Characteristics (n=108)	Mean ± SD	Min.	Max.
Age	21.91 ± 2.035	20	36
Grade Point Average	3.05 ± 0.51	1.65	3.91
		n	%
Gender	Female	95	88.0
	Male	13	12.0
Type of the High School	Healthcare Vocational High School	32	29.6
	Other	76	70.4
Year	Junior	54	50.0
	Senior	37	34.3
	Graduate	17	15.7
Remaining courses	Yes	8	7.4
	No	100	92.6
Choosing the nursing department voluntarily	Yes	96	88.9
	No	12	11.1
Knowledge of nursing department program outcomes	Yes	80	74.1
	No	28	25.9
Beliefs that the nursing department program outcomes are achievable	Yes		79.6
	No	22	20.4



Table 2. Students' Level of Achievement in the Nursing Department Program Outcomes (n=108)

	Junior (	n=54)	Senior (	n=37)	Newly gradu	uated (n=17)	Test Value
	Mean ± SD	Min-Max	Mean ± SD	Min-Max	Mean ± SD	Min-Max	F p
Total mean score	59.35±12.23	28-70	59,62±11.28	28-70	62.29±9.67	40-70	1,055 ,286
1. Having the necessary knowledge and skills to fulfill the nursing roles and functions.	4±1	2-5	4±1	2-5	4±1	3-5	1,295 ,278
Using information and care technologies and scientific principles and methods in nursing practices	4±1	1-5	4±1	2-5	4±1	3-5	,660 ,519
3. Meeting the health care needs of the individual, family, and society with a holistic and evidence-based approach in line with the nursing process.	4±1	2-5	4±1	2-5	4±1	2-5	,434 ,649
4. Communicates verbally and in writing with the individuals they serve and the members of the healthcare team.	4±1	1-5	4±1	1-5	5±1	3-5	1,060 ,350
5. Monitoring professional development and national and international studies on professional issues	4±1	2-5	4±1	1-5	4±1	3-5	,262 ,770
6. Acting in accordance with ethical principles and values in their professional practices.	4±1	2-5	4±1	2-5	5±1	3-5	,460 ,632
7. Considering the relevant policies, laws, and regulations in their professional practices.	4±1	2-5	4±1	2-5	5±1	3-5	,710 ,494
8. Using critical thinking, problem solving and lifelong learning skills in personal and professional development.	4±1	2-5	4±1	2-5	4±1	3-5	,087 ,917
9. Performing nursing practices and studies with colleagues in a team-based approach.	4±1	2-5	4±1	2-5	4±1	2-5	,216 ,806
10. Participating in research and projects that will contribute to the society in cooperation with the healthcare team and other disciplines.	4±1	1-5	4±1	1-5	4±1	2-5	,511 ,601
11. Taking responsibility in protection and improvement tasks by being sensitive to all kinds of social, legal, economic, and ecological factors affecting people.	4±1	1-5	4±1	2-5	4±1	3-5	,269 ,765
12. Using leadership and management skills in their professional work and care practices.	4±1	2-5	4±1	2-5	4±1	2-5	,413 ,663
13. Using training and counseling skills in nursing practice.	4±1	1-5	4±1	2-5	5±1	2-5	,767 ,467
14. Carrying out nursing practices by considering the safety of the individual/family, society, and employees.	4±1	2-5	4±1	2-5	5±1	3-5	,755 ,473

Table 3. Distribution of Students' BNPAS Scores (n=108)

BNPAS and Sub-dimensions	Mean ± SS	Min-Max
Assessment of Professional Development and Competence-APDC	19.02±5.45	3.75-25
Assessment of Teaching Process-ATP	14.68±4.69	3.25-20
Assessment of Individual Development-AID	21.21±6.31	2.75-27.5
Gaining Universal, National and Professional Values-GUNPV	21.68±6.23	3.5-27.5
TOTAL	76.61±22.11	14.25-100

Table 4. The Relationship Between Descriptive Characteristics of Students, Average Scores of Achievements of Program Outcomes and their BNPAS Scores

Variables		APDC	ATP	AID	GUNPV	BNPAS
Age	r	0.054	0.050	0.061	0.044	0.054
	р	0.581	0.605	0.528	0.650	0.580
Grade Point Average	r	0.072	0.050	0.037	0.078	0.061
	р	0.464	0.610	0.704	0.431	0.536
Students' Level of Achievement in	r	0.726	0,708	0.759	0.738	0.754
Nursing Program Outcomes	р	0.000	0.000	0.000	0.000	0.000

r=Pearson Correlation

APDC=Assessment of Professional Development and Competence. ATP=Assessment of Teaching Process. AID=Assessment of Individual Development. GUNPV=Gaining Universal, National and Professional Values

evaluation of programs in which they are involved (17,18). The variables commonly used in program evaluations are student completion and departure rates, graduation rates, success levels on standard exams, GPAs, and graduates' perceptions of learning and readiness for practice, employment rates, and employer evaluations (11). This study, conducted with 108 students and newly graduated nurses, concerned nursing student evaluations regarding their nursing undergraduate programs and their views on education; the fact that the majority of the participants (92.6%) had no remaining lowerclass courses and that their grade point average was 3.05 are important indicators of the success level of the students in their program. It is positive that the majority of the students have knowledge about the outcomes of the nursing department program and think that the curriculum outcomes of the nursing department are achievable. A study evaluating student satisfaction and commitment within an undergraduate program in nursing education determined that because students lacked sufficient information regarding program objectives, they had difficulty committing to the program (19). To achieve the goals expected from them, students must be aware of, clearly recognize and understand educational program objectives and aims.

Our study determined students' achievement of program outcomes to be good; their high BNPAS score (76.61±22.11) corresponds to this finding. A study by Ovayolu et al. (2021) in which nursing students evaluated their nursing undergraduate programs found the average BNPAS score of the students to be 61.1±19.8 (20). A study by inangil et al. (2017) that included students from a private university's nursing department determined that the students' expectations of successfully achieving

the program outcomes were low; it has been stated that such low expectations are due to the fact that nursing programs contain numerous qualification items that are difficult to fulfil, and that the content is not adequately introduced and explained to the students (21).

Our study found that the evaluation scores of the students regarding the undergraduate program were quite high despite the limitations resulting from the COVID-19 pandemic. This is quite positive in showing that students are able to achieve the goals and objectives of the program.

Our study found that the mean scores in BNPAS subdimensions Assessment of Professional Development and Competence and Assessment of Teaching Process were higher in those who voluntarily chose the nursing department and those who thought that the nursing department program outcomes were achievable. It is important that the aims and objectives of an education program are clear and understandable to students in order for them to achieve the goals expected (17,18). In addition, course contents must be suitable for realizing teaching objectives and course materials must be suitable for facilitating learning, meeting learning needs by increasing student motivation. The literature emphasizes that one of the most factors for nursing students to achieve program outcomes is positive and constructive relations between students and faculty members. A study investigating the impact of this relationship on student academic achievement levels found that a supportive and relevant relationship between students and faculty members and diversity in teaching activities were most effective in ensuring students' academic success (22). Our study results support these findings in the literature.

Table 5. The Distribution of the Difference Between the Descriptive Characteristics of the Participants and their BNPAS and Sub-Dimensions Scores

		APDC	20	ATP		AID		GUNPV	IPV	BNPAS	AS
Descriptive Characteristics	<u>3</u>	Mean ± SD	Test Value	Mean ± SD	Test Value	Mean ± SD	Test Value	Mean ± SD	Test Value	Mean ± SD	Test Value
Gender	Female	19.23±5.15	Z=-0.387	14.80±4.55	Z=-0.307	21.47±5.94	Z=-0.397	22.01±5.77	Z=-0.383	77.51±20.78	Z=-0.397
	Male	17.52±7.43	P=0.698	13.85±5.76	P= 0.759	19.35±8.63	P=0.691	19.35±8.93	P=0.702	70.06±30.41	P=0.692
High school Graduated	HVHS	19.02±5.33	Z=-0.114	14.78±4.61	Z=-0.013	20.95±6.38	Z=-0.233	21.38±5.96	Z=-0.526	76.13±21.59	Z=-0.222
	Other	19.03±5.54	P=0.909	14.65±4.76	P=0.989	21.32±6.33	P=0.816	21.82±6.39	P=0.599	76.82±22.47	P=0.824
Remaining Courses	Yes	20.34±5.56	Z=-0.951	16.16±4.45	Z=-0.981	23.09±6.31	Z=-1.017	22.37±6.12	Z=-0.170	81.97±22.26	Z=-0.827
	No	18.92±5.46	P=0.342	14.57±4.71	P=0.327	21.06±6.32	P=0.309	21.64±6.27	P=0.865	76.19±22.16	P=0.408
Choosing the	Yes	19.52±5.13	Z=-2.270	15.16±4.36	Z=-2.423	21.81±5.86	Z=-2.272	22.13±5.97	Z=-1.797	78.62±20.72	Z=-2.166
Department Voluntarily	No	15.08±6.59	P=0.023	10.94±5.74	P=0.015	16.4±7.95	P=0.023	18.17±7.42	P=0.072	60.58±27.08	P=0.030
Having Knowledge	Yes	19.39±5.47	Z=-1.463	14.88±4.71	Z=-0.972	21.7±6.23	Z=-1.780	22.02±6.36	Z=-1.559	77.99±22.18	Z=-1.480
About POs	No	18±5.39	P=0.143	14.13±4.69	P=0.331	19.8±6.44	P=0.075	20.75±5.9	P=0.119	72.69±21.84	P=0.139
Thinking that POs are	Yes	19.93±5.13	Z=-3.478	15.31±4.44	Z=-2.712	22.22±5.78	Z=-3.332	22.63±5.88	Z=-3.316	80.08±20.68	Z=-3.395
achievable	No	15.51±5.37	P=0.001	12.27±4.96	P=0.007	17.26±6.87	P=0.001	18.02±6.37	P=0.001	63.07±22.79	P=0.001
Year	Junior	18.82±5.41	KW=1.542	14.63±4.63	KW=1.206	20.88±6.44	KW=1.453	21.81±6.13	KW=1.029	76.14±21.84	KW=1.451
	Senior	18.84±5.57	P= 0.462	14.42±4.65	P=0.547	21.15±6.3	P=0.484	21.19±6.36	P=0.598	75.6±22.48	7=0.484
	Graduate	20.09±5.55		15.46±5.17		22.41±6.16		22.38±6.61		80.34±23.13	

APDC=Assessment of Professional Development and Competence. ATP=Assessment of Teaching Process. AID=Assessment of Individual Development. GUNPV=Gaining Universal, National and Professional Values. HVHS=Healthcare Vocational High School. PO=Program Outcomes. Z=Mann Whitney U. KW=Kruskal Walls

Our study determined the BNPAS Assessment of Individual Development sub-dimension mean score to be higher in students who voluntarily chose the nursing department, and the mean scores of the Assessment of Individual Development and Gaining Universal, National and Professional Values subdimensions were higher in students who thought the program outcomes of the nursing department were achievable. Considering that students who voluntarily choose nursing are more likely to overcome academic difficulties and be successful, it can be said that the findings of our study are compatible with the literature (23). A study by Capello and Flag (2021) examined factors that students believed enabled them to complete a nursing program and determined there were internal and external factors that contributed to the students' choosing the nursing profession (24). In the literature, studies have determined that internal factors such as caregiving, willingness to help, personal experiences with health services and expectations of making a career after graduation, and external factors such as income generation, ease of employment and role models in the immediate environment are strong influences for choosing nursing. It has been revealed that those who voluntarily choose to study nursing have a high rate of graduation (23,25-27). Considering that a high rate of graduation is an indicator of program success, the success rate of the current program can be considered high.

## **Conclusion and recommendations**

The study determined that despite the negative experiences of the COVID-19 pandemic period, the nursing student subjects achieved their program's outcomes and evaluated their nursing program to be sufficient to prepare them for their profession. Considering that students have different learning styles and that health conditions are constantly changing, it is important to evaluate students' achievement in program outcomes. The evaluation of nursing education programs is an ongoing professional responsibility. For these and similar reasons, the suitability of nursing education programs in the face of change should be constantly examined and adjusted according to students' feedback..

## **Author contribution**

Study conception and design: AD, NU and GG; data collection: AD,N, and GG; analysis and interpretation

of results: AD, NU and GG; draft manuscript preparation: AD, NU and GG. All authors reviewed the results and approved the final version of the manuscript.

## **Ethical approval**

The study was approved by the Uskudar University Non-invasive Research Ethics Committee (Protocol no. 2021-01/28.09.2021).

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## **Conflict of interest**

The authors declare that there is no conflict of interest

#### Yazar katkısı

Araştırma fikri ve tasarımı: AD, NU ve GG; veri toplama: AD, NU ve GG; sonuçların analizi ve yorumlanması: AD ve NU, GG; araştırma metnini hazırlama: AD, NU ve GG. Tüm yazarlar araştırma sonuçlarını gözden geçirdi ve araştırmanın son halini onayladı.

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