



Investigation of Nursing Students' Opinions Related to Their Pharmacology Knowledge Levels

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TURKEY







An important part of health care education, quality of nursing care and patient security is **safe drug administration;** Professional responsibility means that nurses must have sufficient pharmacological knowledge and have the authority to make decisions on what should and should not be done.

Taylor, C., Lillis, C., Lemone, P. (2001). Fundamentals of Nursing. The Art and Science of Nursing Care. Fourth Edition, Lippincotot, Philadelphia, 567-87.



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- Drug administration and related professional responsibilities of nurses include having knowledge about the drug being given, administering the drugs in a safe and correct way, observing and commenting on an individual's reaction to a drug, and being educated on drug treatment.



Karaca, A., Açıkgöz, F. Hemşirelik Öğrencilerinin İlaç Dozu Hesaplama Becerileri ve İlaç Uygulama Hataları, *Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi,* 17(2):110-16, 2014.
Ayık, G., Özsoy, A.S., Çetinkaya, A. Hemşirelik Öğrencilerinin İlaç Uygulama Hataları. *İ.Ü.F.N. Hem. Derg.,* 18(3):136-43, 2010.

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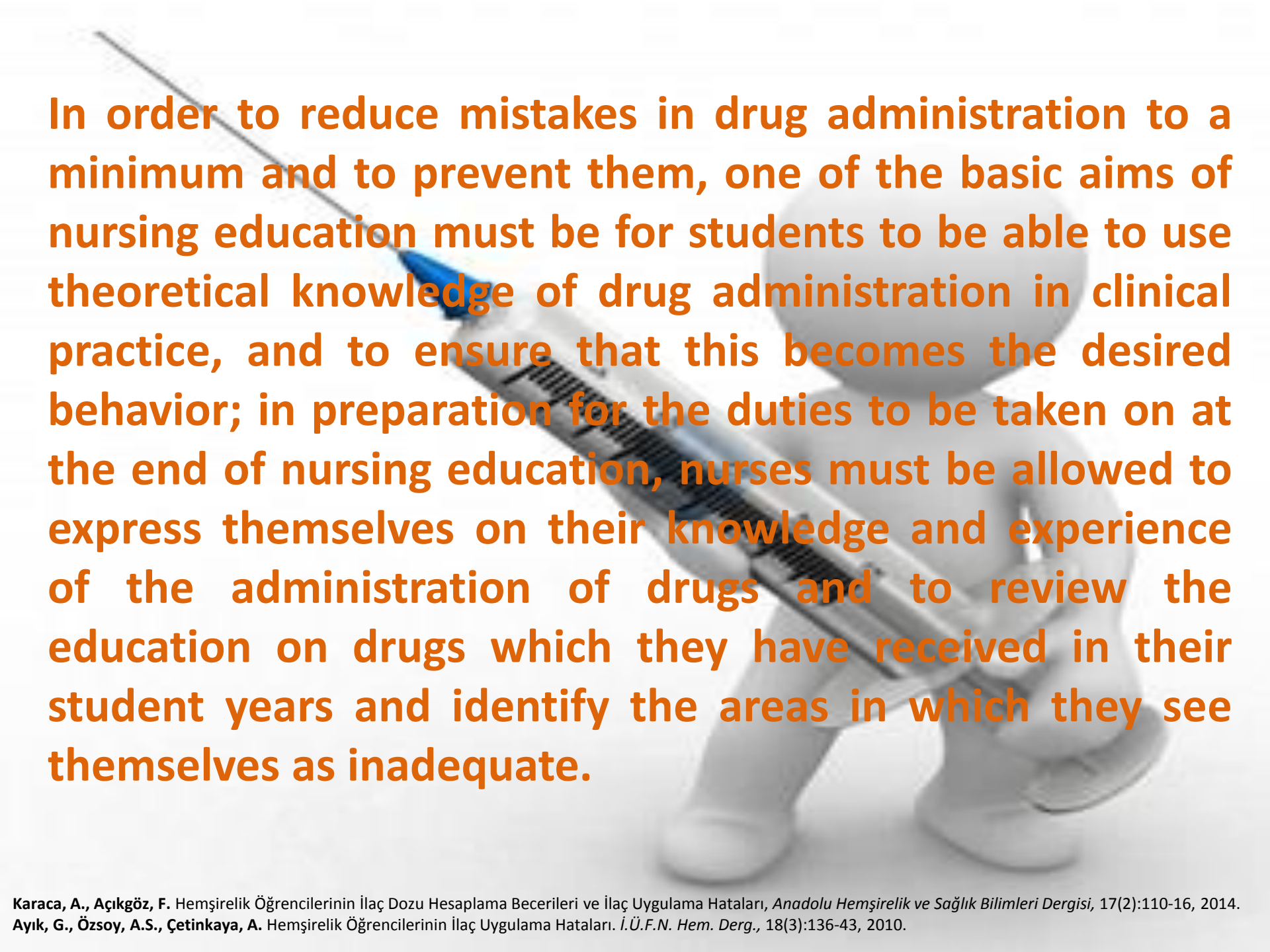


The literature reports that mistakes in drug administration are very common, but that many could be prevented by education. When a mistake in drug administration occurs, one of the main causative factors is lack of information.

Çakır, A. (2010). Özel Bir Hastanede İlaç ve İlaç Uygulamalarına Yönelik Eğitimlerin değerlendirilmesi, www.acibademhemsirelik.com/Bilimsel-Calismalar-Detay.asp?Id=983, Erişim Tarihi:11.06.2015.

Durmaz A. (2007). Hastaların Hastaneye Yatmadan Önce Kullandıkları İlaçların Kliniğe Kabul Edildikten Sonra Kullanımı İle İlgili İlaç Hatalarının İncelenmesi. Dokuz Eylül Üniversitesi Sağlık Bilimleri Enstitüsü Hemşirelik Esasları Yüksek Lisans Tezi, İzmir.

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In order to reduce mistakes in drug administration to a minimum and to prevent them, one of the basic aims of nursing education must be for students to be able to use theoretical knowledge of drug administration in clinical practice, and to ensure that this becomes the desired behavior; in preparation for the duties to be taken on at the end of nursing education, nurses must be allowed to express themselves on their knowledge and experience of the administration of drugs and to review the education on drugs which they have received in their student years and identify the areas in which they see themselves as inadequate.

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In recent literature in the world, there have been many studies on nurses' knowledge of drugs and related problems.

However, in Turkey there have been few studies on this topic.



Berdot, S., Gillaizeau, F., Caruba, T., Prognon, P., Durieux, P., Sabatier, B. Drug administration errors in hospital inpatients: a systematic review. *PLoS One*, 8(6):1-11, 2013.
Hughes, R.G., Ortiz, E., Medication Errors: Why They Happen, and How They Can Be Prevented. *Am J Nurs.,* 105 (3 Suppl): 14-24, 2005.
Young, M., Gray, S.L., McCormick, W.C., Sikma, S.K., Reinhard, S., Trippett, L.J., Christlieb, C., Allen, T. Types, Prevalence, and Potential Clinical Significance of Medication Administration Errors in Assisted Living, *J Am Geriatr Soc.,* 56 (7): 1199–1205, 2008.



OBJECTIVE



This was a descriptive study with the aim of finding out student nurses' views on their levels of pharmacological knowledge.

MATERIALS and METHODS

The research population consisted of final year students of Ege University Nursing Faculty and Celal Bayar University Health College Nursing Department for the academic year 2014-2015, who had passed their pharmacology class and who had administered many drugs during the course of clinical practice in other fields of nursing.

The research sample was made up of 173 final year students who were attending these schools between February and March 2015 and who agreed to take part in the study.

Ethical aspects

- The study was conducted after obtaining written permission from the Ethics Committee for Scientific Research of Ege University Nursing Faculty.
- Participation in the study was voluntary; the purpose of the study was explained to the students and their oral approval was obtained.





Data collection forms were devised by the researchers. These were:

1. "A Personal Information Form",
2. "A Student Statement Form on Pharmacology and Drug Administration Classes"
3. "A Student Statement Form on Levels of Knowledge About Drug Administration".





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“The Personal İnformation Form” contained five questions on demographic information: the students’ age, gender, educational status, work status, and their reasons for joining the nursing profession.





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- **The student statement form on pharmacology and drug administration** classes was prepared by the researchers with the help of information from the literature.

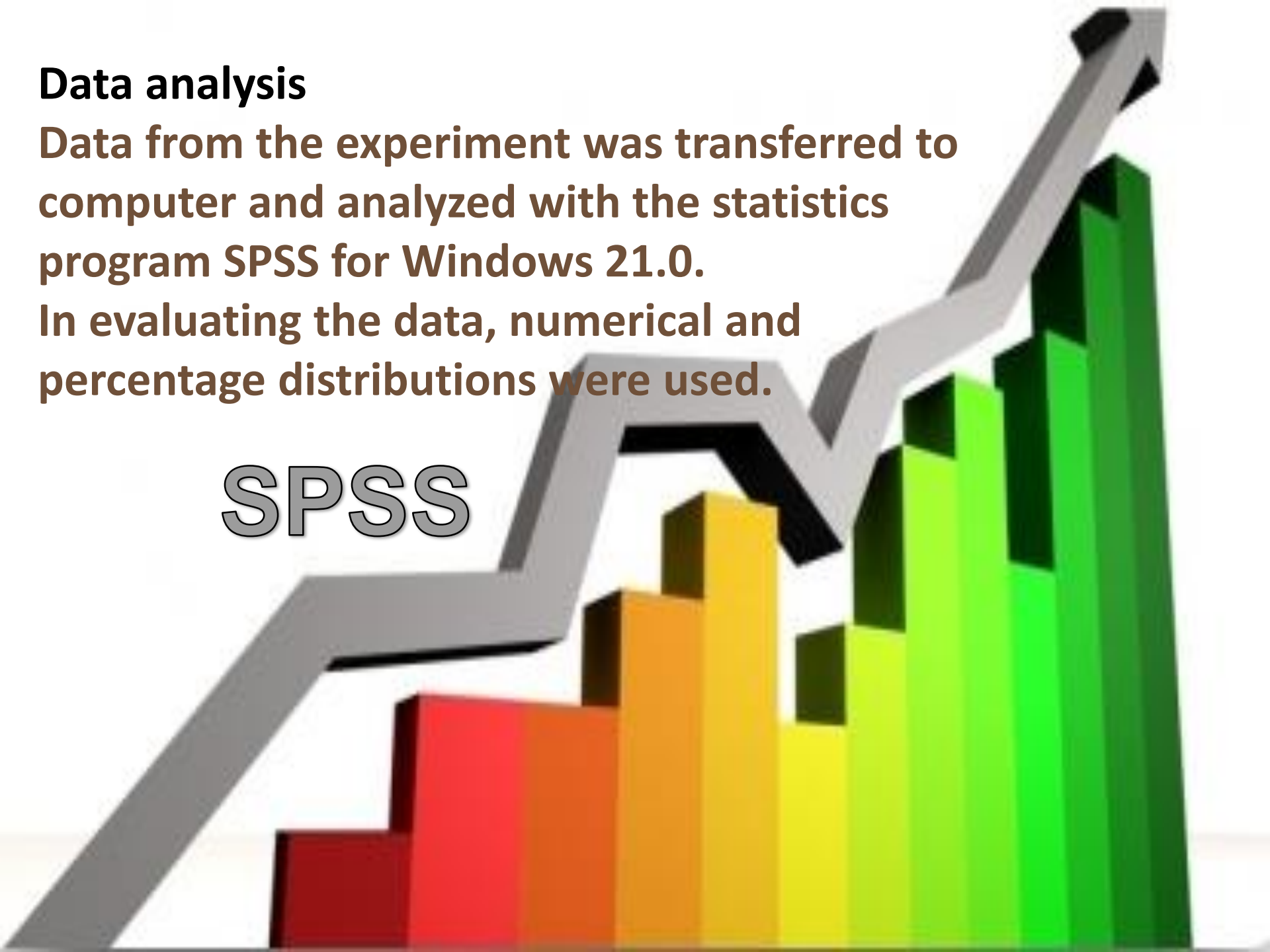
  It contained four questions on students' views on the duration and content of their lessons.

- **The student statement form on their levels of knowledge about drug administration** contained 16 questions on various basic characteristics of drug administration education during their studies.
- Responses to the statements on the forms were standardized as the statements **"Adequate"**, **"Partially adequate"** and **"Inadequate".**

Data analysis

Data from the experiment was transferred to computer and analyzed with the statistics program SPSS for Windows 21.0.

In evaluating the data, numerical and percentage distributions were used.



RESULTS

Table 1. Distribution of Identifying Characteristics of Students Participating in the Study

Identifying Information (n=173)	Number (n)	Rate (%)
Gender		
Female	145	**83.8**
Male	28	16.2
Education Status		
Normal High School	68	39.3
Health Vocational High School	12	6.9
High School Emphasizing Foreign Languages	82	**47.4**
Anatolian Teachers' High School	9	5.2
Other Vocational High School	2	1.2
Work Status		
Working in An Instutition Providing Health Services	37	21.4
Not Working in An Instutition Providing Health Services	136	**78.6**
Choice of The Nursing Profession		
Chose Nursing Willingly	144	**65.9**
Did not Choose Nursing Willingly	59	34.1
Mean Age X ± SS = 22.87 ± 1.61		

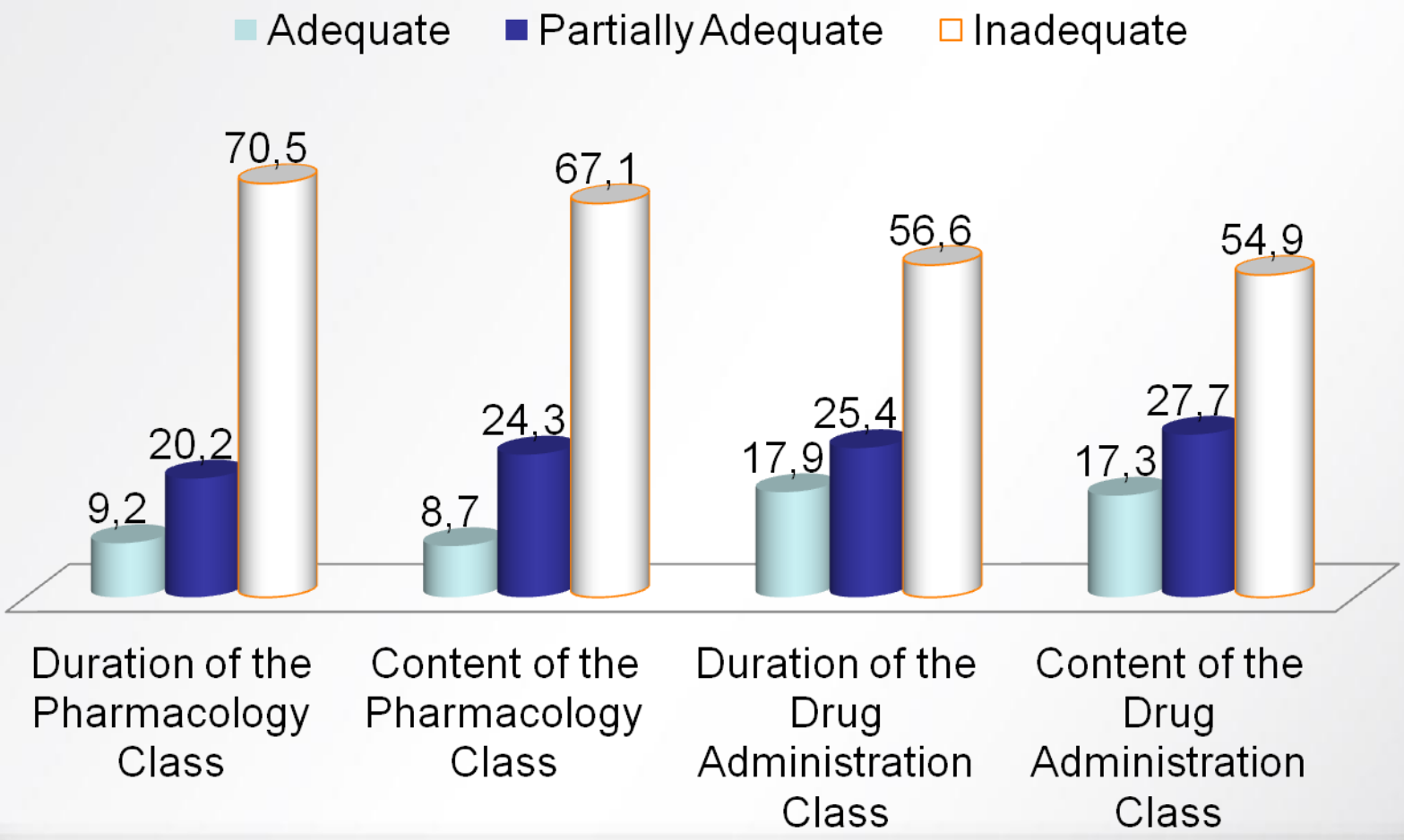
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In the schools where the research was conducted, the pharmacology class is given by the Pharmacology Department of the Medical Faculty, and basic skills in drug administration are taught in the Basic Skills and Practices in Nursing class.



The knowledge which students acquire in these courses is developed throughout their degree course in their classes on other nursing subjects as they gain experience in their clinical practice classes.

Students' Thoughts on Pharmacology and Drug Administration Classes (n=173)



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Students' Views on Their Levels of Knowledge of Drug Administration (n=173)

Variables	Adequate		Partially Adequate		Inadequate	
	n	%	n	%	n	%
General Knowledge Level of Drugs and Drug Administration	22	12.7	116	67.1	35	20.2
Knowledge Level of The Principles of Correct Administration of Drugs	66	38.2	89	51.4	18	10.4
Knowledge Level of The Storage Conditions of Drugs	50	28.9	95	54.9	28	16.2
Knowledge Level of The Preparation of Drugs	59	34.1	94	54.3	20	11.6
Knowledge Level of Calculation of Drug Doses	51	29.5	89	51.4	33	19.1
Knowledge Level of The Pathways of Drug Administration	91	**52.6**	71	41	11	6.4
Level of Ability to Apply The Principles of Correct Drug Administration During The Administration of Drugs	95	54.9	69	39.9	9	5.2

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Students' Views on Their Levels of Knowledge of Drug Administration (n=173)

Variables 	Adequate		Partially Adequate		Inadequate	
	n	%	n	%	n	%
Knowledge level of Drug-Drug Interaction	24	13.9	97	56.1	52	30.1
Knowledge Level of Drug-Food Interaction	29	16.8	97	56.1	47	27.2
Knowledge Level of The Side Effects of Drugs	31	17.9	105	60.7	37	21.4
Knowledge Level of Drug Allergies	35	20.2	93	53.8	45	26.0
Knowledge Level of Drugs on The List of High Risk Drugs	31	17.9	100	57.8	42	24.3

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Students' Views on Their Levels of Knowledge of Drug Administration (n=173)

Variables	Adequate		Partially Adequate		Inadequate	
	n	%	n	%	n	%
Knowledge Level of Absorption of Drugs and Factors Affecting into The Body	35	20.2	101	58.4	37	21.4
Knowledge Level of Distribution of Drugs and Factors Affecting into The Body	31	17.9	100	57.8	42	24.3
Knowledge Level of Metabolism Drugs and Factors Affecting into The Body	26	15	96	55.5	51	29.5
Knowledge Level of Excretion of Drugs and Factors Affecting into The Body	31	17.9	98	56.6	44	25.4

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- Finally, students think that the pharmacology education that they receive in the school is inadequate, and that they have inadequate knowledge of the administration of drugs. This is a potentially dangerous situation which could lead to mistakes in drugs.





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RECOMMENDATIONS

In the light of this study, it recommended that;



The results of various programs to extend the content and duration of pharmacology classes in the syllabus of nursing education should be evaluated,

Sources should be prepared on nursing to develop students' knowledge of pharmacology, and in this way to develop lesson content to include pharmacology knowledge which relates specifically to nursing,





The number of students should be in balance with teachers and practice areas, and training should be arranged at regular intervals on newly-appearing drugs and those which often cause problems,



Student nurses should more often make use of their skills in calculating drug doses; these target skills should be acquired throughout nursing education, and arrangements should be made to improve them,

There should be more studies on this topic, in particular observation-based behavioral evaluations.




THANKS