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ÖZGÜN ARAŞTIRMA/ ORIGINAL RESEARCH

Effect Of Peer Group Training On Popularizing of Rational Drug Use Among University Students

Akılcı İlaç Kullanımının Üniversite Öğrencileri Arasında Yaygınlaştırılmasında Akran Grubu Eğitimlerinin Etkisi

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Öz

Amaç: Dünya Sağlık Örgütü'nün tanımına göre akılcı ilaç kullanımı(AİK) ''kişilerin klinik bulgularına ve bireysel özelliklerine göre uygun ilacı, uygun süre ve dozda en düşük fiyatta ve kolayca sağlayabilmeleri ''olarak tanımlanmıştır. Üniversite öğrencileri AİK hakkında doğru tutum ve davranışı geliştirebilmeleri için eğitim almaları gerekir. Araştırmanın amacı öğrencilerin AİK konusunda bilgi sahibi olmalarını sağlamak ve edinmiş oldukları bilgiyi diğer tıp fakültesi öğrencileri ve farklı fakülte öğrencileri ile paylaşmak ve bu konuda bilgi ve tutum değişikliği oluşturmalarını sağlamaktır. **Metod:** Literatür taraması sonucu geliştirilen bir anket formu seçilen AİK Araştırma Grubu öğrencileri tarafından Ahi Evran Üniversitesi Tıp fakültesi ve Fen Edebiyat Fakültesi öğrencilerine yüz yüze görüşme yöntemi ile uygulandı. İlk anket uygulandıktan sonra 5 hafta süre ile AİK Araştırma Grubu tarafından anket uygulanan öğrencilere sunum, poster sunumu, broşür dağıtımı ve eğitici oyunlar gibi etkinlikler aracılığı ile AİK hakkında eğitici bilgiler verildi. Eğitimlerden sonra aynı anket, uygulanan kişilere bir kez daha uygulandı. Çalışmanın istatistik verileri SPSS 20.0 programı kullanılarak değerlendirildi. **Bulgular:** Çalışmaya 300 kişi dahil edilmiştir. Katılımcıların %34.8'i sıklıkla ilaç kullandıklarını belirtmişlerdir. Çalışmaya katılanların eğitim öncesi AİK hakkındaki puan ortalaması 9,86±2,72 iken eğitim sonrasındaki puan ortalaması 12,98±2,08 olarak tespit edildi. Öğrencilerin, eğitim öncesi ve sonrasında AİK ile bilgi düzeyi değerlendirilmeleri arasında istatistiksel olarak anlamlı fark olduğu saptanmıştır ($p<0,05$). **Sonuç:** Tüm bu bulgularla ilaçların akılcı kullanımının üniversite öğrencileri arasında yaygınlaştırılmasında akran eğitiminin oldukça önemli olduğu sonucuna varılabilir.

Anahtar Kelimeler: İlaç, Öğrenci, Eğitim

Abstract

Objective: According to the definition by the WHO, rational drug use (RDU) is defined as that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them. In this study, the aim was to teach the research group students the stages of scientific research, to ensure they gained knowledge about RDU and shared this knowledge

with other students in the medicine and in a different faculty, ensure changes in knowledge and attitudes about this topic. **Method:** A survey form developed after a literature search was applied by Ahi Evran University Faculty of Medicine RDU research group students to students in the Faculty of Medicine and Science and Literature during face-to-face interviews. After the first survey was applied, the students who answered the survey were informed about RDU by the Faculty of Medicine RDU Research Group through activities like presentations and educational games. The same survey was applied to the students again. The statistical data in the study was assessed using SPSS20.0 program. **Results:** The study included 300 individuals. Of the participants 34.8% stated they frequently used medicines. The mean points for RDU before training were9.86±2.72, while after training the mean points were identified as12.98±2.08. There was a statistically significant difference between the information levels about RDU before and after training ($p<0.05$). **Conclusion:** From these results it may be concluded that peer education is very imporant in popularizing rational use of medicines among students.

Keywords: Drug, Students, Education

Introductıon

Rational drug use (RDU) is a process involving a combination of many correct procedures related to the use of medicine. This process is a systematic approach encompassing elements like correct diagnosis of the patient, determination of treatment aims, choice of correct medicine that is appropriate for treatment and has proven efficacy, writing an accurate prescription for the patient, beginning treatment and informing the patient, and continuation, monitoring and assessment of treatment (1). According to the World Health Organization (WHO) definition, RDU is that “patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community”. As understood from this definition, among the aims of the RDU approach are preventing excessive and erroneous medicine use, preventing loss to the economy of the country that may result, preventing harm to the individual due to misuse of medicines and reducing antimicrobial resistance rates during treatment with medicines (1; 2). One of the most significant problems in irrational use of medicine is lack of education. However, it is clear there are many reasons apart from this due to sociocultural, administrative, economic and regulatory mechanisms (3). In Turkey it appears university students consume medicines ignorantly and mistakenly. There are many reasons for this. The main reasons for the lack of rational use of medicines may be listed as economic insufficiency, limited university opportunities, not applying to health organizations, time problems in applying to health organizations, being far from family, stress and psychological problems (4; 5). It appears that globally spending on medicine has a value close to 900 billion US dollars. This value reveals the size of the financial dimension of irrational use of medicine (6). Medicine errors are perhaps the most important of the mistakes affecting the safety of patients. Due to the lack of education on this topic for young doctors, the percentage of these errors increases every year. A range of data has shown that information-based errors can be reduced by training in the period before and after graduation (7). The WHO presented some recommendations with the aim of popularizing RDU (8). Training before and after graduation was among these recommendations. Similar recommendations were mentioned at a workshop at Refik Saydam Hygiene Center (9). RDU training has special importance to ensure that all health workers providing medicines in society have the correct attitudes and behavior. The majority of medicine errors in hospitals and in the field are made by newly graduated doctors which emphasizes the necessity to include training with the aim of increasing awareness of RDU in the early period of education for doctor candidates studying in medical faculties (10).

In light of this information, a research group was created under the auspices of the Research Group Lesson in the 1st year syllabus of the Faculty of Medicine at Ahi Evran University and a research group of 6 students were requested to complete research related to “Rational Drug Use”. Accompanied by a supervising professor, these students planned a study related to “Rational Drug Use”. This planned study was completed with the aim of increasing awareness about RDU among medical faculty students and to measure the information and attitudes about RDU among medical faculty and other faculty students through peer training about this topic and to ensure a change in the mistaken information and attitudes.

Materıal and Method

The population of this descriptive type study comprised 300 students studying at Ahi Evran University Faculty of Medicine and Ahi Evran University Faculty of Science and Literature.

Data were collected within the scope of the Research Group lesson in the 1st year of Ahi Evran University Faculty of Medicine syllabus in the spring and fall semesters of the 2016- 2017 educational year. A survey form was created after a literature search by the 6 students in the Rational Drug Use research group (5; 11). Written permission was obtained from the relevant organizations and Ahi Evran University Faculty of Medicine Clinical Research Ethics Committee to collect data and complete the research. The survey form included the sociodemographic characteristics of students and a range of questions about their behavior related to RDU. Before the survey form was applied, the aims were explained to students participating in the research and consent granted; privacy of the students was respected. The survey forms were distributed and collected during the students' breaks. The survey forms were completed during face-to-face interviews. After the first survey was applied, the Rational Drug Use research group students provided peer education through a range of educational activities like presentations, posters, brochures and brainstorming sessions about RDU. Later the survey was administered again to the same people. It took 10 minutes to complete the survey form.

Statistical Assessment

Data collected were uploaded to the SPSS 20.0 program. Descriptive data are given as percentage, number and mean. A value of $p<0.05$ was accepted as significant.

Results

The study included 300 students. When the sociodemographic characteristics of the participating students are assessed, mean age was 20.86±2.58 years (min: 17, max:42). Of participating students, 97.7% (n: 284) were students of the science and literature faculty. Of participants, 59.7% were female. The question of whether medicine was used frequently was answered "yes" by 34.8% of students (Table 1). While 88.7% of students answered the question of "on whose advice do you take medicine?" asked to assess RDU with

Table 1 Correlation of the choroidal and macular thickness between groups

Questions					
Age	Interval 17-42 years				
		Survey 1		Survey 1	
		Number	Percentage	Number	Percentage
Faculty	Faculty of Medicine	**16**	**5.3**	**16**	**5,3**
	Faculty of Science and Literature	**284**	**94.7**	**284**	**94.7**
Sex	Female	**179**	**59.7**	**179**	**59.7**
	Male	**121**	**40.3**	**121**	**40.3**
Do you use medicine frequently?	Yes	**104**	**34.8**	**104**	**34.8**
	No	**196**	**65.2**	**196**	**65.2**

"doctor" on the first test, in the second survey this rate rose to 94.3%. While 43% of students answered "yes" to the question "do you advise others about medicine?" on the first test, on the second test the rate answering this question positively fell to 13.3%. The answer "no" was given by 68% to the question "do you take medicine based on the advice of others?" on the first survey, while this rose to 88% on the second survey (Figure 1).

The question "what do you do with medicines left after treatment finishes?" was answered with the response "I give to a health organization" by 9% in the first survey, while this rate rose to 44% on the second survey. On the first survey 45% of participants answered the question "when you want to use medicine found at home, who do you ask?" with "doctor" and this rate was 61% on the second survey. On the first test 48.3% of participants marked "appropriateness for illness" in answer to the question of what to pay attention to when using medicines found at home, while this rate was 69% on the second survey (Figure 2).

The students answered "I consult a doctor" to the question of "what do you do if you are sick?" 60% of the time on the first survey, and 72.3% of the time on the second survey. The question "do you pay attention to using medicines at the right time and appropriate doses?" assessing compliance with RDU was answered with "yes" by 71.7% of the students on the first survey, while this rate rose to 88.7% on the second survey.

Again the rate of students answering "what way do you use medicines given by a doctor?" with "I use for as long as advised by the doctor or pharmacist" rose from 23% on the first survey to 42.7% on the second survey. The question "when you need any medicine how do you obtain it?" was answered with "from a pharmacy with a prescription" by 49.7%, while on the second survey this response was given by 70.3% (Table 2). In answer to the question of "if you have any food or medicine allergies, do you inform the doctor or relevant health worker?", 65.7% answered "yes" on the first survey while on the second survey this rate rose to 85% (Table 2).

The question assessing knowledge of rational antibiotic use of "do you use antibiotics without an examination?" was answered "no" by 40.3% on the first survey, while this rate rose to 79% on the second survey (Figure 3).

The final question of "do you use medicine without a doctor's examination?" was answered "no" by 63.7% on the first survey and by 75% on the second survey (Figure 4).

The mean points for RDU before training were 9.86±2.72 (min:1, max:15), while after training the mean points were identified as 12.98±2.08 (min:6, max:17). There was a statistically significant difference identified in the assessments of students' knowledge of RDU before and after training (Figure 5).

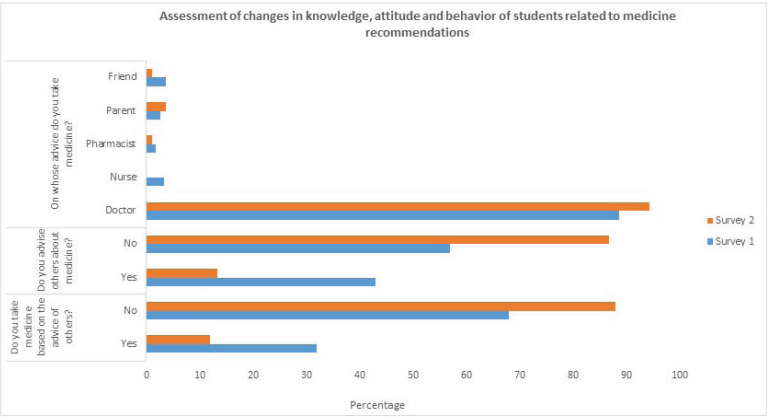

Figure 1: Assessment of changes in knowledge, attitude and behavior of students related to medicine recommendations

Table 2 Correlation of the choroidal and macular thickness between groups

Questions	Responses	Survey 1		Survey 2	
		Number	Percentage	Number	Percentage
What do you do if you are sick?	I consult a doctor	18	60	217	72.3
	I consult a pharmacist	12	4	0	0
	I consult a health worker	19	6.3	11	3.7
	I consult known neighbors and relatives	6	2	0	0
	I try herbal treatment methods	45	15	40	13.3
	I use medicines found at home	25	8.3	21	7
	Other	13	4.3	11	3.7
Do you pay attention to using medicines at the right time and appropriate doses?	Yes	215	71.7	266	88.7
	No	85	28.3	34	11.3
What way do you use medicines given by a doctor?	I use until the medicine is finished	66	22	32	10.7
	I use until my complaint resolves	153	51	133	44.3
	I use for as long as advised by the doctor or pharmacist	69	23	128	42.7
	Other	12	4	7	2.3
What do you do if you encounter side effects of medicine?	I apply to a doctor	211	70.3	222	74
	I apply to a pharmacist	32	107	28	9.3
	I apply to assistant health workers	18	6	23	7.7
	I find my own solution	25	8.3	26	8.7
	I don't do anything	14	4.7	1	3
When you need any medicine how do you obtain it?	From a pharmacy with a prescription	149	49.7	211	70.3
	From a pharmacy without a prescription	65	21.7	31	10.3
	I use ones at home	30	10	58	19.3
If you have any food or medicine allergies, do you inform the doctor or relevant health worker?	Yes	197	65.7	255	85
	No	53	17.7	5	1.7
	I inform them if they ask	50	16.7	40	13.3

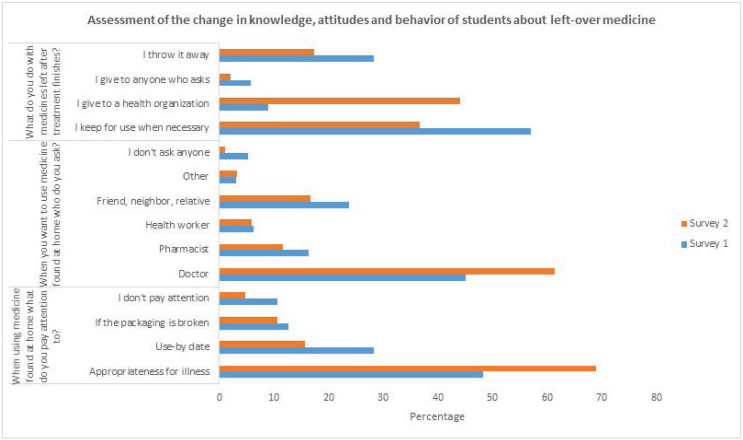

Figure 2: Assessment of the change in knowledge, attitudes and behavior of students about left-over medicine

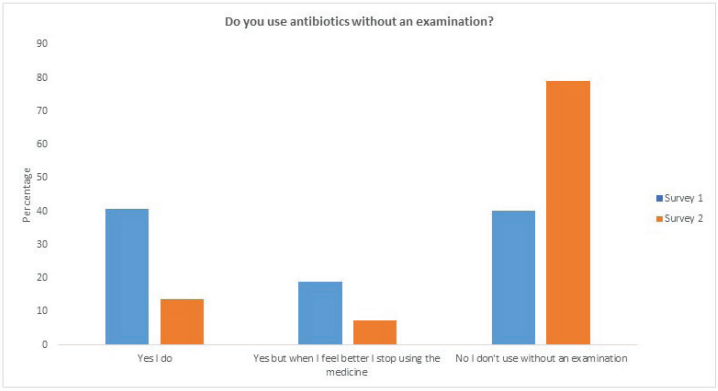

Figure 3: Use of antibiotics without an examination

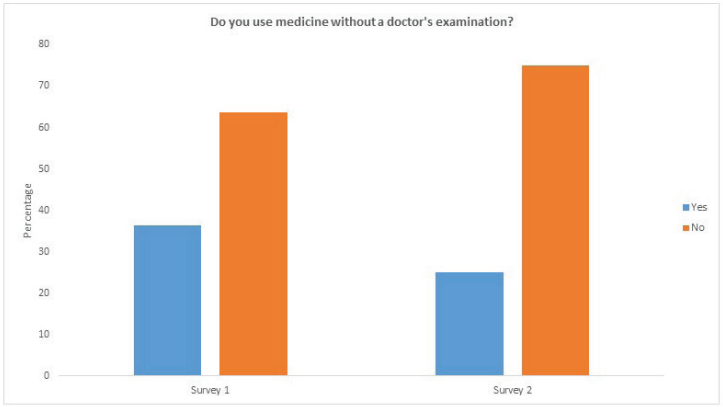

Figure 4: Medicine use without doctor examination

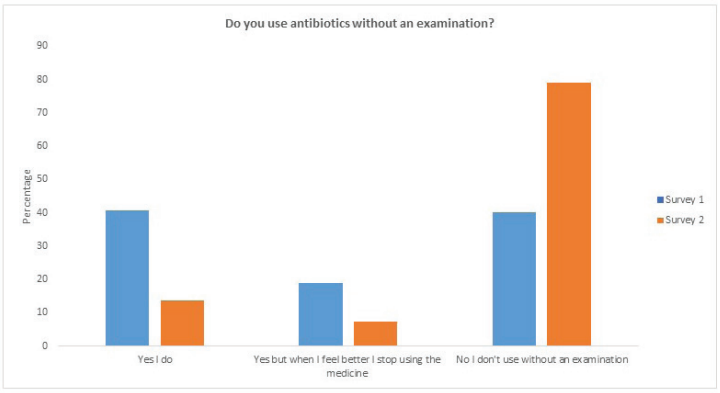

Figure 5: Mean points, (*) = p<0.05

Discussion

Of students participating in the study, 88.7% stated they took medication on the advice of doctors (Figure 1). This rate is similar to the one found in the study by Karakurt et al. of 80% (5). However, after peer education in our study, this rate increased to 94.3%. This increase shows that peer training is very effective for RDU. Peer education is based on the fact that young people interact and identify better with their peers and is an education activity developed based on the social learning concept (11). It is a very effective educational method. This educational method has been used for young people in previous studies for topics like violence, family planning and substance abuse; however there was no study encountered on the use of peer education for RDU. As a result, our study is very valuable as an example for education about RDU. In our study 43% of students stated they gave advice about medicines, while after training this rate fell to 1 3%. Again, while students took medicine based on the advice of others before training, after training the rate of those who would not take such medicine increased to 88% (Figure 1). Another study found 17% of participants used medicine based on advice from those around them, while 25.3% recommended medicine that worked for them to others (12). In our study, these values are similar. However, we see there is a reduction in those taking medicine on the advice of others after training.

In the assessment of the knowledge, attitude and behavior of students to left over medicine, 9% answered that they gave left-over medicine to “health organizations” while after training this rate increased to 44%. On the subject of medicine found at home, on the second survey 61% of students stated they got their information from doctors (Figure 2). Another study found students used medicine without prescriptions due to lack of time for 37.6%, due to the intensity of lessons for 12.4% and due to the intensity of lessons for 6.4% (13). The use of unprescribed medicine is a very serious problem in RDU. Medicines prescribed but not used and left at home is another serious problem. In fact, antibiotics are mainly found among half-finished medicine at home. Not complying with the duration of use of antibiotics leads to half-finished antibiotic packets left at home. When people get sick again, they go to the doctor for examination but rather than getting prescription medicine they use the half-finished antibiotics at home. Hence in our study in answer to the question “do you use antibiotics without examination?”, the majority of students answered “yes” on the first survey (Figure 3). A study in Izmir identified that 83% of participants used non-prescription antibiotics (14). However, after peer training in our study the majority of students stated they would not use antibiotics without a doctor’s examination. This result shows that peer training is very effective at changing knowledge, attitudes and behavior about RDU. On the first survey 63.7% of students answered “no” to the question “would you use medicine without a doctor’s examination?” while on the second survey this rate increased to 75% (Figure 4). A study by Kıran et al. identified that non-diagnosis medicine consumption was most common for groups like pain killers, multivitamin preparations and stomach medicines (15).

There was a serious increase in the percentage of responses to the question assessing compliance of

patient medicine use with RDU between the first and second survey (Table 2). Compliance is the patient's compliance with the treatment regime and active role in this process. Lack of compliance during treatment causes deficiencies and inconsistency during the treatment process (16). As a result treatment compliance is a very important topic in RDU. Before RDU peer training, 49.7% of students stated they obtained medicine from pharmacies with prescriptions. This rate increased to 70.3% after training (Table 2). A study in Ankara found that 72.8% of people with medicines at home had the medicines prescribed by a doctor and bought at a pharmacy (17). A study by Bilgili et al. (18) found that 33.8% of participants in the study had bought medicines without a prescription from pharmacies. In our study, the rate buying medicines from pharmacies without prescriptions was 21.7%, while after training this regressed to 10.3%. On the first survey, 65.7% of students stated they would inform doctors or relevant health personnel about any food or medicine allergies. On the second survey after training, this rate rose to 85% (Table 2). A study by Vural et al. (19) showed the majority of participants paid attention to situations like asking about allergies.

In our study we saw the mean points about RDU were 9.86±2.72 (min: 1, max: 15) on the first survey. However after training the mean points were identified as 12.98±2.08 (min: 6, max: 17). A statistically significant difference was identified between the knowledge levels of RDU before and after training ($p<0.05$) (Figure 5). This result show how effective our peer training related to RDU was in changing the behavior of participating students related to RDU.

Conclusıon And Recommendatıons

RDU is a very important topic related to preserving and increasing the health of society. Research in OECD countries in recent years have shown that Turkey was in 1st place with very high rates of 42.2% irrational use of antibiotics indicating that more importance should be given to RDU in our country. University students comprise an important section of society and are a group most open to learning. Medical faculty students comprise the doctors of the future. Peer group training is education completed in a friendly environment among students. Groups trained in this way have been proven to display permanent behavior changes. In light of this knowledge, to increase the knowledge related to RDU and create permanent behavior changes, peer groups of medical faculty students especially should be created in universities and training should be planned for their friends and students from different faculties. Our study proves that planning this type of training is very effective in relation to RDU.

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