ORIGINAL ARTICLE
DOI: 10.4274/tjps.galenos.2020.93709

DEVELOPMENT OF STRUCTURED COMMUNICATION AND COUNSELLING SKILLS COURSE FOR PHARMACY STUDENTS: A SIMULATION-BASED APPROACH

ECZACILIK FAKÜLTESI ÖĞRENCILERINE YÖNELIK ILETIŞIM VE DANIŞMANLIK BECERILERI EĞITIM PROGRAMI GELIŞTIRME ÇALIŞMASI: SIMÜLASYONA DAYALI BIR YAKLAŞIM

Gizem GÜLPINAR, Gülbin ÖZÇELİKAY
Department of Pharmacy Management, School of Pharmacy, Ankara University, Ankara, Turkey

Gizem GÜLPINAR
gaykac@gmail.com
+90 536 540 20 61
0000-0001-6720-1235

Abstract
Objectives: This study developed a structured communication and counselling education program to improve pharmacy students' skills. It then assessed the program objectively using standardized patients. The program aims to improve pharmacy students' communication and counselling skills based on a patient-centred approach.
Materials and Methods: The study had three stages. First, a "Pharmacist-Patient Communication and Counselling Skills" education program was developed. Second, this program was implemented for pharmacy students. Third, the program was tested on volunteer students and evaluated for effectiveness.
Results: The education program had a very large effect (Cohen's d_z=6.074) on improving students' communication and counselling skills, especially their empathy skills.
Conclusion: The education program achieved its goals. After demonstrating the program's success, a course was added to the pharmacy curriculum, and a communication skills laboratory was established in the school.
Keywords: health communication, social skills, teaching methods, professional competence, problem-based learning

Özet
Giriş ve Amaç: Bu çalışma ile eczacılık fakültesi öğrencilerinin iletişim ve danışmanlık becerilerini geliştirmeye yönelik yapılandırılmış bir eğitim programı geliştirmek amaçlanmıştır. Programın etkililiği standart hastalar kullanılarak değerlendirilmiştir. Geliştirilen eğitim programı öğrencilerin hasta-odaklı bir yaklaşımı benimsemesini hedeflemektedir.
Yöntem ve Gereçler: Çalışma üç aşamada yürütülmüştür. İlk önce "Eczacı-Hasta İletişim ve Danışmanlık" eğitim programı geliştirilmiştir. İkinci aşamada, bu eğitim programı gönüllü eczacılık fakültesi öğrencileri ile birlikte uygulanmıştır. Üçüncü aşamada, uygulanan eğitim programının etkililiği test edilmiş ve değerlendirilmiştir.
Bulgular: Eğitim programının, öğrencilerin iletişim ve danışmanlık becerilerini, özellikle empati becerilerini geliştirmede çok büyük bir etkisi (Cohen's dz = 6.074) olduğu görülmüştür.
Tartışma ve Sonuç: Eğitim programı hedeflerine ulaşmıştır. Eğitim programının başarısı kanıtlandıktan sonra eczacılık fakültesi lisans programına ilgili ders eklenmiş ve öğrencilerin dersi iletişim becerileri laboratuvarında alması sağlanmıştır.
Anahtar Sözcükler: sağlık iletişimi, sosyal beceriler, öğretim yöntemleri, mesleki yeterlilik, probleme dayalı öğrenme

1. Introduction

The role of pharmacists has evolved over time. Today, pharmacists should be able to establish effective, therapeutic relationships with patients.[1,2] When pharmacists are involved in patient care, patients have improved clinical outcomes and quality of life.[1,3-7] To provide optimal patient care, and establish a good relationship with patients, pharmacists must be able to communicate effectively.[8,9] Communication skills can be improved through both practice and education.[2]

Training in patient communication skills has increasing become a part of the pharmacy curriculum.[10,11] Pharmacy schools now regard communication a core clinical skill rather than an optional curricular component.[12] Since the content of communication skills courses can vary by culture, different guidelines can arise for what pharmacy students are expected to learn. That said, counselling patients is considered crucial in virtually all pharmacy curriculums.[13] Nevertheless, cultural differences have led to inconsistent communication-based learning outcomes and teaching modalities.[14]

Communication courses in pharmacy schools have generally covered the following: (1) key communication skills; active listening and empathy, assertiveness, (2) counselling skills; initiating the interview, establishing a trust, eliciting information, giving information and educating the patient, shared decision-making/involving the patient, and verifying patient understanding, (3) ability to handle difficult situations and develop conflict management skills, (4) ability to communicate with diverse patients; and (5) ability to employ behavior modification strategies.[13,15] While prior studies have described s the content and outcomes of courses, there remains a need to develop a structured education program that demonstrates the optimal order or combination of course content.[14]

With the increasing awareness of the value of communication skills in pharmacy practice, developing effective methods for teaching and assessing communication skills has become important for educators. The Standardized Patients (SPs) method is commonly used both as a teaching tool and a standalone assessment technique.[16] Yet, even though SPs are used as an

assessment method, there is little published research on the validity and reliability of standardized assessments of pharmacy student communication skills.[15]
Some theories explain why and how communication skills might be developed in pharmacy education. According to structured training theory, communication skills can be developed by structured training.[14] Based on that theory, this study developed a structured "Pharmacist-Patient Communication and Counselling Skills Education Program" (PPCCE) to improve pharmacy students' skills. Further, the program was objectively assessed using SPs. This work evaluates the impact of PPCCE on students, not the effect of SPs. We hypothesized that the students in this class would show improved communication and counselling skills.

2. Methods

PPCCE development involved three major phases, following Eng's[17] model for developing and evaluating health communication programs. The study has three stages. First, PPCCE was developed. Second, PPCCE was implemented to pharmacy students. Third, the program was tested on volunteer students and evaluated for effectiveness.

2.1. Ethics Statement

The Ankara University Ethics Committee on Non-Clinical Researches on Human Beings approved this study. Informed written consent was obtained from each participant.

2.2. Conceptualization and Design

2.2.1. Content

For the content of PPCCE, topics were identified based on the literature.[18-24] In addition, ACPE guidelines were reviewed regarding pharmacist-patient communication and counselling.[25] Table 1 presents the goals, objectives, and content of the sessions.
PPCCE development also used Miller's pyramid of clinical competence.[26] The program focused on practical approaches and a learner-centered format. After each theoretical lesson one practical session with SPs was added to the curriculum. Table 2 shows the content of PPCCE and the sequence of actions. Five scenarios were written adapted from real life for the sessions with SPs (Table 3). The scenarios used in pre- and post-tests were the same.

2.2.2. Evaluation of the Education Program

A mixed method was used to evaluate PPCCE. First, a quasi-experimental, pre- test and post-test design was executed. SPs were used as an assessment method for the pre- and post-tests. Additionally, SPs were used as a teaching method during PPCCE. Before PPCCE was implemented, the students interviewed with SPs as a baseline. After training, students interviewed with SPs to determine the improvement (Table 2). Each SP interview was rated by one rater (GG). To eliminate experimenter bias, all tapes were blinded in terms of whether they were pre- or post-test. A second method was employed a feedback form was administered to students. The learning experience, which is a personal insight, was not assessed in the study based on the SP interviews. The form consisted of several statements based on a five-point Likert scale and open-ended questions. The instrument was developed from the literature.[15]
Students' tapes were assessed by the trainer (GG) with using a modified version of PaCT (Patient-centered Communication Tools). Recent research has shown that PaCT is a valid, reliable, and appropriate grading instrument for assessing pharmacy students' communication skills.[27] In addition, PaCT focuses on the learning objectives the researchers had targeted, it directs the observer toward important skills, and it can be utilized for performance-improvement tracking.[28]
Modification for Turkish was conducted through a pilot study. Some PaCT items were modified to remove ambiguity and to fit the research design. Six health communication experts were asked for their opinions on the content of PaCT based on specific evaluation criteria. The expert panel also reviewed the consultations with SPs by using the instrument and concluded it was highly relevant to pharmacy-patient communication skills. Based on the

expert panel's guidance, planning the visit agenda was deemed not suitable for pharmacist-patient encounters in Turkey due to a lack of sufficient time and a suitable backdrop to negotiate with patients before the consultation. Therefore, one item was omitted from PaCT. The modified instrument has 22 items (skills) gathered under five Tools: Tool A: Establish a Connection (opening the session); Tool B: Explore and Integrate the Patient's Perspective (asking question); Tool C: Demonstrate Interest and Empathy (acknowledge emotions, respond to emotions appropriately); Tool D: Collaborate and Educate (shared decision-making, plan, educate, and complete the visit); Tool E: Communicate with Finesse (verbal and non-verbal skills, effective questioning, organization, professionalism). The students could earn up to five points for each item. The modified instrument was tested on fifth-year students (n=15) to calculate inter-rater reliability. Based on video recordings of the encounters, raters (n=2) assessed student performance using modified instrument. Rating data were fully crossed (i.e., all raters evaluated all learners on all behaviors). Ratings were analyzed using generalizability theory.[29-31] We hypothesized that rating with one rater would be as reliable as with two raters. As a result, generalizability coefficient was found 0.76 for one rater, and 0.789 for two raters. The coefficient numbers were considered as acceptable.[32] By increasing the number of raters leads to a very small increase in G coefficient, and such an increase would not be practical way in cases where it is difficult to find competent raters. Therefore, assessing the program by using PaCT with one rater would give reliable results.

2.2.3. Learning Activities

To ensure uniform teaching, a detailed training protocol was written for each session. It contained the goals and objectives of each session, preparatory materials (student, trainer, and SP guides), and scenarios. Lectures were organized using active-learning techniques to engage students (e.g. group discussion, brainstorming, video-based skills demonstration, small-group role-playing practice, interviews with SPs). Objectives and goals were set at the beginning of the lectures. The lectures then continued with interactive discussions. PaCT was introduced and defined by reviewing the instrument; students were asked to give examples demonstrating such skills during an interview. Students made suggestions, and the trainer provided supporting insight. To provide individual learning experiences, each student privately completed a single-case SP encounter at the end of each session. In practical sessions, SPs were used as a teaching technique.

Interactive exercises, pharmacy-patient consultation scenarios for role play, and appropriate readings, were included as student guides. Trainers' guides were designed based on facilitators' needs. The processes for both lectures and SP practice, along with a chronological description of steps to be taken, were explained in detail. SP guides also included the written scenario, feedback rules for SPs, topics to be addressed during feedback, and objectives of the practice session.

2.2.4. Approach to Grading

The three main grading criteria were the final examination (post-test interviews with SPs; 50%), class participation (10%), and students' efforts to apply the new skills (40%).

2.2.5. Implementation

All students enrolled in the PPCCE of the undergraduate pharmacy program at the Ankara University Faculty of Pharmacy in the first semester of 2016 were asked to participate. Of the 26 students, five declined to participate, leaving a total of 21 participants. The students were advised of the goals of the study and that the data would be confidential. Only students who did not consent to participate were excluded. The class met once a week for 14 weeks for two hours of lectures, and three hours of SP practice. PPCCE specifically targeted fifth-year students since, they had already met different types of patients during their internship and had sufficient knowledge of medicines, side effects, their proper doses, and so on. Targeting fifth-

year students also allowed students to easily be involved in real- world pharmacy settings without forgetting their acquired skills.
Thirteen SPs participated in the study; they had prior experience in role playing with the students. The SPs attended eight hours of training. They were paid 30₺ per hour during the training and when working with students. SPs were expected to practice their roles in the scenario in advance. To provide efficient learning, SPs also had to give the students constructive feedback after the consultations regarding their experiences as a patient.
The outcomes and what was expected of the students during the interviews were all described in advance. Advance notice about medications to be counseled helped students acquire the knowledge they would need during the consultation. This helped to reduce, students' anxieties so they could focus on their communication skills rather than the clinical content. Every student had five minutes to re-read the relevant information before interviewing the SPs.

3. Results

3.1. Evaluation and Assessment

Information was collected on the participants' age and gender. The ranged in age from 20 to 22 years and were mostly female (n=16, 76%).
Table 4 shows the mean scores of tools and the total scores. An increase can be observed in the students' mean scores after the program's implementation. The baseline and outcome data were compared using paired sample t-tests (Table 4). Comparisons between pre- and post-test scores indicated that the students received significantly higher scores on all tools ($p<.001$). Figure 1 shows the changes in the pre- and post-test scores.
Table 4 shows the greatest improvements were in Tool C (Demonstrate Interest and Empathy). Meanwhile, Tool E showed the least improvement (MD= 2.23), with pretest scores (M= 2.51) that were higher than those of the others.
In addition to pre- and posttest scores, we calculated the Effect Sizes (ES) for both variables to estimate the relevance of possible effects of the program. We used the Cohen's dz formula[33] as follows:
Cohen's $dz=t\sqrt{n}$
The ES for the communication and counselling skills was 6.074; in terms of Cohen's dz, this should be considered as a very large effect. Combining the tests for significance, we may firmly conclude that the education program had an effect on the students' skills development.
The answers obtained from the feedback form supported the value of the PPCCE for improving students' communication skills. Eighteen of the 21 participants filled out the form (response rate: 86%). Most students enjoyed the PPCCE and believed it improved their problem solving skills (Table 5) [15]. However, students also expressed they wished they could have had more interviews during the PPCCE. Moreover, they felt it was too late to learn these skills during fifth-year and that the education program should be earlier in the curriculum.
Some SPs also commented on the education program during the laboratory practices. They said they were not used to seeing a pharmacists behave this way in real life. They expressed pharmacists tend to be more interested in paperwork and that patients communicate more with technicians than with pharmacists. The SPs said they hoped this education program could help produce pharmacists who were well-educated and empathic.

4. Discussion

PPCCE had a very large effect on improving the communication and counselling skills of students. At the end of the course, development was seen in all five tools, though the most development was seen in Tool C (Interest and Empathy). When designing the PPCCE the basic philosophy was determined on the basis of patient-centeredness. Mead and Bower described patient-centeredness as "the physician tries to enter the patient's world, to see the illness through the patient's eyes".[34-33] In this way, patients play a more active role in the treatment process, and respecting their needs is crucial. Hence, the main theme in all sessions

was to understand and care for the patients' needs. The improvement in Tool C could have resulted from the concept of patient-centeredness being adopted during the development of the PPCCE.

The most challenging part of the PPCCE was Tool D (Collaborate and Educate). Students mentioned difficulties performing these skills, and they regarded the skills in Tool D as complex. Figure 1 shows the low development for Tool D. Surprisingly, the students were not aware that providing a plan and contributing to patients' adherence are among pharmacists' responsibility. This could have to do with Turkish pharmacists paying more attention to business issues and paperwork than to counselling patients. In a recent study, Turkish pharmacists expressed their feelings about the relationship between pharmacist and patient. They reported that the pressure to sell the medications to keep their businesses alive caused problems with patient communication; they felt they were not performing their roles as consultants.[35, 36] Pharmacists in Turkey thus experience conflicts between their roles as business people and as healthcare advisors.[37] While the low development in Tool D could be attributable to this cultural characteristic, it might also have to do with role models. According to Rogers, empathy can be learned from empathic persons.[38] Students intern in community pharmacies and observe the pharmacists' consultations; thus, the negative informal messages students receive might explain the results for Tool D. Since Tool D is considered complex, more practice may be required to improve students' skills.[27]

As shown in Figure 1, students had the highest pre-test scores for Tool E. It can be said, therefore, that prior to PPCCE, students were strong in the areas of verbal skills, non-verbal skills, effective questioning, organization, and professionalism. The high pre-test scores could be attributable to students' awareness of being watched and scored during the interviews and their corresponding efforts to show professionalism. Such unnatural attitudes highlight the insufficiencies of role-playing technique. Many studies have suggested that the role-play cannot mirror nature.[39, 40]

Communicating effectively with patients while projecting with a professional image is considered a distinct and important professional skill.[41] In the free comments, students expressed different opinions on how to behave as professionals during the opening session (Tool A). Figure 1 shows that PPCCE had an impact on developing a professional attitude at the beginning of the interview. Using in-class activities, such as discussions with the trainer and the other students, seemed effective and could have contributed to this development. The role of trainers is to help students gain the proper skills using their own insight.[42] The students participated actively and took at least some responsibility for their own learning.[43] Additionally, recognizing exemplars of professionalism through discussion and observation could help to provide better example.[44]

5. Study Limitations

Despite the demonstrated improvement in communication and counselling skills, as well as the positive feedback from students, there were some limitations. First, the quasi-experimental designed could have made it difficult to clearly ascertain the causes of improvements in skills. In future studies, control groups and some comparison groups including different teaching methods could be employed to determine the elements providing the improvements. Second, to explore the validity and reliability of PaCT and the feedback form in Turkish, detailed and comprehensive studies should be designed to prove the psychometrics properties. Third, as the education program was being implemented, the students continued their internships at community pharmacies which, as discussed above, could have influenced them. A fourth limitation concerns the feedback from the SPs. Some students said the feedback from the SPs were unnatural. Since the SPs in present study had been working for as SPs for many years, routinization may have developed. It can be suggested, therefore, that changing SPs or educating them periodically might be necessary to contribute to outcomes. A fifth important

limitation concerns the total length of the education program. Longitudinal education programs that aim to improve skills or attitudes should be designed to cover more than one semester. A spiral curriculum might be a better way to develop such skills. Finally, it should be noted that the results may not be generalizable to other universities or students.
After the study was completed, PPCCE was added to the undergraduate curriculum of the Faculty of Pharmacy at Ankara University. This will help to guarantee the acquisition of such skills during undergraduate education for all students.

6. Conclusion

The communication and counselling skills education program met its goals of introducing students to the application of these skills with patients. In the future, the authors plan to develop this education program for greater effectiveness. Expanding the SP encounters and feedback sessions should be considered based on the students' evaluations. Peer assessment will be used for students to observe each other's performance and to improve feedback skills. In addition to adding this course to its curriculum, the School of Pharmacy, Ankara University, has established a communication skills laboratory within the school.

Acknowledgements

The work was funded by the Scientific Research Project Coordination of the Ankara University as a part of postgraduate thesis project, Turkey [grant number 16L0237003]. We are grateful to all the participant students. Further, we are grateful to a number of people who assisted us in various ways: Prof. Claire Anderson, Sema Yüce, Prof. Neyyire Yasemin Yalım, Neşe Güler, Uğur Peker, İpek Gönüllü, Mehmet Barlas Uzun. We are also grateful to the Ankara University School of Medicine, standardized patients and the staff for their encouragement of the research project.

REFERENCES

1. Hastings JK, West DS. Comparison of outcomes between two laboratory techniques in a pharmacy communication course. Am J Pharm Educ. 2003;67(4):101.
2. Kimberlin CL. Communicating with patients: Skills assessment in us colleges of pharmacy. Am J Pharm. Educ. 2006;70(3): 67.
3. Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. Am J Hosp Pharm. 1990;47(3): 533-543.
4. Crockett J, Taylor S, Grabham A, Stanford P. Patient outcomes following an intervention involving community pharmacists in the management of depression. Aust J Rural Health 2006;14(6):263-269.
5. Cruthirds DL, Hughes PJ, Weaver S. Value of pharmacy services to the healthcare system: an interdisciplinary assessment. Int J Pharm Pract. 2013;21(1):38-45.
6. Tsuyuki RT, Al Hamarneh YN, Jones CA, Hemmelgarn BR. The Effectiveness of Pharmacist Interventions on Cardiovascular Risk: The Multicenter Randomized Controlled RxEACH Trial. J Am Coll Cardiol. 2016;67(24):2846-2854.
7. Varma S, McElnay JC, Hughes CM, Passmore AP, Varma M. Pharmaceutical care of patients with congestive heart failure: interventions and outcomes. Pharmacotherapy 1999;19(7):860-869.
8. McDonough RP, Bennettb MS. Improving communication skills of pharmacy students through effective precepting. Am J Pharm Educ. 2006;70(3):58.

9. Svensberg K, Sporrong SK, Lupattelli A, Olsson E, Wallman A, Björnsdottir I. Nordic pharmacy students' opinions of their patient communication skills training. Am J Pharm Educ. 2018;82(2):6208.
10. Cleland J, Bailey K, McLachlan S, McVey L, Edwards R. Supplementary pharmacist prescribers' views about communication skills teaching and learning, and applying these new skills in practice, Int J Pharm Pract. 2007;15(2):101-104.
11. Svensberg K, Kalvemark Sporrong S, Hakonsen H, Toverud EL. 'Because of the circumstances, we cannot develop our role': Norwegian community pharmacists' perceived responsibility in role development, Int J Pharm Pract. 2015;23(4):256-265.
12. Adrian JAL, Zeszotarski P, Ma C. Developing Pharmacy Student Communication Skills through Role-Playing and Active Learning. Am J Pharm Educ. 2015;79(5):44.
13. Wallman A, Vaudan C, Sporrong SK. Communications training in pharmacy education, 1995-2010. Am J Pharm Educ. 2013;77(2):36.
14. Kerr A, Strawbridge J, Kelleher C, Mertens F, Pype P, Deveugele M, Pawlikowska T. How can pharmacists develop patient-pharmacist communication skills? A realist review protocol, Systematic Reviews 2017;6(1):14.
15. Rickles NM, Tieu P, Myers L, Galal S, Chung V. The impact of a standardized patient program on student learning of communication skills. Am J Pharm Educ. 2009;73(1):4.
16. Mesquita AR, Lyra DP, Jr., Brito GC, Balisa-Rocha BJ, Aguiar PM, de Almeida Neto AC. Developing communication skills in pharmacy: a systematic review of the use of simulated patient methods. Patient Educ Couns. 2010;78(2):143-148.
17. Eng TR, Gustafson DH, Henderson J, Jimison H, Patrick K. Introduction to Evaluation of Interactive Health Communication Applications. Am J Prev Med. 1999;16(1):10-15.
18. Beardsley RS, Kimberlin CL, Tindall WN. Communication Skills in Pharmacy Practice: A Practical Guide for Students and Practitioners (5th ed). USA; Lippincott Williams & Wilkins; 2008.
19. Desmond J, Copeland LR. Communication with Today's Patient. Ankara; Elif Publishing; 2010.
20. Gordon T, Edwards WS. Making the Patient Your Partner: Communication Skills for Doctors and Other Caregivers (1st ed). Istanbul; Profil Publishing; 2014.
21. Kurtz S, Silverman J, Draper J. Teaching and Learning Communication Skills in Medicine (2nd ed). UK; Radcliffe Publishing Ltd.; 2005.
22. Silverman J, Kurtz S, Draper J. Skills for Communicating with Patients, UK: Radcliff Publishing Ltd.; 2005.
23. Rosenberg MB. Nonviolent Communication: A Language of Life (2nd ed). Istanbul; Remzi Kitabevi; 2011.
24. Bosworth H. Medication Adherence. In: Bosworth H, edn. Improving Patient Treatment Adherence: A Clinician's Guide. New York; Springer Science+Business Media; 2010.
25. Accreditation Council for Pharmacy Education. Accreditation standards and guidelines for the professional program in pharmacy leading to the doctor of pharmacy degree: The Accreditation Council for Pharmacy Education 2015.

https://www.acpe-accredit.org/pdf/GuidanceforStandards2016FINAL.pdf. Accessed January, 14 2019.
26. Schuwirth LW, Vleuten Pvd. The use of clinical simulations in assessment. Med Educ. 2003;37(Suppl.1):65-71.
27. Grice GR, Gattas NM, Prosser T, Voorhees M, Kebodeaux C, Tiemeier A, Berry TM, Wilson AG, Mann J, Juang P. Design and validation of Patient-Centered Communication Tools (PaCT) to measure students' communication skills. Am J Pharm Educ. 2017;81(8):5927.
28. Shumway JM, Harden RM. Association for Medical Education in Europe, AMEE Guide No. 25: The assessment of learning outcomes for the competent and reflective physician. Med Teach. 2003;25(6):569-584.
29. Trejo-Mejía JA, Sánchez-Mendiola M, Méndez-Ramírez I, Martínez-González A. Reliability analysis of the objective structured clinical examination using generalizability theory. Med Educ Online 2016;21(1).
30. Güler N, Eroğlu Y, Akbaba S. Reliability of criterion-dependent measurement tools according to Generalizability Theory: Application in the case of eating skills. Abant İzzet Baysal University J Fac Educ. 2014;14(2):217-232.
31. Güler N, Uyanık GK, Teker GT. Generalizability Theory. Ankara; Pegem Academy; 2012.
32. Aran ÖC, Güler N, Senemoğlu N. An evaluation of the rubric used in determining students' levels of disciplined mind in terms of Generalizability Theory. Dumlupınar University J Soc Sci. 2014;42(42):165-172.
33. Lakens, D. Calculating and reporting effect sizes to facilitate cumulative science: a practical primer for t-tests and ANOVAs. Frontiers in Psychology. 2013;4:1-12.
34. Mead N, Bower P. Patient-centredness: A conceptual framework and review of the empirical literatures. Soc Sci Med. 2000;51(7):1087-1110.
35. Gülpınar G, Uzun MB, Yalım YY. The effects of Social Security Institution implementations on community pharmacists' job satisfaction: a qualitative study. TJOB. 2015;2(1):36-46.
36. Calgan Z, Aslan D, Yegenoglu S. Community pharmacists' burnout levels and related factors: an example from Turkey. Int J Clin Pharm. 2011;33:92-100.
37. Cavaco AM, Sozen-Sahne B, Ulutas-Deniz E, Yegenoglu S. Self-medication and non-prescription drug counseling: Illustrating profession uncertainty within Turkish pharmacy practice. Res Social Adm Pharm. 2018;14(8):718-726.
38. 40. Rogers CR. Empathic: An unappreciated way of being. Couns Psychol. 1975;5(2):2-10.
39. de la Croix A, Skelton J. The reality of role-play: interruptions and amount of talk in simulated consultations. Med Educ. 2009;43:695-703.
40. Orr KK. Integrating virtual patients into a self-care course. Am J Pharm Educ. 2007;71:30.
41. Schafheutle EI, Hassell K, Ashcroft DM, Hall J, Harrison S. How do pharmacy students learn professionalism?. Int J Pharm Pract. 2012;20(2):118-128.
42. Sullivan C, Ellison SR, Quaintance J, Arnold L, Godrey P. Development of a communication curriculum for emergency medicine residents, Teach Learn Med. 2009;21(4):327-333.
43. Mesquita AR, Souza WM, Boaventura TC, Barros IMC, Antoniolli AR, Silva WB, Lyra Júnior DP. The effect of active learning methodologies on the teaching of pharmaceutical care in a Brazilian pharmacy faculty. PLoS One. 2015;10(5):e0123141.

44. Roth MT, Zlatic TD. Development of student professionalism. Pharmacotherapy. 2009;29(6):749-756.

Table 1. The Objectives of the Education Program
Students will be able to:
Distinguish the different barriers of interpersonal communication between pharmacists, patients, and other health professionals.
Use active listening skills, elicit the needs, requests, and capabilities of the patient and provide information using effective non-verbal, explanatory, questioning skills (reflection, picking up patient's cues, paraphrasing, summarizing, open, closed, focused questioning etc.).
Encourage the patient to express own ideas, concerns, expectations and feelings and accepts legitimacy of patient's views and feelings.
Adapt own communication to the level of understanding and language of the patient, avoiding jargon.
Show awareness of the non-verbal communication of the patient (e.g. eye contact, gestures, facial expressions, posture) and respond to them appropriately.
Involve patient in decision making and adapt the plan/intervention to patient's need and capability.
Organize a conversation from beginning to end with regard to structure.
Display appropriate professionalism.
Give information to the patient (oral and written) in a timely, comprehensive and meaningful manner.
Use education methods appropriate for patient and give the appropriate amount of information.
Verify patient understanding of new information provided and suggested changes to be initiated.
Recognize difficult situations and communication challenges (e.g. crying, strong emotional

feelings, interruptions, aggression, anger, anxiety, embarrassing or sensitive issues) and manage the challenging patient sensitively and constructively.
Use adequate strategies to solve conflicts.
Discuss with the patient for follow-up interview.
Promote adherence to appropriate therapy.

Table 2. The Description of the Education Program with Sequence of Actions

Component		Content	Domain	The Addressed Tools in PaCT	Duration
	Pretest	Standardized patient consultation interviews for all students, evaluated by one independent observer using an instrument, without feedback given.		Whole PaCT	3 hrs/1 week
Session 1	Lecture 1 by the trainer	Description of effective communication skills, fundamental techniques for the process of key communication in everyday life, such as behaving assertively, showing empathy to others, listening actively etc.	Cognitive affective "knows how"	C and E	4 hrs/2 weeks
	Interview 1 with SP	Role-play for one scenario by students with a SP. Feedback facilitated by trainer.	Cognitive and Affective psychomotor "shows how"	C and E	4 hrs/1 week
Session 2	Lecture 2 by the trainer	Description of effective pharmacist-patient communication dimensions and fundamental techniques for the process of pharmacist communication, such as avoiding the use of medical and	Cognitive affective "knows how"	A and D	6 hrs/3 weeks

		pharmaceutical jargon, educating the patient, shared decision making with patient and responding to a patient's concerns, organizing the interview with regard to structure.			
	Interview 2 with SP	Role-play for one scenario by students with a SP. Feedback facilitated by trainer.	Cognitive and Affective psychomotor "shows how"	A and D	4 hrs/1 week
Session 3	Lecture 3 by the trainer	Description of causes of conflict, expressing conflict management strategies, and steps in problem solving, such as identifying all possible solutions, shared decision-making, caring all parties to agreeing on an acceptable plan.	Cognitive affective "knows how"	B	4 hrs/2 weeks
	Interview 3 with SP	Role-play for one scenario by students with a SP. Feedback facilitated by trainer.	Cognitive and Affective psychomotor "shows how"	B	4 hrs/1 week
Session 4	Lecture 4 by the trainer	Description of adherence, causes of non-adherence, and patient follow up strategies for a pharmacist, such as understanding the patient's reluctance to use medicine or willingness to change a behavior.	Cognitive affective "knows how"	D	2 hrs/1 week
	Interview 4 with SP	Role-play for one scenario by students with a SP. Feedback facilitated by trainer.	Cognitive and Affective psychomotor "shows how"	D	4 hrs/1 week
	Posttest	Standardized patient consultation interviews for all students, evaluated by one independent observer using a instrument, without feedback given.		Whole PaCT	3 hrs/1 week

Table 3. The content and the objectives of the scenarios used in the education program.

Scenarios	Content	Objectives
Interview 1 with SP-Scenario 1	A patient with Type-II Diabetes who had to make himself insulin injection fears from making injection to himself. He requests from pharmacists to make the insulin injection every day instead of himself.	Being assertive, using effective questions, displaying suitable body language, demonstrating empathy, and listening actively to the patient.
Interview 2 with SP-Scenario 2	A patient with osteoporosis comes to pharmacy. She had some concerns about the side-effects of the drugs when hearing	Creating rapport, integrating the patient's perspective, using effective questions,

	from pharmacist.	organizing the consultation, educating the patient, and completing the visit.
Interview 3 with SP-Scenario 3	An insistent patient wanting from pharmacist to persuade her daughter to use a food supplement although she do not want to.	Recognizing the difficult situations and communication challenges and managing the challenging patient sensitively and constructively.
Interview 4 with SP-Scenario 4	The patient with osteoporosis who has been come to the pharmacist a few weeks before (In scenario 2). She have some difficulties to use the medicine and decided to give up using.	Promoting adherence to appropriate therapy. Involving the patient in decision making and adapt the plan/intervention to patient's need and capability.

Table 4. Comparison of pharmacy students' scores on various tools of the modified version of PaCT at pretest and posttest (n=21)

Tools of PaCT	M (SD) (pre)	M (SD) (post)	MD (SD) (pre-post)	t-test*	*p*-value
A (Establish a Connection	1.57 (0.53)	4.63 (0.35)	3.06 (0.56)	24.9	<.001
B (Explore and Integrate Patient's Perspective)	1.29 (0.54)	4.69 (0.60)	3.40 (0.68)	4.1	<.001
C (Demonstrate Interest	1.07 (0.24)	4.74 (0.41)	3.67 (0.43)	4.1	<.001

and Empathy)					
D (Collaborate and Educate)	1.66 (0.58)	4.52 (0.46)	2.86 (0.57)	23.0	<.001
E (Communicate with Finesse)	2.51 (0.49)	4.74 (0.37)	2.23 (0.56)	18.3	<.001
T (Total)	1.87 (0.41)	4.65 (0.35)	2.78 (0.46)	27.8	<.001

* For Tool B and Tool C Wilcoxon wilcoxon signed rank test, for Tool A, C, D, E and for total score paired sample t-test were conducted.

M: Mean

SD: Standard Deviation

Table 5. The Students' Answers Obtained from Feedback Form	
Item	M (SD)
The SPs were the key component of the education program.	4.7 (0.4)
I was happy to get a feedback from the SPs because the SPs' feedbacks	4.6 (0.6)

contributed to my improvement.	
I was happy to get a feedback from the trainer because the trainers' feedbacks contributed to my improvement.	4.9 (0.3)
The themes of the scenarios reflected what was covered in the lectures.	4.7 (0.6)
The practices with SPs improved my problem solving skills.	4.7 (0.5)
I enjoyed the practices with SPs.	4.8 (0.4)
Practicing with SPs played an essential role in preparing me for 'real-life' counselling situations.	4.7 (0.5)
I am thinking that my communication and counselling skills improved at the end of the education program.	4.9 (0.3)
I felt confident to use my theoretical knowledge during the laboratory practices with SPs.	4.3 (0.7)
I enjoyed working in a small group sessions.	4.8 (0.4)
I am of the opinion that the effectiveness of the education program belongs to the performance of the trainer most.	3.2 (0.8)
I wish I could practice with SPs more during the education program.	3.1 (0.5)
I wish I could take this course earlier in my pharmacy education.	4.6 (0.8)

Figure 1. The changes of the pre and post-test scores