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The effectiveness of a preclinical reflectional, actional and transformative Interprofessional Collaboration and Communication program prepared with interdisiciplinary collaboration: A pilot study

Disiplinlerarası İşbirliği ile Hazırlanmış Klinik öncesi Reflektif, Aksiyonel ve Transformatif Meslekler Arası İşbirliği ve İletişim Programının Etkililiği: Pilot çalışma

Ozlem Midik[1] (ORCID: 0000-0002-0151-7461)

Hatice Kumcagiz[2]ORCID: 0000-0002-0165-3535)

Aynur Aslan[3] (ORCID: 0000-0001-8800-4433)

1. Ondokuz Mayıs University, Faculty of Medicine
2- Ondokuz Mayıs University, Faculty of Education
3- Ondokuz Mayıs University, Faculty of Health Sciences
Corresponding Author: Ozlem Midik., E-mail: dromidik@gmail.com

Abstract

Background: While an increased workload and interaction between disciplines and professions may be expected within this complex environment, fewer and more superficial relations have been established. The university system known as 'multiversity' promises interprofessional interaction as a competence for medical students. This article presents the preclinical program called interprofessional colloboration and communication designed and applied by us, together with its early outcomes. The basic and long-term goal of the program is to create cultural change in learning and practice in the university context.

Methods: The course was designed with a transformative approach. Qualitative data obtained from the Professional Identity Scale and the Readiness for Interprofessional Learning Scale and from portfolios were used within a pretest-postest experimental design to assess student and program success/satisfaction.

Results: This study was conducted among first-year medical students (n = 43) participating in a two-week "Interprofessional Colloboration and Communication" elective course. Educational methods involving active participation on the part of students, such as clinical observations, case studies, brainstorming, and self-assessment. Research shows a significant difference between total Professional Identity Scale pretest (27.02±3.09) and post-test (29.28±2.65) scores (t= -4.58, p= 0.00).and a significant different between pretest (70.88±10.1) and post-test (78.19±6.8) total RILS scores (p= 0.00). A change between pre- and post-program attitudes regarding internship and prejudices concerning health personnel and personal and professional experience was found.

Conclusions: At the end of the program, students' professional identity perceptions increased, while we determined changes in pre-and post-program preconceptions regarding the internship period and health personnel, and in awareness concerning personal and professional life. Feedback concerning students' clinical observations was shared with the hospital administration and represented a trigger for culture change.

Anahtar sözcükler:

mesleklerarası, iletişim, işbirliği, tıp

Keywords:
interprofessional, communication, collaboration, medicine

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Özet

Amaç: Karmaşık sağlık hizmeti ortamında iş yükü ile birlikte disiplinlerin ve mesleklerin birbirleri ile etkileşiminin artması beklenirken daha az ve yüzeysel ilişkiler kurulduğu görülmektedir.

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‘Çok-çeşitlilik' gösteren üniversite sistemi tıp öğrencileri için meslekleraras etkileşimi bir yetkinlik olarak tanımlamaktadır. Bu çalışma tasarladığımız klinik öncesi meslekleraras iletişim ve işbirliği programının uygulanması ve erken sonuçlarını sunmayı amaçlamaktadır. Programın temel ve uzak hedefi üniversite bağlamında öğrenme ve uygulamada kültürel değişim yaratmaktır.

Gereç ve Yöntem: Kurs, dönüştürücü bir yaklaşımla tasarlanmıştır. Öğrenci ve program başarı / memnuniyetini değerlendirmeye yönelik öntest- sontest deneysel tasarım içerisinde Mesleki Kimlik Ölçeği ve Meslekleraras Öğrenmeye Yönelik Hazır Bulunuşluk ölçekleri ile portfolyodan elde edilen niteliksel veriler kullanılmıştır.

Bulgular: Bu çalışma 2017–2018 öğretim yılında Ondokuz Mayıs Üniversitesi Tıp Fakültesi programında iki haftalık ‘Meslekleraras İletişim ve Etkileşim’seçmeli kursuna katılan 43 birinci sınıf öğrencisi ile yürütülmüştür. Programda klinik gözlemler, vaka çalışmaları, beyin fırtınası, özdeğerlendirme gibi öğrencilerin aktif katılımını gerektiren yöntemlere yer verilmiştir. Çalışmada Mesleki Kimlik Ölçeği öntest (27.02 ± 3.09)-sontest (29.28 ± 2.65) puanları (t = -4.58, p = 0.00) ile; RILS ön test (70,88 ± 10,1) -sontest (78,19 ± 6,8) puanları arasında (p = 0,00) anlamlı fark saptanmıştır. Öğrencilerin sağlık personeline yönelik program öncesi ve sonrası tutumları ile kişisel ve mesleki deneyime ilişkin önyargılar arasında değişiklik bulunmuştur.

Sonuç: Meslekleraras İletişim ve Etkileşim seçmeli programı sonunda öğrencilerin mesleki kimlik algısının yükseldiği, program öncesi ve sonrası internlük dönemi ve sağlık personeli ile ilgili önyargılarında, kişisel ve mesleki yaşantıya ilişkin farkındalıklarında değişim olduğu tespit edilmiştir. Öğrencilerin klinik gözlemlerine ilişkin geribildirimler eğitim ve hastane yönetim ile paylaşılmış, kültür değişimi için bir başlatıcı olmuştur.

Introduction

While the university system known as ‘multiversity’ promises interprofessional interaction as a competence for medical students (1,2,3,4) it does not (or cannot) create the requisite opportunities for the acquisition of that competence. The hidden curriculum exposes students to unexpected adverse experiences and contributes to the development of cynicism (5,6,7). Educators have proposed various strategies and methods for producing physicians competent in the sphere of interprofessional collaboration and communication. Case studies and simulation are reported to create significant differences (8,9,10). In addition, a spiral curriculum design has been recommended, suggesting the importance of students becoming acquainted with the subject from the early period as much as the design of the program in the acquisition of such competence (8, 10, 11,12).

Although interns are paid during this term, since they are still training and their education has not yet been completed and being used as a labor force results in unhappiness and disappointment. Interns distressed by such practices exhibit verbal and behavioral criticism. Medical students in the internship stage report being at the bottom of the hierarchy and being insufficiently valued, and also complain about interactions with health professionals such as assistant physicians, nurses, and health carers (13,14, 15).

It is essential to draw medical students’ attention to interprofessional collaboration and communication, to create awareness, and to develop a conscious change in behavior. Indeed, we think that all health workers, not just interns, need to be spurred into action with this consciousness and behavior.

The following plan of action was established within that context: 1.Calculation of workload for interns, 2. Planning interns’ work responsibility definitions within a learning framework, 3.Creating awareness among health professionals and interns, 4. Structuring a

training program for medical students; the constitution of programs for the preclinical (1st year), clinical (4th year internship adapation week), and internship (withtin the adaptation week).

The subjective nature of knowledge, critical reflections and interpretation, chaos and complexity theories and novel paradigms have made the revision of education programs essential. There is a need for more humane, realistic/parallel-to-life programs that better prepare learners for a dynamic and uncertain future. Programs must be designed that provide increased awareness and depth in the contect of personality development and that deal with constantly changing relations. Educational programs based on such concepts as critical reflection on the ethical dimension, democratic society, social justice and advocacy must be equipped with content useful content, particularly in enabling individuals experiencing internal confusion to cope with situations (16,17). Based on these propoitions and within the plan of action described above, the Ondokuz Mayıs University Medical Faculty commenced calculating the intern workload and planning work-duty descriptions within the learning framework, together with work on awareness of these issues, which is still continuing today.

Based on the idea of being able to create awareness in the early period, a two-week elective Interprofessional Collaboration and Communication Program aimed at first-year preclinical students was designed and applied. The basic and long-term aim of this program is to create cultural change in learning and practice in a university setting. We think that this program will be an opportunity to achieve the aim of raising the awareness of health professionals and interns. We also think that this program, applied for the first time in medical faculties in Turkey, is important in terms of the application time, the educational methods used, multiprofessional instructors, and representing a guide in the fiels of medical and health education.

Material and Methods

Study Aims: This article presents the preclinical Interprofessional Colloboration and Communication Program designed and applied by us and its early outcomes. The research questions were defined as follows:

1. Did any difference occur between students' professional identity and readiness for interprofessional learning before and after the program?
2. Was there any change in students' opinions and perceptions in terms of interprofessional collaboration and communication before and after the program?
3. What were students' clinical observation evaluations? What should be the faculty's points of change in terms of interprofessional collaboration and communication?

Study participants: This study was conducted among first-year medical students (n = 43) participating in a two-week "Interprofessional Colloboration and Communication" elective course at the Medical Faculty in the 2017–2018 academic year.

Course Description: The course was designed with a transformative approach. Rather than cultural transmission, this program contains high-tension situations, conflicting interpretations and alternatives for the individual to select. Instead of pre-prepared, predictable and definite targets for students, it involves a variety of aims for them to strive toward. Interactional and reflectional methods were included in the program, in which new structures can be realized as a result of tension, dilemma, shock and chaos. The program, prepared with a transformative approach, is as transformative for the school as it is for the student. Sharing students' evaluations within the scope of this program with the education and hospital managements is actional in the sense of altering negative behaviors in the hidden curriculum in the faculty context since it aims at a long-term

cultural change (16, 18).

Interprofessional communication and collaboration is a common area of competence for all health professionals, and the students in this program are expected to make gains under the headings of values and ethics, role and responsibility, communication, and teamwork (19,20). The general aims of the program, which involves pluralistic methods, are given below:

- Realizing the importance of interprofessional collaboration in the professional medical setting,
- Identifying potential differences of opinion and acquiring awareness of coping skills,
- Acquisition of the understanding required to exhibit professional behavior in professional matters,

The program content is summarized in Table 1:

Heading	Targets	Education method	Elavaluation method
Block introduction	Must be able to exhibit a professional identity and a perception of interprofessional collaboration	Reflection	
Medical professionalism	Must be able to define the concept of medical professionalism, its components, and its place in the field of medical graduate competence. Must be able to describe the place of interprofessional communication and collaboration in terms of physician values/professionalism.	Presentation	Test (D-Y, short response)
Verbal and non-verbal forms of communication accompanied by case studies	Must be able to comprehend how verbal (comprehensible language, feedback, empathy, etc.) and non-verbal (appearance, posture, gestures and expressions) communication can be used in building effective communcation. Must be able to analyze frequently encountered communication errors, with examples, in interprofessional communication.	Presentation, case, discussion, role play	Test (D-Y, short response)
Forms and levels of communication	Must be able to define behaviors appropriate to formal and informal/hierarchical and peer level communication. Must be capable of analyzing cultural codes and roles using situations experiences or potentially encountered between health workers, patients, and relatives.	Presentation, discussion	Test (D-Y, short response)
Who is who in heath services?	Must be able to define the work spheres and responsibilities of health professionals in health services. Must be able to describe paths to a solution or to produce solutions to problems commonly encountered by health professionals during their work.	Shared experience	Portfolio
Roots of communication in humans	Must be able to describe the origins of communication in humans.	Presentation	Test (D-Y, short response)
Interprofessional collaboration and team work in medicine	Must be able to describe the concept of interprofessional collaboration and team work. Must be able to define the importance of collaboration and team work using the example of resuscitation. Must be able to describe individual, institutional, and sociocultural factors affecting working in collaboration.	Presentation	Test (D-Y, short response)

	Must be able to list the competences/sphere of competence, attitudes, and behaviors necessary for interprofessional collaborative practices.		
Conflict management accompanied by case studies	Must be able to define causes of adverse reactions and conflicts, and the triggers that produce or exacerbate these. Must be able to describe situations that approach the limits of individual tolerance, and what kinds of reactions occur when those limits are exceeded. Must be capable of internal reflection. Must be capable of discussing the best strategies for controlling first adverse reactions. Must be able to distinguish healthy and unhealthy conflict. They must be capable of analyzing how to recognize adverse reactions and verbal expressions, to discuss initial reactions to these, and the outcomes of tit-for-tat responses. Must be able to describe different types of conflict. Must be capable of discussing the causes of the most common disagreements/conflicts of opinion in working environments requiring interdisciplinary collaboration and solutions to these.	Test, case discussions, reflexion, self-evauation	Test (D-Y, short response)
Clinical observation	Must be able to analyze and compare, as an observer, ward environments in terms of interprofessional collaboration, and to reflect on individual and professional development.	Obervation	Portfolio
Difficult coleagues/Difficult behavior and compromise	Must be able to identify difficult people/behavor/colleagues, and to discuss what kinds of strategies might be developed to cope with difficult behaviors.	Prsentation, case discussion, reflection, self-evaluation	
Means of coping with stress during conflict	Must be able to describe areas of stress and conflict in health services. Must be capable of discussing means of coping with difficulties in professional procedures deriving from stress and conflict	Presentation	Test (D-Y, short response)
From studentship to professionalism	Must be able to define the professional medical studentship/physician framework in terms of interprofessional communication and collaboration	Experience sharing	Portfolio

Educational methods of the course: Various student-centered educational activities aimed at the acquisition of objectives were included. Methods involving active participation on the part of students, such as case studies, brainstorming, and self-assessment, and during sessions they shared their ideas by discussing the subject in question, together with instructors acting as moderators.

Clinical observation: During this process, students were first given information about roles and responsibilities. They were then divided into pairs, and each was asked to choose one of the specified internal diseases and surgical clinics. Students were informed about the clinical observation form to be used in the clinics and how these were to be employed. Use was made of the existing literature during the preparation of the clinical observation form (21-23) and a pool of items was established. These items were than analyzed by a specialist team cnsistng of general, internal diseases, and surgical physicians and the director the hospital nursing services, in terms of language, meaning, and appropriateness to the level of first-year students. Once the final version of the form had been produced, it was examined and approved by an eight-member program committee from the medical faculty.

The Clinical Observation Form consists of two sections. The first section consists of items concerning the department where the observation was performed (name of department and personnel employed). The second section contains items concerning team effectiveness (participation of team members in visits on the ward, consultation procedures, team member awareness of roles and responsibilities, compliance with ward/department regulations, compromise in problem solving, application of effective methods of communications, ability to intervene in the event of difficulties, mutual confidence on the part of team members, loyalty and support, leadership characteristics, the atmosphere in the department, the general situation on the ward, receipt of feedback concerning ward activities, and team member satisfaction).

In the clinical observation activity, students spent one day in groups on the internal diseases ward and the other day on the surgical ward. Observation forms prepared by the block committee were completed by students, and responses were given to portfolio questions. At the end of the observation period, the entire group held a session to share their experiences. The information obtained from the observation forms was entered onto SPSS software and subjected to qualitative and quantitiative analysis, and a report was produced for the education/hospital management.

Asssesment and evaluation used in the program

1. Knowledge Exam: A theoretical examination involving the block targets was held at the end of the program. Targets involving such activities as presentations, panels, and case studies were measured with this exam.

2. Portfolio: The portfolio is a personal development document recording students' activities during the program. The protfolio content consisted of the student introduction and task forms. After fully completing the content of the portfolio, studrnts then forward it to the (chairman of the) block committee at a specified time time and day. The file score is assessed by the block committee. The portfolio contained questions allowing students to perform a detailed and transparent comparison and evaluation (Table 2).

Data collection and study instruments for program evaluation: Evaluation of the program was structured around student satisfaction and student success. Scales with a pretest- postest experimental design aimed at assessing student and program success/satisfaction were used together with qualitative portfolio data.

Table 2. Tasks and Scoring Chart in the Portfolio

Heading	Tasks	Score
Task 1: Future Expectations	A medical student can spend six years working and learning with individuals from different professional branches. Whom do you hope to encounter, and where, when and how? What do you hope to acquire from team activities with individuals from different professional branches? From whom, and how? What problems may be encountered in team activities with individuals from different professional branches? Why? How can you cope with these? How? In your opinion, what is the importance of of interprofessional communication and collaboration in terms of physician values/professionalism?	10
Task 2: Experience Sharing	What are the views concerning 'patient, duties, responsibilities, and collaborative working' of the individuals sharing their experience? Were there any similarities or differences between their views? Explain with examples. Write down the problems that the individuals sharing their experiences most commonly experienced in the collaborative process. Why did these problems emerge? Who is responsible? How can the problems be resolved? What most affected you in this session? Why? What were the learning objectives you identified for yourself in the wake of the experience sharing sessions?	20
Task 3: Clinical Observation	Go to the ward appointed for you. Assess the environment there in terms of interprofessional collaboration using the observation form given you. Write an essay responding to the following questions: Describe the basic characteristics of the Internal Diseases and Surgical departments (what purpose do these serve? Who performs which tasks? How is work carried out?) Are there any similarities or differences between the departments in terms of interprofessional communication? Explain, with examples. Describe the communication network in the departments. Who communicates most with whom? Why? Are the staff in the departments happy (for themselves, their patients, and for their professions)? What type of working style would you have if you, as an intern, worked there? What would you wish to change in the department? What conclusions have you drawn from this clinical observation activity, and what are your new learning objectives? Provide feedback about the clinical observation procedure.	40
Task 4: Film Analysis	12 Angry Men). Director: Sidney Lumet, Screenplay: Reginald Rose, 1957. Watch the film above, and then answer the following questions: The film involves a jury consisting of 12 people. Was the purpose agreed by all members? Please explain with examples. Every jury member in the film has different characteristics. Analyze the behavior of these individuals in terms of interpersonal communication skills and teamwork. Do the rain, smoking and heat have any significance? What communication errors did you note in the interaction among the jury members? Explain with examples. Similarly, imagine that you are a member of a team of 12 different health professionals, and that you have assembled for the diagnosis and treatment of a patient. Which member of the jury in the film would you feel closest to? To whom would you compare yourself, and why? Which member of the jury in the film would you adopt as a role model? Why? What (personal) gains have you made from this film, and what are you learning targets in the Professional setting?	30

The scales were applied in order to determine changes in students' opinions and preceptions, inthe first session of the program and again at the end of the final session.

The Professional Identity Scale was developed by Adams et al. (2006) (21). The scale consists of nine items, all scored on a 5-point Likert-type scale from 1, I strongly disagree to 5, I strongly agree. The Turkish language version of the scale was adapted by authors and has a Cronbach Alpha coefficient of 0.82. Higher scores indicate a higher perception of Professional identity.

The Readiness for Interprofessional Learning Scale was developed by Parsell and Bligh (Parsell, & Bligh, 1999). (24) The version adapted by McFadyen et al. (2005) and subsequently adapted into Turkish by Onan et al. (2017) was employed. (25,26). The scale consists of 19 items scored from 1, I strongly disagree, to 5, I strongly agree. A Cronbacj Alpha coefficient of 0.87 has been calculated for the three subheadings of the Turkish version – 'team work and collaboration,' 'professional identity,' and 'roles and responsibilities.' Higher scores indicate a higher readiness for interprofessional learning, and lower scores a lower state of readiness.

Analysis: Data were transferred onto a database prepared on SPSS 18.0 statistical software. Constant variables were expressed as mean, standard deviation, and minimum and maximum values, while nominal variables were expressed as number and percentage. The chi square test was used to determine significance of differences between distributions for nominal variables. Pre- ve post-test values were compared using the t test. Data exhibiting significance were included in the paper.

Miles and Huberman's guidelines on qualitative analysis were used in this study (27). First, students' essays were transferred to the computer and read several times by one of the researchers. The first author extracted the categories of meaning from the essays and identified similarities and differences between these categories. The researchers developed the coding schemes; short essays were coded independently by each researcher. The coding responses were compared, and any dissimilar item was discussed until consensus was achieved. Themes were developed from the coding results.

Results

RQ1. Was there any difference between pre- and post-test Professional identity and readiness for interprofessional learning?
(Table 3)

Table 3. Students' Mean Pre-Post-Test Professional Identity Perception Scores

	N	X	SS	Sd	t	p
I feel like a member of this profession	43	3.5581	.79589	42	-5.699	**.000**
	43	4.2558	.65803			
I feel close ties to members of this profession	43	3.0000	.97590	42	-5.289	**.000**
	43	3.8837	.69725			
I am frequently embarrassed to admit that I work for this profession	43	1.3488	.68604	42	1.098	.278
	43	1.2093	.51446			
I sometimes make excluse for belonging to this profession	43	1.7674	.71837	42	1.360	.181
	43	1.6047	.82056			
I try to keep the fact that I work as part of this profession secret	43	1.1628	.65211	42	-.227	.822
	43	1.1860	.45018			
I am pleased to be a member of (belong to) this profession	43	4.2093	.41163	42	-2.702	**.010**
	43	4.4651	.59156			

I can describe this profession and its members in positive terms	43 43	3.8605 4.1395	.63925 .55982	42	-2.389	**.021**
It is very important for me to be a member of this profession	43 43	4.5116 4.5116	.50578 .55085	42	.000	1.00
I feel that I share common characteristics with other members of the profession	43 43	3.6047 4.0233	.90342 .63577	42	-2.668	**.011**

Table 4 shows a significant difference between total Professional Identity Scale pretest (27.02±3.09) and post-test (29.28±2.65) scores (t= -4.58, p= 0.00). We determined findings indicating that the program increased perception of Professional identity. Based on these results, students felt more like members of the profession at the end of the program, strengthened bonds with members of the profession, and shared common characteristics with them.

Results concerning pre- and post-test Readiness for Interprofessional Learning Scale scores are shown in Table 4.

Table 4. Pre- and Post-Test Readiness for Interprofessional Learning Scale Scores

	N	X	SS	Sd	t	p
Learning together with students in the health sphere will help me be a more effective member of the health provision team.	43 43	3.7907 4.4419	.94006 .54782	42	-4.282	.000
Students in the field of health working together to resolve patient problems produces outcomes that are beneficial for the patient.	43 43	3.8605 4.5349	.96386 .62562	42	-3.543	.001
Learning together with students in the health sphere will increase my ability to understand clinical problems.	43 43	4.1860 4.4884	.85233 .59250	42	-1.914	.062
Learning together with students in the health sphere will strengthen my team work relations after graduation.	43 43	4.0698 4.5116	.98550 .59250	42	-2.877	.006
Communication skills must be learned together with students in the field of health.	43 43	3.9767 4.2558	.59715 .65803	42	-2.389	.021
Learning together with students in the health sphere will help me to think positively about other health professions.	43 43	3.3721 4.0465	.75666 .97476	42	-3.656	.001
In order for learning in small groups to be effective, students must trust and respect one another.	43 43	4.3953 4.6744	.92940 .56572	42	-1.604	.116
Collaborative skills are one of the basic skills needing to be learned by students in the health sphere.	43 43	4.3721 4.6279	1.00055 .57831	42	-1.425	.161
Learning together with students in the health sphere will help me understand my professional boundaries.	43 43	3.9535 4.2326	.92462 .78185	42	-1.666	.103
I think that learning together with students in the health sphere is a waste of time.	43 43	1.7907 1.4651	.98942 .76684	42	1.795	.080
I think that the sharing of experiences of students in the field of health will contribute to my professional development.	43 43	4.0698 4.3488	3.30509 .57253	42	-.569	.572

Clinic problem solving skills can only be learned together with students from my own sphere.	43	2.7674	.94711	42	1.246	.220
	43	2.4884	1.16235			
Learning together with students in the health sphere will help me build healthy communication with patients and other health workers.	43	4.0000	.92582	42	-2.555	.014
	43	4.4186	.54478			
I would like to work on small group projects with other students from the health field.	43	3.7097	.90161	42	-3.846	.000
	43	4.2258	.49730			
Learning together with students in the health sphere will help me explain the underlying causes of patients' problems.	43	3.9677	.75206	42	-1.375	.176
	43	4.0323	.60464			
Learning together with students in the health sphere will help me be an effective team member capable of working collaboratively.	43	4.1290	.84624	42	-4.288	.000
	43	4.5484	.56796			
The basic responsibility of other health professions is to support doctors.	43	3.4651	.90892	42	3.270	.002
	43	2.9070	.99556			
I am not sure of what my role will be in the health services provision team.	43	2.5116	.85557	42	2.776	.008
	43	2.0465	.81514			
I must acquire greater knowledge and skills than students in other health spheres.	43	3.9535	1.21407	42	1.445	.156
	43	4.3488	.75226			

Table 4 shows a significant different between pretest (70.88±10.1) and post-test (78.19±6.8) total RILS scores (p= 0.00). When students' scale scores were compared by gender, female students were determined to have higher mean pretest scores (p=0.013), while no difference was observed in post-test scores.

RQ2. Did any change occur in students' views and perceptions regarding interprofessional collaboration and communication before and after the program?

On the first day os the program, students were asked questions about what they knew about the internship process and what kind of intern they dreamed of being. At the end of the program, students' reflections and feedback were evaluated. The results are shown in Table 5.

Table 5 shows a change between pre- and post-program attitudes regarding internship and prejudices concerning health personnel and personal and professional experience.

Table 5: Students' assessments of clinics in terms of team effectiveness

	(%)						Mean (median)
	0	1	2	3	4	5	
Participation : Do team members take part in meetings, group discussions, and rounds?	13.3		12.0	6.0	36.1	32.5	3.49 (4)
Consultation : Do members benefit from their experiences, knowledge and skills, depending on their specialties?	7.2		1.2	8.4	37.3	45.8	4.06 (4)
Decision-taking Are decisions taken collaboratively?	7.2	1.2	10.8	18.1	41.0	21.7	3.49 (4)
Roles and responsibilities: Are team members aware of and accept their own and others' roles and responsibilities?	1.2	3.6	3.6	7.2	33.7	50.6	4.20 (5)

Procedures Does the team adhere to rules, methods and procedures? Do they agree on methods for arriving at solutions to problems?	10.8		3 (3.6	10 (12.0	38.6)	34.9	3.72 (4)
Communication : Is communication open and honest? Are members effective listeners? Is communication synchronic (in real time in departments and clinics) or non-synchronic (via blackboards, orders, e-mail or telephone)? Are verbal and non-verba; methods employed in communication? Are members polite? Do they interrupt people when they are talking? Do they address them by name? Is empathetic behavior	1.2		4.8	16.9	(57.8	(19.3	3.88 (4)
Facing up to difficulties: Does the team avoid difficulties or problematic situations? Or does it cope with them by resolving them?	22.9	1.2	2.4	9.6	36.1	27.7	3.18 (4)
Openness and trust Are team members open with and trusting of one another?	2.4	1.2	3 (3.6	7.2	39.8	45.8	4.18 (4)
Compliance Do team members comply wıth meetings and other acrivities (timings etc.)	13.0		2.4	10.8	47.0	26.5	3.58 (4)
Support: Do team members support one another? Do they cover for one another when someone makes a mistake?	13.3	2.4	4.8	8.4	31.5	39.8	3.61 (4)
Risk-taking: Is the team encouraged to take risks, and is it open to these new ideas?	48.2	7.2	3.6	13.3	13.3	14.5	1.80 (1)
Atmosphere: Is there an informal, comfortable and calm atmosphere?	2.4	8.4	12.0	13 (15.7	38.6	22.9	3.48 (4)
Leadership: Is the hierarchical structure in terms of work flow not especially pronounced, and are leadership roles shared?	3.6	3.6	16.9	24.1	44.6	7.2	3.24 (4)
Evaluation : Are periodic assessments of progress made?	22.9	6.0	4.8	16.9	27.7	21.7	2.86 (3)
Meetings: Are meetings and rounds well planned and productive?	14.5	2.4	10.8	15.7	32.5	24.1	3.22 (4)
Fun : Is there a spirit of fun and togetherness? Are the team members happy?	9.6		15.7	19.3	32.5	22.9	3.43 (4)

RQ3. How do students evaluate the clinical observation? Whould should be the faculty's points of change in terms of interprofessional communication and collaboration?

As shown in Table 6, the mean score awarded by students in terms of interprofessional collaboration, communication and teamwork (Table 6) during the clinical observation was 65.70± 12.28, with a median value of 65 and a range of 39-95. The highest score awared by students in terms of teamwork effectiveness was give to the Intensive Care and Cardiology departments, while the lowest was given to the Ear, Nose and Throat and Pathology departments.

Table 6. Pre- and post-program student views and perceptions

Theme: Pre-program		Theme: Post-program	
Category	**Supporting quotation (participant identifier, gender)**	**Category**	**Supporting quotation (participant identifier, gender)**
Prejudices (n= 32)	*I will be very tired during my internship (SP3, FM)* *The intern apparently has the lowest status in this faculty (SP11, M)* *I think that the nurses really put you down, saying things like 'Don't you know that, either?' (SP4, M)* *I hear that interns have to do everything, necessary or not. (SP7 FM)* *In my opinion, the hierarchy goes like this: members of teaching staff, assistant physicians, hnurses, health professionals and students. The nurse tells the student what to do. (SP26 FM)* *I have never heard the word phlebetomist before. What do they do? (SP7, M)* *I have heard that interns never sleep.* (SP9, M)	**Overcoming prejudices (n= 29)**	*After visiting the intensive care department I realized I had a lot of prejudices abiout health workers, and contrary to what I had thought, I realized they made much more use of each others'professional knowledge and experience. I am delighted that my prejudices were overcome at the start of my professional education, before the clinical stage. (SP5, FM)* *Contrary to the public perception, I never encountered any intern who hated his job and was really fed up.* *For example, I never imagined that we would be working in teams as I engaged in my profession. I thought that the doctor, the best informed person, would be the leader and the other people would be his helpers. But we all have a common objective; patient health. So we must all work together as a team and support one another.* ***We can achieve our aim if everyone discharges his duties and responsibilities. But we have also learned that we will encounter difficult people and how to cope with them. (SP8, M)*** *We received advice and listened to people's experiences, we were freed from our prejudices and established new perspectives. We faced down our fears and put an end to our internal doubts.* **(SP35, FM)** *Interns may have to work more than they should due to a lack of personnel, but these are not impossible things. (SP7,FM)* *How many things I was totally misinformed about! For example, I used to think that the pecking order was members of the teaching staff, assistant physicians, nurses, and interns. (SP41,M)* *I used to think there were problems with nurses and assistant physicians with big egos. But when I talked to nurse X I realized that their jobs are also really difficult. I think that everything stems from us thinking we really know a lot. (SP28,FM)* *Assistant physician A in the surgery department had been in the hospital for 36 hours but was still smiling and treated us very well. I was amazed ... I realized that compromise is the way to being happy in working life. (SP12,M)*

Early clinical experience and awareness of professional life (n=22)	*I honestly do not know who does what in this profession (SP25, M)* *It seems far too early to think about internship or being a physician. We still have plenty of time (SP22, FM)*	**Early clinical experience and awareness of professional life (n= 41)**	*Our receiving three years of education independently of the hospital can make us forget that the basic objective is to restore the patient to health. Everyone should experience this practice. (SP15, M)* *With the clinical observation work I acquired informstion about my professional life by making a kind of journey in time (SP27, M)* *It was very beneficial. It allowed me to observe and become acquainted beforehand with the kind of setting I will encounter when I start my hospital internships. I identified the problems I will encounter as an intern and assistant physician and realized the importance of being a team member and establishing effective communication with members of the team. I realized that the team is importance in overcoming problems. (SP18, M)* *I think that this kind of clinical observation should be expanded in years 1, 2 and 3. Students must begin adaptation to the culture of the hospital setting***. (SP6, FM)** *I realized the problems I may encounter in the future, the people I will work with, and what my and their expectations will be***. (SP22, FM)**
		Personal development (n=24)	*I think that the education we received gave us a taste of personal development during the block. This had a positive effect on all of us. (SP7,FM)*
			I realized a lot of things about myself. For example, it seems I am not a very effective listener. (SP24, M)
			We can experience conflict with a great many people in our personal lives. I can even apply what I have learned in my daily life. (SP38, FM)

Discussion

The increasing complexity of health problems is leading to an increase in the independence of professions, but also in one sense to their interdependence. Interprofessional collaboration has been recognized as a means of improving patient outcomes and the cost effectiveness of care in a range of settings (28). In that context, interprofessional collaboration and communication has been identified as a common competence for health workers (19, 29). Despite investigation into and considerable work concerning methods by which this competence can be acquired in medical faculties, the desired level has not been achieved. This may be due to individual factors (age, education differences, communication ability, and professional competence), institutional factors teamwork, role uncertaintis, and working environments), and sociocultural factors (the societal perspective, etc.) factors influencing collaborative work, or to curriculum design and problems in implementation (30).

An interactive program in the early medical period has been recommended for students' cognitive and affective competence (8). The aim is to endow students with field-specific concepts and applications by learning theoretical and

formal aspects. The program strengthened students' theoretical infrastructures concerning professionalism, interprofessional collaboration, team diversity, modes of communication, and difficult situations. In terms of cognitive competence, students were able to distinguish more clearly the difference between what should be and how actually are, and to better identify points of criticism. We think that awareness in the early period will allow students to draw closer to their profession and to develop a consciousness of professional identity. Analysis showed that their readiness for interprofessional learning increased at the end of the program (p= 0.00). When the scale scores were compared in terms of students' genders, women had a higher mean pretest score (p=0.013), while there was no difference between men and women on the post-test (p=0.394). It may therefore be concluded that the program achieves equality between the sexes in terms of readiness for interdisciplinary learning in the early period. We think that this is particularly important in terms of gender equality in medical education. Interprofessional education is defined as an intervention where the members of more than one health or social care profession, or both, learn interactively together, for the explicit purpose of improving interprofessional colloboration or the health or well being of patients and/or clients. Establishing that awareness in the early period is highly valuable in terms of allowing programs to be effective (10). In the program applied, students reported role uncertainty and the effect of institutional factors associated with personnel numbers as the most important problems during internship. In addition, students reported that they acquired greater awareness regarding the importance of developing their individual communication skills.

Students regarded themselves as at the lowest rung of the hierarchy at the start of the program, and reported negative prejudices toward nurses in particular. These prejudices, when students were still in the second month of their education, were very interesting. It is therefore not difficult to predict how students will be molded by the time of their sixth year, in the absence of any accurate and experience-based information, through prejudice alone. The most important gain from the program applied in this study was that students reported overcoming these projudices acquired in an informal manner via theoretical infrastructure and experimental activities.

We think that this program, applied in the very earliest month of medical students' training will also have a positive effect on their personal development. Theoretical knowledge was acquired regarding 'Coping with Difficult People and Communication Conflict Resolution Methods,' and students analyzed themselves through self reflection at the same time. They revealed whether or not they were good listeners and their own difficult behavior or conflict resolution methods, and realized the reasons underlying their behaviors while lestening to their peers' reflections.

Students take part in numerous activities in the program, including discussions, case studies, role play, reflection and experimental group work, each of which has been described as important in the literature (8). Student feedback, and particularly their experiences gained from case studies and observations, is reported to be beneficial to their professional and also personal development. In order to develop and mature intellectually and personally, it is essential to learn to question one's beliefs, feelings and perspectives in a purposeful manner. Each individual going through the transformative process converts his belief assumptions and experiences into meaningful perspectives. Students express the experience they obtain by discussion, questioning and observation during the transformative learning process through reflection and the reflection cycle. We think that these reflections will benefit themselves, their peers, the instructors and the hospital.

Stuents' observations and evaluations of the

clinics were shared with the chief physician and the head nurse's offices. This led to a reopening of discussions about requirements from the perspective of the first-year student, and led the way to adjustments. It has been decided that meetings will be held between clinics achieving low scores in terms of team effectiveness and the dean's, chief physician's, and head nurse's offices. In that sense, the program being actional as well as transformative represents a difference from other studies.

Conclusion

Collaboration in medicine refers to the sharing of ideas and collective action on the part of health professionals in a common spirit of harmony and trust. Multifacted studies aimed at improving and developing both students and other health professionals, in both the application and learning settings, are required in order to increase collaboration and communication in medicine. It may be concluded that the desirability for such activities to commence in the first years of medical training has been revealed unequivocally. Reflective and actional strategies in the transformative context improve students' for interdisciplinary learning and their perception of a professional identity, and are also a trigger for a cultural change.

Limitations and directions for future research: The study was conducted as an elective program involving a small number of students, which represents the principal limitation of our study. This prevents students from receiving equal education on an important topic. The research reveals a problem of generalization. Despite this generalization problem, the importance of the program objectives and the results of the study were evaluated by the faculty, and it was decided to adopt the core curriculum in such a way that all students could participate.

A future area of related research is to examine whether there is a change in ideas and opinions concerning interprofessional colloboration and communication between subjects who participate in the program and those who do not by the time of graduation.

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ORCID: Ozlem Midik http://orcid.org/0000-0002-0151-7461

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