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TIP ÖĞRENCİLERİNDE FİZYOTERAPİ MESLEĞİ FARKINDALIĞI: BİR MÜFREDAT ÇALIŞMASI

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ÖZET

Meslekler arası eğitim profesyonel rol ve sorumlulukların anlaşılmasının yanı sıra hasta güvenliğinin de gelişmesini sağlar. Bu çalışma, 3. sınıf tıp öğrencilerinin sağlık hizmeti ekibi içinde fizyoterapi mesleğiyle ilgili anlayış ve tutumlarını belirlemek ve "Hasta Güvenliği ve Meslekler arası İşbirliği" seçmeli dersini alan ve almayanları karşılaştırmak amacıyla yapılmıştır. "Hasta Güvenliği ve Meslekler arası İşbirliği" seçmeli dersi kapsamında 239 öğrenci (kadın=165; erkek=174; mean age: 21.09±0.42 years) fizyoterapi mesleği ile ilişkili dersleri alan ve almayanlar olarak yarı randomize şekilde 2 gruba ayrılmıştır (A Grubu=128; B Grubu=111). Bu 5 haftalık seçmeli ders, dönemlik 4 kredi, 16 saat teorik, 4 saat panel, 4 saat küçük grup tartışması ve 28 saat simülasyon eğitimi olmak üzere toplam 52 saat idi. Dersin son gününde her iki gruptaki öğrencilerin fizyoterapi mesleği ile ilgili bilgi, tutum ve algılarını değerlendiren bir anket uygulandı. Görsel Analog Skalası üzerinde 0 ("kesinlikle katılmıyorum") ile 10 ("kesinlikle katılıyorum") arasında değişen puanlarla her bir anket sorusu oranlandı. Yüz otuz tıp öğrencisi (%50.2) kurs sonrası yapılan anketi doldurdu. Seçmeli dersin fizyoterapi mesleği ile ilgili grubuna katılan öğrencilerin anket sonuçları dersi almayan gruptaki öğrencilerle karşılaştırıldığından istatistiksel olarak anlamlıydı ($p<0.0001$). "Hasta Güvenliği ve Mesleklerarası İşbirliği" seçmeli dersi kapsamında tıp öğrencilerine verilen dersler öğrencilerin fizyoterapi mesleği ile ilgili tutum ve farkındalıklarını arttırmada pozitif bir etkiye sahip olmuştur.

Anahtar Kelimeler: Sektörler arası işbirliği, sağlık personeli, hasta güvenliği, tıp öğrencileri.

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PHYSIOTHERAPY PROFESSION AWARENESS IN MEDICAL STUDENTS:

A CURRICULUM STUDY

ABSTRACT

Interprofessional education enables the understanding of professional roles and responsibilities as well as the development of patient safety. This study was conducted to determine the understanding and attitudes of 3rd grade medical students in physiotherapy profession within the health care team and to compare them with those who did not receive the "Patient Safety and Interprofessional Collaboration " elective course. In the “Patient Safety and Interprofessional Collaboration” elective course, 239 students (female=165; male=174; mean age: 21.09±0.42 years) were quasi-randomly assigned to two groups (Group A=128; Group B=111), who took and did not take courses related to physiotherapy profession. This 5-week elective course with 4 credits consisted of a total of 52 hours lectures including 16 hours theoretical, 4 hours panel, 4 hours small group discussion and 28 hours simulation training. On the last day of the course, a questionnaire was applied to both groups to compare the knowledge, attitudes and perceptions of students about the physiotherapy profession. Each item was rated on the Visual Analog Scale with scores ranging from 0 (“strongly disagree”) to 10 (“strongly agree”). One hundred and thirty medical students (50.2%) completed the post-course questionnaire. The results of the questionnaire of the students participating in the elective course related to the physiotherapy profession were statistically significant as compared to the students in the group not taking the course ($p<0.0001$). The lessons given to medical students within the “Patient Safety and Inter-professional Collaboration” elective course have had a positive effect on increasing students’ attitudes and awareness about physiotherapy profession.

Key Words: Intersectoral collaboration, health personnel, patient safety, medical students.

INTRODUCTION

In recent years, increased attention towards interprofessional education in terms of patient safety and teamwork has been frequently articulated for future health-care professionals (1-3). The health-care students have to learn how to become a part of the interprofessional collaboration to deliver safer care.

Traditionally, medical students have experienced minimal contact with other health professionals accompanying with the skills needed for interprofessional collaboration and patient safety (4-6). Thus, the curricula of the different health-care professions must move to convert a safety culture in terms of interprofessional teamwork. Health care students need to know how systems impact on the quality and safety of health care, how poor communication can lead to adverse events as well as how to manage these challenges (7). As a future leader of health-care, they need to know about patient safety principles while "working with" the other professionals. Building students' attitude on patient safety and interprofessional collaboration needs to occur during education before a student enters a health care service (7). Interprofessional collaboration and patient safety concepts have to be developed at undergraduate level for raising the knowledge of roles and awareness towards other professions. Students' attitudes are the important indicator for the design of interprofessional education to ensure intended outcomes (8). This is the first study that seeks to fill the gap by providing a course using simulation based learning techniques to achieve patient safety and interprofessional collaboration skills of the undergraduate medical students in Turkey. This study was part of a larger research project in which a range of interdisciplinary, clinical based and simulation based learning resources for medical students were developed.

The purpose of this study was to assess the short-term effectiveness of an elective course introducing patient safety, teamwork, safety leadership, and human simulation with patient based scenarios on interprofessional collaboration at our institution. This evaluation study was intended to explore the knowledge of 3rd year undergraduate medical students in terms of their understandings of "knowing about" and "working with" physiotherapy profession, as well as their awareness in working as part of an interprofessional healthcare team. We hypothesized that our course would have a positive impact on the students' perceptions and attitudes toward physiotherapy profession.

METHODS

Subjects

This prospective educational trial was conducted in the Department of Medicine with undergraduate medical students in their 3rd year of their professional course. Our university offers an elective 5-week course called "Patient Safety and Interprofessional Collaboration" for 3rd year medical students between May-June 2015. A series of lectures by a multidisciplinary team of instructors covered interprofessional collaboration and patient safety issues according to their own profession. An interprofessional steering committee with representatives from each department of health sciences including Dietetics, Child Development, Dentistry, Pharmacy, Physiotherapy, Nursing, Clinic Psychology and Vocational Health Services coordinated the pilot course **(Table 1)**.

Table 1. The groups of the course of Patient Safety and Interprofessional Collaboration

Group A (n=56)	**Group B (n=74)**
MED840 PS&IP: Psychology	MED838 PS&IP: Vocational Health Services
MED841 PS&IP: Dietetics	MED839 PS&IP: Pharmacy
MED842 PS&IP: Nursing	MED843PS&IP: Dentistry
MED845 PS&IP: Child Development	MED844 PS&IP: Physiotherapy

PS&IP: Patient Safety and Interprofessional Collaboration; **MED:** Medical Lecture

Patient Safety and Interprofessional Collaboration Course

All students participated in the general sessions of the course emphasizing the descriptions of the 8 professions, patient safety and interprofessional collaboration. The rest of the course was designed for each group separately. The 4-credit hour course consisted of 16-hour lectures, followed by 4-hour panel, 4-hour small group sessions and 28-hour simulation education (standardized patient encounters and debriefing sessions) that is totally 52 hours for each student distributed over the 5 weeks **(Figure 1)**.

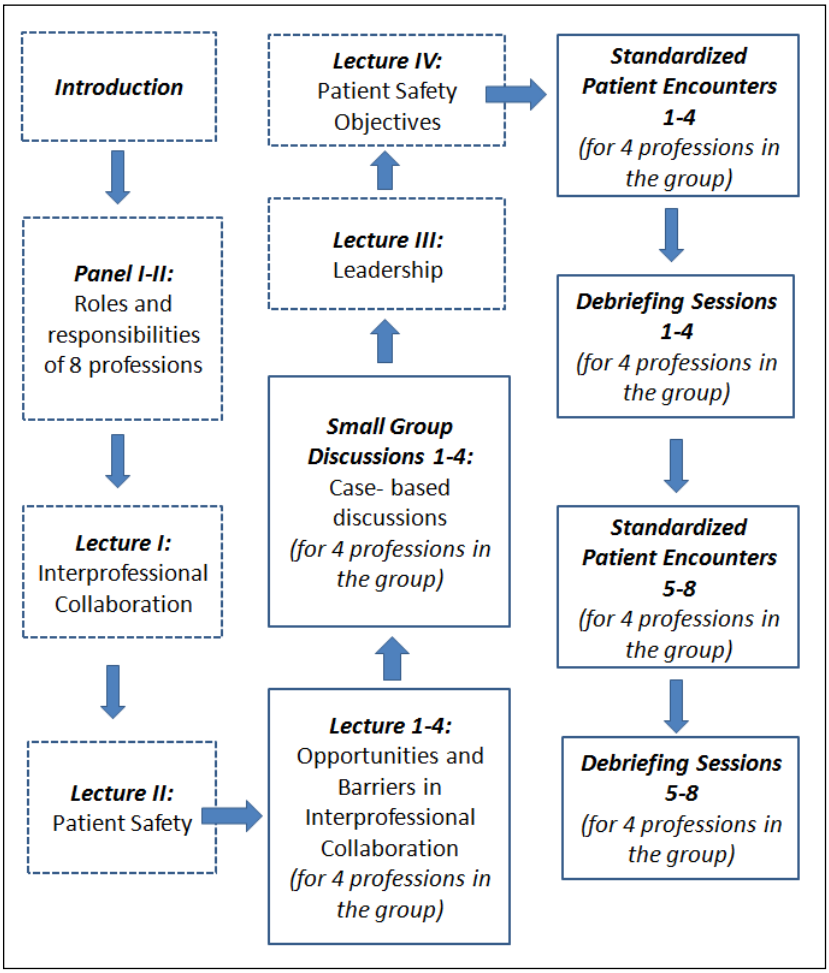

Figure 1. The program chart of the course.

The students who were assigned to "physiotherapy profession" in the course attended the lectures about theoretical basic knowledge (8 hours), case-based discussion on a sample of orthopedics (4 hours), and simulation based educational interventions on standardized patients with orthopedic clinical scenarios (2 hours) and debriefing sessions (2 hours) in the field of physiotherapy. The course focuses on teamwork, communication and patient safety. All students were attending the elective course by choosing the course using the university's online registration system. It was not possible to allocating all students equally to each specific course. Four groups of professions participated in the sessions of each group. Therefore, the present study design was quasi-randomised with open to systematic bias.

In the "Patient Safety and Interprofessional Collaboration Course" elective course, 239 students (Female=165; Male=174; Mean age= 21.09±0.42 years) were quasi-randomly assigned to two groups (Group A=128; Group B=111), who took and did not take courses related to physiotherapy profession. The Non-

Interventional Clinical Researches Ethics Board approved all data collection and analysis (GO 13/391-10). Feedback from the students was obtained after the lecture. Although the course was mandatory, interested student who completed whole course were asked to provide signed consent before completing the surveys. The students were informed regarding the purpose of the study.

Standardized Patient Encounters

The faculty members of physiotherapy profession developed two patient cases and chose an outpatient clinic setting for the simulation experience. The simulation exercises were designed to address both cognitive and attitudinal competencies. The context varied according to the illness script in each scenario. Before the simulation, an instructor provided little assistance on medical decision-making, and let students create an individual care plan for the patient. Each student had to determine the best course of action to provide safe and effective care to the patient.

The students were expected to communicate with the patient and consult to physiotherapy. To optimize the opportunity for interprofessional collaboration, the simulation area was replicated specifically as a real hospital outpatient orthopedic department. The standardized patients received training for the specific behaviors and actions. These included displaying certain emotional responses consisted of resisting to go to physiotherapy and rehabilitation, asking for other treatments like drugs and injections, consistent with anxiety regarding their condition. The students had two encounters with the standardized patients, and those encounters were videotaped each time. The scenario lasted 10 minutes.

Debriefing Sessions

All students participated in the debriefing sessions, and watched the videos of volunteers. The students reflected on their performances, and received feedback from their peers and the instructors. The 50-minute sessions ended with a discussion on generalizing the outcomes of the debriefing for future encounters. All students were expected to meet the needs of the standardized patient within the scope of their own profession remaining within their student position. For the orthopedic cases, the medical student was expected to explain the diagnosis to the patient and refer him to physiotherapy addressing multicultural and multigenerational barriers in terms of communication with the patient after giving some medications. For patient scenario on resisting going to

physiotherapy and rehabilitation, the medical student was expected to intervene on this error and convince the patient to go on to physiotherapy program. The students reflected on the effective areas of teamwork and communications, as well as the opportunities for improvement. Students also identified the safety and interprofessional collaboration issues.

Assessment

A self-administered student survey on the knowledge, attitudes and behaviors, and the awareness of the profession of physiotherapy were delivered on the last day of the course. The 5-item survey was developed by the authors regarding the current literature, reviewed by a faculty member with expertise in educational pedagogy, and revised in accordance with the recommendations. A Visual Analog Scale ranging from 0 ('strongly disagree') to 10 ('strongly agree') was used to rate each item. Any increased score in preferences in survey was identified as a positive change for the achievement of that attribute.

The 5 items were as follows:

1. Attending this elective course helped me increase my understanding and knowledge of physiotherapy profession.
2. Discussing the videos with my group members in the debriefing session increased my understanding of interprofessional teamwork, roles and responsibilities of physiotherapy professionals.
3. Reviewing and discussing in small groups sessions with the instructors helped me increase my understanding of effective communication in health care system.
4. Attending this elective course helped me increase my understanding and awareness of patient safety.
5. Participating in the standardized patient encounters addressing the lecture objectives was an effective activity for my understanding and awareness of physiotherapy profession.

At the end of the course, all students were also asked "Should this course be included in your curriculum?" to assess student response to the course, a 5 point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

Additionally, all students were graded between 0-100 according to their performances in the second standardized patient encounters.

Statistical Analysis

The scores in the test and responses were compiled and analyzed using Statistical Package for Social Sciences (SPSS) software version 22.0 (SPSS Inc., Chicago, IL, USA). Descriptive analysis was carried out including means, standard deviations (SD), and percentages. Independent-sample *t* test were used to compare the groups. A *p* value of $p<0.05$ was set to determine a significant difference.

RESULTS

The reason for high drop-out rate was the completing the questionnaire was voluntary, therefore 130 medical students (50.2%) completed the post-course survey. Means and standard deviations (SD) for scores on the student survey were presented in Table 2.

Table 2. Means (SD) for student survey questions (10-point VAS Scale)

Questions	**Group A (n=56) Mean (SD)**	**Group B (n=74) Mean (SD)**	**p**
1. Attending this elective course helped me increase my understanding and knowledge of physiotherapy profession.	5.30 (2.60)	7.14 (2.21)	0.0001
2. Discussing the videos with my group members in the debriefing session increased my understanding of interprofessional teamwork, roles and responsibilities of physiotherapy professionals.	5.71 (2.48)	7.22 (2.22)	
3. Reviewing and discussing in small groups sessions with the instructors helped me increase my understanding of effective communication in health care system.	5.84 (2.69)	7.92 (2.01)	

4. Attending this elective course helped me increase my understanding and awareness of patient safety.	6.04 (2.73)	7.70 (2.04)	
5. Participating in the standardized patient encounters addressing the lecture objectives was an effective activity for my understanding and awareness of physiotherapy profession.	5.45 (2.35)	7.53 (2.0)	

n: Number of students **S.D.:** Standard Deviation

There were significant higher scores in students' responses who attended the physiotherapy profession part of the course (Group B) ($p<0.0001$). The students, who attended the physiotherapy lectures and small group discussions, responded more positively to the questions on interprofessional collaboration and teamwork than the other group (Group A).

The average score was 4.10±0.30 for the statement, "Should this course be included in your curriculum?" Over 90% of all groups "agreed" or "strongly agreed" with the statement that this course in their 3rd year increased their understanding of the importance of interprofessional collaboration, awareness of roles of other healthcare professionals.

The results of the statistical analysis also demonstrated no significant difference between course grades (0-100) for Group B (Mean: 80.91±21.04, $p=0.196$) and Group A (Mean: 75.30±28.06, $p=0.214$).

DISCUSSION

The findings of the study showed that "Patient Safety and Interprofessional Collaboration" course increased perceived learning, awareness and change in attitudes of medical students about physiotherapy profession via interprofessional education interventions using patient scenarios, lectures and small group work to conceptualize interprofessional collaboration and patient safety. Our findings contribute to existing literature by the positive impact of interprofessional collaboration and patient safety training on students' perceived awareness (9-15).

There is still a lack of agreement in terms of ideal time to introduce the principles of undergraduate interprofessional education in the current literature (16-18). Bluff and Holloway (2008) suggest that the students emulate the clinical

role models they observe and that vicarious learning in the clinical environment is a major influence on future professional behaviors (19). With these experiences in place, we believe that patient-centered practice with standardized patients and interprofessional clinical rotations should be initiated at early years of education. Therefore, this curriculum started at the end of 3rd year medical education when readiness for interprofessional collaboration is the highest.

According to Freeth et al (2005), interprofessional education refers to students from different health-related professions learning "from, with, and about each other" to improve collaboration and the quality of care (5). However, traditional profession-specific teaching and learning contributes to a decrease in attitudes and perceptions toward the need for cooperation in healthcare team (20). Additionally, in our university, medical students rarely interact collaboratively with other healthcare students even during the clinical rotations through their education. Furthermore, academic hierarchal health care environment provoke a culture of tribalism with loss of respect, power imbalances among different professions and understanding of each other's responsibilities. As a result of that, there were statements from students in small group discussions regarding their lack of knowledge and awareness about physiotherapy profession through the course. As they have little contact with other health professions during their undergraduate education, the favorable results of the course are nevertheless encouraging regarding students' positively increased attitudes and perceptions in terms of physiotherapy profession for future collaborative teamwork.

In literature, small group learning methods have been identified as key strategies for drawing upon real-life clinical problems to stimulate interprofessional problem-solving (21, 22). Similarly, in our study, small group discussions set forth that physiotherapy roles stereotypically were perceived as subordinate and mainly entail execution of doctors' orders. On the other hand, they had some ambivalence or had not yet developed a keen sense of professional identity. Similarly, some studies also indicated these negative attitudes still persist (23, 24). As mentioned in previous studies it is possible that the students' factors, such as their social, economic, and cultural backgrounds would probably influence the results of the present study. Most importantly, students were provided with the opportunity to practice on standardized patient encounters in realistic simulation scenarios, and encouraged to engage and received feedback with debriefing discussions. Our course has also concentrated on exposing students to positive and meaningful examples of interprofessional collaboration and patient safety. According to the self-

administered survey results at the end of the course, it is noteworthy that there were positive attitudes and beliefs in the Group B who has taken physiotherapy lectures. Hopefully, these students might be able to transfer what they have learned by the use of case scenarios and debriefing sessions for their real-world experiences in future health care teamwork. Although interprofessional training curricula are now widespread in many countries, to our knowledge, there is no study from Turkey to address Patient Safety and Interprofessional Collaboration training regarding medical students' perceptions, beliefs and attitudes about physiotherapy profession. We suggest that the panels and lectures during course training encouraged the students to recognize and observe the borders of their own roles as well as physiotherapy profession and responsibilities in understanding holistic health care approach with a standardized patient. Furthermore, the findings might suggest that standardized patient encounters and debriefing sessions can lead to improved attitudes towards interprofessional collaboration of other health professional roles, status and boundaries. The short-term nature of these positive results is in accordance with the improvements in the literature (25, 26).

The vast majority of the students (90%) agreed that the course should be included in their curriculum. Overall, student satisfaction with this curriculum was relatively positive. All students in both groups participated in this curriculum graded high scores following their performances in the second standardized patient encounters. Accordingly, no difference between groups in terms of grades was expected. However, the positive feedback of physiotherapy students is more important than the grades they receive in terms of achieving the purpose of the course.

High drop-out rate was a limitation of our study. Furthermore, the limited survey population is taken from a single institute only comprising of undergraduate medical students. Additionally, it was necessary to test students' awareness about other health professions and communcation skills to compare the effectiveness of the course at the end of the 5 weeks.

Currently, there is no Turkish adapted version of existing instruments to evaluate learners and curriculum. The course is still undergoing several revisions of content and teaching methods including the adoption of a problem-based learning and inclusion of the students from other health professions.

CONCLUSION

Our results support the efficacy of our curriculum for improving 3rd year medical students' perceptions and attitudes in the development of patient safety and interprofessional collaboration concepts. It is crucial to evaluate the learning outcomes and participant feedback and make changes according to these outcomes in health care undergraduate education. We suggest that the positive response from the students to the course is an important step replacing a culture of Interprofessional Collaboration and Patient Safety environment in future health care system in Turkey. Therefore, this first pilot interprofessional education course in our country, needs to be integrated into not only undergraduate medical student programs but also all undergraduate allied health programs with an underlying philosophy of learning about, with and from each other in terms of understanding professional roles and responsibilities with effective teamwork and communication to ensure patient-centered and safe care. Further studies are also needed to strengthen our results to determine whether it is possible to transfer Patient Safety and Interprofessional Collaboration trainings together with allied health professions.

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Declaration of Interest

The authors declare no conflicts of interests. The authors alone are responsible for the content and writing of this article.

REFERENCES

1. Holmes JH, Balas EA, Boren SA. A guide for developing patient safety curricula for undergraduate medical education. J Am Med Inform Assoc. 2002;9(Supplement 6):S124-S7.

2. Singh R, Naughton B, Taylor JS, Koenigsberg MR, Anderson DR, McCausland LL, et al. A comprehensive collaborative patient safety residency curriculum to address the ACGME core competencies. Med Educ. 2005;39(12):1195-204.

3. Johnstone M-J, Kanitsaki O. Clinical risk management and patient safety education for nurses: a critique. Nurse Educ Today. 2007;27(3):185-91.

4. Baldwin Jr DC. Some historical notes on interdisciplinary and interprofessional education and practice in health care in the USA. J Interprof Care. 2007;21(sup1):23-37.

5. Freeth D, Reeves S, Koppel I, Hammick M, Barr H. Evaluating interprofessional education: A self-help guide. 2005. Higher Education Academy Learning and Teaching Support Network for Health Sciences and Practice, London, UK.

6. Gilbert JH. Interprofessional learning and higher education structural barriers. J Interprof Care. 2005;19(sup1):87-106.

7. Safety WP, Organization WHO Patient Safety Curriculum Guide: Multiprofessional edition. Geneva, World Health Organization, 2011.

8. Curran VR, Sharpe D, Flynn K, Button P. A longitudinal study of the effect of an interprofessional education curriculum on student satisfaction and attitudes towards interprofessional teamwork and education. J Interprof Care. 2010;24(1):41-52.

9. Angelini DJ. Interdisciplinary and interprofessional education: what are the key issues and considerations for the future? J Perinat Neonat Nurs. 2011;25(2):175-179.

10. Engum SA, Jeffries PR. Interdisciplinary collisions: bringing healthcare professionals together. Collegian. 2012;19(3):145-51.

11. Hammick M, Freeth D, Koppel I, Reeves S, Barr H. A best evidence systematic review of interprofessional education: BEME Guide no. 9. Med Teach. 2007;29(8):735-51.

12. Hansson A, Foldevi M, Mattsson B. Medical students' attitudes toward collaboration between doctors and nurses–a comparison between two Swedish universities. J Interprof Care. 2010;24(3):242-50.

13. Barr, H. Interprofessional Education: Today, Yesterday and Tomorrow. Occasional Paper No. 1. The Learning and Teaching Support Network for Health Sciences and Practice, London, 2002.

14. Glen S, Reeves S. Developing interprofessional education in the pre-registration curricula: mission impossible? Nurse Educ Pract. 2004;4(1):45-52.

15. Tunstall-Pedoe S, Rink E, Hilton S. Student attitudes to undergraduate interprofessional education. J Interprof Care. 2003;17(2):161-72.

16. Horsburgh M, Lamdin R, Williamson E. Multiprofessional learning: the attitudes of medical, nursing and pharmacy students to shared learning. Med Educ. 2001;35(9):876-883.

17. Parsell G, Bligh J. Interprofessional learning. Postgrad Med J. 1998;74(868):89-95.

18. Pirrie A, Hamilton S, Wilson V. Multidisciplinary education: some issues and concerns. Educ Res. 1999;41(3):301-14.

19. Bluff R, Holloway I. The efficacy of midwifery role models. Midwifery. 2008;24(3):301-309.

20. D'amour D, Oandasan I. Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept. J Interprof Care. 2005;19(S1):8-20.

21. D'eon M, Crawford R. The elusive content of the medical-school curriculum: a method to the madness. Med Teach. 2005;27(8):699-703.

22. Steinert Y, Cruess S, Cruess R, Snell L. Faculty development for teaching and evaluating professionalism: from programme design to curriculum change. Med Educ. 2005;39(2):127-36.

23. Hojat M, Gonnella JS, Nasca TJ, Fields SK, Cicchetti A, Scalzo AL, et al. Comparisons of American, Israeli, Italian and Mexican physicians and nurses on the total and factor scores of the Jefferson scale of attitudes toward physician–nurse collaborative relationships. Int J Nurs Stud. 2003;40(4):427-35.

24. El-Zubeir M, Rizk DE, Al-Khalil RK. Are senior UAE medical and nursing students ready for interprofessional learning? Validating the RIPL scale in a Middle Eastern context. J Interprof Care. 2006;20(6):619-32.

25. Nisbet G, Lee A, Kumar K, Thistlewaite J, Dunston R. Interprofessional health education: A literature review. Centre for Research in Learning and Change, University of Technology, Sydney, Australia. 2011.

26. Reeves S, Goldman J, Gilbert J, Tepper J, Silver I, Suter E, et al. A scoping review to improve conceptual clarity of interprofessional interventions. J Interprof Care. 2011;25(3):167-174.