THE ROLE OF INTERPROFESSIONAL EDUCATION ON POSITIVE ATTITUDE DEVELOPMENT: AN EXPERIMENTAL STUDY ON NURSING AND MEDICAL STUDENTS

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ABSTRACT

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Master Program in Business Administration

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An effective relationship between nurses and physicians is improved through positive attitudes. This thesis analyzes the impact of interprofessional education experience in improving medical and nursing students' attitudes of each other's professions. Pretest-posttest design was implemented on total of 44 nursing and medical students. Data were collected thorough both quantitative and qualitative methods. Students were classified into interprofessional teams and participated in a study where they visited homes of elderly people who live alone for a six-week period. At the beginning of the research, they filled in a questionnaire with demographic information and measures of their attitudes towards each other's professions. They filled in the questionnaire again with the same measures after six-week study. The students demonstrated a significant increase in scores after interprofessional education study. Later focus group interviews were conducted to gain deep insights. This study demonstrated that through

interprofessional education experience, a positive change on nursing and medical students' attitudes towards each other's professions can be achieved.

Keywords: Interprofessional education, teamwork, collaboration, attitude

ÖZET

MESLEKLER ARASI EĞİTİMİN POZİTİF TUTUM GELİŞİMİ ÜZERİNDEKİ ROLÜ: HEMŞİRELİK VE TIP ÖĞRENCİLERİ ÜZERİNE DENEYSEL BİR ÇALIŞMA

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Hemşireler ve hekimler arasında etkili bir ilişki olumlu tutumlarla geliştirilir. Bu tez, meslekler arası eğitim deneyiminin tıp ve hemşirelik öğrencilerinin birbirlerinin mesleklerine yönelik tutumlarını iyileştirmedeki etkisini analiz etmektedir. Öntest-sontest tasarımı toplam 44 hemşirelik ve tıp öğrencisine uygulanmıştır. Veriler hem nicel hem de nitel yöntemlerle toplandı. Öğrenciler, meslekler arası ekipler halinde gruplandırıldı ve altı haftalık bir süre boyunca yalnız yaşayan yaşlıların evlerini ziyaret ettikleri bir çalışmaya katıldılar. Araştırmanın başında, demografik bilgileri ve birbirlerinin mesleklerine yönelik tutumlarını ölçen bir anket doldurdular. Altı haftalık bir çalışmanın ardından, anketi aynı ölçülerle tekrar doldurdular. Öğrenciler, meslekler arası eğitim çalışmasından sonra puanlarda önemli bir artış gösterdi. Daha sonra derinlemesine içgörüler elde etmek için odak grup görüşmeleri yapıldı. Bu çalışma, meslekler arası eğitim deneyimi sayesinde hemşirelik ve tıp öğrencilerinin

birbirlerinin mesleklerine yönelik tutumlarında olumlu bir değişim sağlanabileceğini göstermiştir.

Anahtar kelimeler: Meslekler arası eğitim, takım çalışması, iş birliği, tutum

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CAIPE: Centre for the Advancement of Interprofessional Education

IPE: Interprofessional Education

WHO: World Health Organization

CHAPTER 1: INTRODUCTION

There is growing awareness and initiatives about improving collaboration and relationships among health professions, as collaboration between them is considered as vital to improve the health care services in terms of quality, labor, and cost efficiency (Ateah et al., 2011; Lockeman et al., 2017). Interactive relation and experience are significant to encourage health professions to establish positive interprofessional relationships and collaboration between them (Cruess et al., 2015).

One of the initiatives for collaboration and positive relationships between health professions is interprofessional education. According to Ateah et al. (2011), interprofessional education provide chance for professions to learn with, from and about each other. Through interprofessional education, health professions are capable of improving their knowledge and skills as well as building relationship required to collaborate for the best interests of patients. To be able to work productively and collaboratively, all team members have to be aware of the roles and responsibilities so that they can work together respectfully.

Even though interprofessional education is seen as crucial for the teams of health care, in general, health profession education programs do not educate students to work with other professions in a collaboration. This gap frequently appears in practice settings. As students become professionals, they are transformed into a professional identity which establishes obstacles to collaboration (Hall, 2005). Since health profession students have lack of experience in direct interactions with other health profession students during their education, they can start their work life with specific perceptions and comprehension about other health professions. Their views for other professions determine some proportion of professional identity and the attitudes developed in professional identity creation may have an influence on collaboration between professions in work environment (Carpenter, 1995). Enhancing professionals' perception of other profession is essential for improving collaboration and health care delivery. Also, Ateah et al. (2011) claim that it is sensible to presume that students of

different health professions will share stereotypical perceptions of different health professions in the society until they have a chance to learn or experience otherwise.

In contrast to the traditional education, interprofessional education provides experience and interactions for students. Therefore, they can learn how to work together, understand better each other's professions, and have positive attitude towards each other's occupations. However, although there are some initiatives for interprofessional education, it is not consistent and widespread.

Based on the above, this research describes an initiative that provides health profession students to experience interprofessional education in order to understand whether there is an impact of interprofessional education on positive attitude development. This is significant in terms of providing a different perspective from a different country/culture, since there is no such study in which health profession students work together in Turkey, even though there are a few studies in other countries. Moreover, this research can encourage researchers and educators for interprofessional education initiatives because of its benefits. Through this research, students had experience for working together and opportunity to recognize each other's occupations before starting their career. They had chance to observe whether the prior attitudes towards each other's occupations were accurate. Through interprofessional education, negative attitudes of health professionals towards each other's occupations that developed priorly starting their career can be eliminated and they can learn to work collaboratively. Therefore, they get more ready to work together for the future. Consequently, they can provide better, safe, and high quality of health care during their career, even at their internships. Because of these, this research can also trigger the authorities to plan and organize health professions education as interprofessional. They can attempt to change the way how health profession students are educated.

CHAPTER 2: INTERPROFESSIONAL EDUCATION

2.1. Definition

Over the past thirty years, interprofessional education, also known as IPE, has been commonly used in especially health and social care to provide courageous collaboration and teamwork in order to improve outcomes, impact change and, lately, apply labor force methods (Barr, 1998).

> "*Occasions when two or more professions learn from and about each other to improve collaboration and the quality of care*" (CAIPE, 2002, p.6).

> "*Occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes*" (WHO, 2010, p.7).

The fundamental basis of it is that, early in their education and training, students from diverse backgrounds in the health sciences actively interact with each other to build the skills needed to collaborate effectively (Anderson et al., 2019).

The above definitions demonstrate that at least two separate disciplines and interaction are needed for interprofessional education. However, it is also mentioned in the literature with its features that explain its process.

> "*Collaborative, democratic, group directed, experiential, reflective and applied learning within health and social care students"* (Domac, 2013, p.76).

Olenick et al. (2019) also explain interprofessional education among health disciplines as an experience-based learning and collaborative social adaptation process, where knowledge and values are shared within and among disciplines.

In the literature, interprofessional education is confused with multiprofessional education. Multiprofessional education is defined as;

> *"Occasions when two or more professions learn side by side for whatever reason"* (CAIPE, 2002, P.6).

Activities with more than one professional expert are carried out in this form of education and students do not have to interact with each other (Boztepe and Terzioğlu, 2015). However, in interprofessional education, students interactively find out other professions' roles, competences, knowledge, and skills (Boztepe and Terzioğlu, 2015). As described in the definitions, it needs inter-professional interaction between students during the learning process (Domac, 2013).

When learning with other health professions, students are better educated on their knowledge, capabilities and attitudes that meet the needs of service users and enhance public health (WHO, 2010; Anderson, et al., 2019; Richard, Gagnon and Careau, 2019). It is an effective pedagogical method for making health profession students more prepared to provide health care collaboratively (Odole, Odunaiya, and Ajadi, 2019).

Therefore, it is believed that interprofessional education enhances students' collaboration, confidence, and critical thinking. By way of it, students can build competencies for their team-based roles in health care practice, become team-ready and practice-ready (Simko et al., 2017), figure out how to work collaboratively, and incorporate this ability in future practices (Buring et al., 2009). Interprofessional education is critical for health professionals to be trained for working in an interprofessional team. It can enhance health care services and result in improved health outcomes (Nash et al., 2018; Kim et al., 2019).

When we discuss interprofessional education literature in general, it offers students

from different disciplines to learn some skills, such as being able to function as a team and interact with other team members, and collaborative attitudes. Through these, the delivery of health services and health outcomes are improved.

2.2. Historical Development of the Concept

First of all, Jantsch (1947) referred to the method of "interprofessional education" in which, by mentioning "interdisciplinary" and "transdisciplinary" education, many health care workers receive education together. These concepts were used in sense that health professions learn together. For this reason, “interdisciplinary” and “transdisciplinary” concepts are accepted as the first reference to interprofessional education.

WHO (1978) used “work as a health team” statement in Alma-Ata declaration. It was also mentioned in this declaration that how health professions are educated is important for the proper implementation of the first stage of patient care.

In “Learning together to work together for health” report, “multiprofessional” concept was used different from “multidisciplinary” or “interdisciplinary”. When the description of this concept is considered, it is understood that it has the same meaning with IPE. In this report, WHO emphasized the significance of educating professional together (WHO, 1988).

In the 1990s, understanding of team education among different health professionals increased and studies focusing on a collaborative approach became more important (Barr et al., 2000).

With the impact of these studies mentioned above until the 2000s and positive results from the studies carried out, interprofessional education came to the fore in 2000s. In those years, many studies about interprofessional education programs and contents

were published. Also, differences between the concepts which were used as synonyms have been revealed and clear understanding of the concepts has been provided (WHO, 2010).

In "Framework for Action on Interprofessional Education and Collaborative Practice" report, it was stated that the importance of interprofessional education in terms of providing the skills needed by a collaborative health professional (WHO, 2010).

In recent years, a consensus has been formed around the thought that patients take advantage when interprofessional teams provide their care and academic institutions have responded through looking for ways to placed interprofessional education within their health professions curricula (WHO, 2010; Interprofessional Education Collaborative, 2016).

Even, policies planned to encourage interprofessional education among health professions have begun to concentrate not only on syllabus and clinical care but also on accreditation, licensure and certification necessities, and educational tests (Kashner et al., 2017).

Interprofessional education has been topical issue for almost 40 years (Lapkin, Levett-Jones and Gilligan, 2013). However, especially in recent years, it is thought that since patient safety and quality health care remain on the agenda more frequently, looking for solutions to these issues increase the practicality of interprofessional education in many countries.

WHO (2010) states that 42 countries implement interprofessional education in the world. In the studies which were done in Australia, New Zealand and England, significance of interprofessional education is emphasized for providing a quality health care service (Saini et al., 2011; Olenick et al., 2011). With the support of their governments in developed countries such as Europe, Scandinavia, North America,

England and Canada, this education program is integrated into the curriculum in these countries (Coster et al., 2008; Aase, Aase and Dieckmann, 2013; Lapkin, Levett-Jones and Gilligan, 2013). In addition, The European Interprofessional Education Network study on teaching interprofessional health care and social care in six countries (Liaskos et al., 2009).

It is known that in our country there are very few studies on interprofessional education, whose significance is increasing day by day, and it has not yet been implemented. However, it is located in Level 6 (Undergraduate Education) Qualification within Turkey Higher Education Qualification Framework prepared by The Council of Higher Education. Also, standards regarding working as a team and educating accordingly were determined in the standards prepared by Turkish Accreditation Agency and in the goals of the undergraduate nursing education programs in the Nursing National Core Education Program (2013).

2.3. Principles of Interprofessional Education

Interprofessional education is required for interprofessional collaboration, which is commonly expected by health care teams, including various professions, with regard to the needs of patients. In successful health care teams, team members should have shared goals, be committed to enable the best patient care, and be enthusiast for sharing and taking responsibility during decision making process. Also, they should be able to find out and recognize the full worth of each other's competence and limits. Being broad-minded, respecting each other's ideas and being ready to evaluate actions and functions of the team are other significant competencies needed. (Parsell and Bligh, 1998).

According to Parsell and Bligh (1998), interprofessional education has eight principles. These are;

1. Be useful to develop the service quality.
2. Concentrate on the requirements of people using service.
3. Include people using service and their carers.

4. Encourage collaboration between professionals.
5. Promote interprofessional learning to professions.
6. Improve implementation within the professions.
7. Have respect for contribution of others.
8. Enhance professional satisfaction.

CAIPE (2002) examines the principles of interprofessional education in 11 items.

1. Put people using service in the center.
2. Support collaboration.
3. Reconcile competitive purposes.
4. Consolidate collaborative competence.
5. Depend on teamwork in learning and practice in a sensible justification.
6. Combine interprofessional values.
7. Learning should be comparative.
8. Make use of variety of interactive learning techniques.
9. Take account of qualifications.
10. Measure programs.
11. Show results.

Later, CAIPE (2011) updates the principles of interprofessional education by classifying into three different subjects.

1. Values

- Concentrate on the needs to develop the quality of care, health outcomes and wellbeing.
- Implement equal chances within and between the professions.
- Show respect uniqueness, dissimilarity, and variety within and between the professions.
- Maintain the identity and specialty of each profession.
- Encourage equality between professions in the learning setting.
- Use interprofessional values and perspectives during learning.

2. Process

- Include a process of learning for all professions.
- Promote student to participate in planning, progressing, and evaluating their learning.
- Overview policy and practice seriously from different perspectives.
- Provide the professions to learn with, from and about each other to make sharing of experience and expertise optimized.
- Handle difference while it searches for common ground.
- Provide integration of learning in college and working place.
- Make syntheses of theory and practice.
- Provide evidential teaching and learning.
- Involve separate and particular interprofessional series and placements.
- Implement consistent evaluation criteria and processes for all the participating professions.
- Develop trust towards professional qualifications.
- Include people using service and their carers in processes of teaching and learning.

3. Outcomes

- Reveal interprofessional ability.
- Improve implementation within each profession.
- Enlighten common action to develop services and stimulate change.
- Enhance consequences for individuals, families, and communities.
- Spread its experience.
- Expose improvements to systematic assessment and research.

When we need to analyze these three approaches above, the last one handle the subject in detail and, comprise first two approaches. Based on this, principles of interprofessional education can be examined under three main point. One of them is values which consider individuals, professionals, quality of health care, and interprofessional education. Another one is process which clarifies how interprofessional education should be or what it should include. This shows us how to make better the process of IPE. The last one is outcomes which is interested in evaluation of IPE. This aims to measure, show, and develop the results.

2.4. Objectives of Interprofessional Education

Russell et al. (2017) assert that interprofessional education promotes shared mental models and approaches to attach importance to maximize what each profession contributes to the team. As one profession cannot understand everything or be everywhere, professional differences can provide strength to improve available knowledge and action possibilities for the team. In addition to all these, members of team who provide health care service should have some significant characteristics such as being aware of importance of individuals' roles, able to communicate clearly and effectively in mutual trust and respect, and having professional autonomy (Boztepe and Terzioğlu, 2015)

It is claimed that the key objective of interprofessional education is preparing health care graduates with the competencies and capabilities needed for the collaborative practice skills. Because these skills are necessary for the effective care of the complex health care that face individuals and communities into the future (Levett-Jones et al., 2018; Scrooby, Reitsma and Waggie, 2019). Interprofessional competencies in health care is defined as;

> *"Integrated enactment of knowledge, skills, and values/attitudes that define working together across the professions, with other health care workers, and with patients, along with families and communities, as appropriate to improve health outcomes in specific care contexts"* (Interprofessional Education Collaborative Expert Panel, 2011, p.2).

The competencies expected to be gained in the trainings to be carried out to improve interprofessional collaboration are classified into four different subjects (Interprofessional Education Collaborative Expert Panel, 2011).

1. Values/Ethics: Being capable of collaborating with other professionals to sustain mutual respect and common values.
2. Roles/Responsibilities: Being capable of using a range of knowledge of own role and other professionals' role to properly evaluate and identify health requirements

of patients and community.

3. Interprofessional Communication: Being capable of communicating and interacting with all participants in a respondent and responsible way which promotes a team spirit for prevention and treatment of diseases.
4. Team and Teamwork: Being capable of performing efficiently in various team through implementing constructive values and team approaches in order to plan and provide secure, timely, productive, and equitable patient-centered care.

We can categorize these competencies more generally with classification of Barr (1998). For example, values/ethics and interprofessional communication can be considered as "common competencies" which considered as shared among all professions. Likewise, roles/responsibilities can be considered as "complementary competencies" which separate professions from each other, and team and teamwork can be considered as "collaborative competencies" which is essential to work efficiently with other professions.

Within the context of these core competencies expected to be gained, the objective of interprofessional health education is to enhance health care outcomes through decreasing communication failures, better understanding of other professions, and organizing team objectives related health care (Lawrence et al., 2019).

It is claimed that interprofessional education aims in the long term to develop health care services and outcomes while decreasing costs (WHO, 2010; Charrette et al., 2020). There is convincing proof that well-functioning teams including diverse professions positively affect patient outcomes (Zwarenstein, Goldman and Reeves, 2009).

Also, WHO (2010) addresses interprofessional learning objectives in six different subjects in order to provide students or professionals to gain some competencies.

1. Teamwork:

- being capable of a team leader as well as a team member
- being aware of the difficulties of working as a team

2. Roles and responsibilities:

- having knowledge of own and other professional' roles and responsibilities

3. Communication:

- stating ideas properly to others
- active listening

4. Learning and critical reflection:

- one should represent own relationship seriously in a team
- interprofessional learning methods should be used in work environment

5. Relationship with, and recognizing the needs of, the patient:

- performing a work in a collaborative manner
- being in interaction with patients

6. Ethical practice:

- being conscious of the stereotypes of own and others about health professions
- being aware of significance and validity of each health professional's perspectives

These competencies mentioned above helps students or professionals to know how to work in a team, to communicate, and to establish relationships with other team members for the patient needs. They can recognize their own roles, and others and learn knowledge sharing. They can find out how significant and equal everyone is and learn respect others and their roles. If there is, they can get rid of their prejudiced thoughts. Besides the benefits mentioned previous, they can understand complex and dynamic nature, and unpredictability of the health care sector. And they can learn how to keep up with dynamism of the sector and solve problems with knowledge sharing and collaboration.

2.5. Motivation for Interprofessional Education

The professionals working in health and social care need to work collaboratively to provide person-centered service (Machin et al., 2019). Patients, clients, and service users too often possess circumstances that possess several reasons, so that they need

several treatments which require different abilities and expertise. Since one profession cannot provide a complete care by oneself, collaboration of different professions has a strong influence on good quality care (Reeves et al., 2010).

Therefore, health care services have become progressively patient-centered, in which interprofessional teams transform to enable integrated health care. This is especially significant for patients who have complex and chronic diseases that should be treated by an interprofessional health team (Chua et al., 2019). Interprofessional education has been considered as a critical element to provide collaborative patient-centered care and determine health care requirements (Steinert, 2005).

Patients expect a health care service that is patient-centered, high quality, has positive outcomes, and is delivered with efficiency and impeccable coordination. To achieve this, health care providers depend on an interprofessional team-based patient care to be well-coordinated, and complete (Simko et al., 2017).

WHO, in answer to the change in health care for patient-centered service, has emphasized the requirement for raising health professionals in interprofessional teams to create a collaborative health care labor and enhance health outcomes (Singh, McKenzie and Knippen, 2019; Murphy, Gilbert and Rigby, 2019).

The main objective of health care is giving quality health care service, and this can be provided with sufficient labor (Murphy, Gilbert, and Rigby, 2019). Education and practices that has interprofessional collaboration are considered as innovative strategies to ease the world-wide health labor problem (WHO, 2010).

Today's health care systems are so complicated and faced with continuous and changing challenges (Salih et al., 2019; Hamada et al., 2020). Complex health care needs are best satisfied through the coordinated and collaborative involvement of health professional teams (Walker, Cross and Barnett 2019; Hansen, Holland, and

Munn, 2020). Also, since science and technology are advancing rapidly in the field of health, expectations and demands for quality service are increasing day by day (Boztepe and Terzioğlu, 2015). Health professionals are in need of more collaboration and teamwork abilities to satisfy patient needs because of the change in health care services (Salih et al., 2019; Topperzer et al., 2019). Better outcomes with lower cost can be achieved through coordination approach between health professionals. These health care system challenges and changes can be partially overcame with interprofessional education and collaboration (Salih et al., 2019).

Since health costs and the number of elder are increasing day by day, health professionals need to work more effectively and efficiently, while providing high quality with low cost. Increased cost effectiveness and reduced medical errors may result from interprofessional teamwork. Health professionals also may feel more satisfied (Simko et al., 2017; Kim et al., 2019). These naturally encourage the need for interprofessional collaboration which has positive impacts on faster recovery time, fewer development of complications, higher life and workplace quality, shorter length of hospitalization, higher satisfaction, less sickness rate, lower costs and indirectly interprofessional education (Kim et al., 2019).

Policy makers, providers, and educators in health care claim that the practices that are performed collaboratively and interprofessionally result in much better health outcomes, quality, and care (Institute of Medicine, 2000; WHO, 2010; Nielsen et al., 2014; Haruta and Yamamoto, 2020), while deficiency of collaboration results in less satisfaction, more health failures and higher health costs (Zwarenstein, Goldman and Reeves, 2009).

There are growing and convincing evidence promoting the many benefits of interprofessional education that encourages collaboration among students of diverse health science professions (Williams et al., 2018).

Levett-Jones et al., (2018) assert that health students are prone to concentrate on more

interaction with patients and less interaction with other health students and professionals. Therefore, health graduates frequently have difficulty to interact and collaborate effectively in interprofessional teams because of lack of confidence and abilities. To be able to work as a team, professionals should be self-confident with their profession, eager to acknowledge equality and have collaboration and negotiation skills that required to be learned (Parsell and Bligh, 1998).

Interprofessional team members who interact and collaborate in an effective manner, they share knowledge with each other, make common decisions and have confidence to lead for patient care. Interprofessional education is one of the methods to make students prepared and effective in team-based health care setting (WHO, 2010; Simko et al., 2017).

Simko et al. (2017) and Waltz (2020) found that within the context of interprofessional education, interaction among different health professions' students enhances competences needed for teamwork and confidence in interprofessional team.

Collaboration between professionals is essential in health care to enable optimum patient care that requires different abilities and specialities (Williams et al., 2018; Walker, Cross and Barnett 2019). However, as learners become practitioner, they come under the influence of a professional identity which generate obstacles to collaboration. The understanding of learners about other professions partially specifies professional identity and the attitudes developed throughout professional identity creation may influence collaboration between professionals in health care setting (Lockeman et al., 2017; Reid et al., 2018).

Health students are expected to work collaboratively and effectively in a health care team (Kim et al., 2019), since effective collaboration decreases the common stereotypes, provides better comprehension of professions, increases trust between team members, enhance interaction and, enable quality patient care (WHO, 2010; Milutinović, Lovric and Simin, 2018; Waltz, 2020). Health professionals' attitudes

towards each other's professions have an influence on collaboration and teamwork (Milutinović, Lovric and Simin, 2018). When professionals have understanding of other professionals' competence, functioning of team and patient care become more effective (Simko et al., 2017).

Lochner et al. (2018) think that interprofessional education is a method to decrease health students' attitudes towards each other's professions and prepare them for collaboration, instead of assuming that they will gain these skills with future clinical practices. To provide them to comprehend the advantage of effective collaboration between professionals for a good health care, their attentions should be attracted to both content and learning process. Through interaction, students should be encouraged to make shared decision and listen to each other.

Interprofessional education is also thought as a method to eliminate stereotypes between professions in health and social care. Learning together enhances patient care quality through providing the professions work together effectively. They put away negative attitudes towards each other, by valuing each other's contribution to collaborative work and understanding each other better (Barr, 1998; Olenick et al., 2019). Interprofessional education tries to reduce negative attitudes and provide the understanding of other professions (Conroy, 2019; Lee et al., 2019).

Interprofessional education opportunities lead to a better comprehension of other health professions and clearness of significance of each profession to the final aim of the team (Williams et al., 2018; Harmon et al., 2019).

By way of the studies done within the context of interprofessional education, it was found that students show positive changes on their attitudes towards other professions, even though this issue was not directly addressed (Lockeman et al., 2017), and significant improvements in understanding of other professions (Kim et al., 2019).

2.6. Barriers to Interprofessional Education and Suggestions for Solution

Transition from traditional education to interprofessional education is not easy and needs preparation, and time. In spite of the fact that interprofessional education is useful and widely studied in the literature, there are yet some obstacles that make difficult the practice of it. We can categorize them as physical and psychological. Some studies focus on only physical obstacles, while some concentrate on both physical and psychological.

Williams et al. (2018) explain that interprofessional education necessitates plenty of time, planning, coordination, and proper places. In addition, organizing schedules of students and educators is a significant difficulty to make this kind of education suitable.

For the course development within the scope of interprofessional education, identifying a unifying theme for the course, common student prerequisites, physical and curricular time and space considerations, course registration, merging the learning management system, and defining a common language between professions can be thought as basic difficulties (Simko et al., 2017).

One of the obstacles experienced in implementation of interprofessional education is the difficulty in finding suitable and sufficient teaching staff (Barnsteiner et al., 2007).

The obstacles mentioned above can be given an example for physical difficulties. However, besides them there are some psychological difficulties.

Educational silos, logistics, identification of appropriate curricular themes, embedded biases and hierarchy, faculty development, and resources are regarded as obstacles to interprofessional education (Simko et al., 2017).

Parsell and Bligh (1998) lists barriers to interprofessional education as below;

- Teaching with single subject approach
- Structures and design of curriculum
- Time planning challenges
- Such deficiencies like support from management, commitment, and comprehension of other professions
- Need of separate buildings
- Rearranging of professional limits
- Requirements for new ways of teaching and learning
- Preparing instructors for a new teaching role
- Reluctance to manner change
- Needs of professions
- Discrete professional approaches
- Fiscal limitations

Levett-Jones et al. (2018) describe different professional cultures, power differences and hierarchy in health care as obstacles to interprofessional education and collaboration. Conventional hierarchy in health care and an old approach, in which physicians are considered to possess a superior role as the primary healer make difficult implementation of interprofessional education (Chua et al., 2019).

In addition, Conroy (2019) claims that these factors listed below are considered as barriers to interprofessional education.

- History and culture dissimilarities
- Historical interprofessional competitions
- Professional language dissimilarities
- Dissimilarities in work schedules and routines
- Various degree of preparation, qualities and positions
- Concern for confusion of professional identity
- Dissimilarities in remuneration
- Worrying about clinic liability

Some factors mentioned above are regarded as psychological challenges for interprofessional education such as hierarchy, culture, negative approach of participants.

Stereotyping might be a main element within some of the obstacles to implementation and success of interprofessional education. Some negative attitudes of students or professionals towards other health professions might stem from prejudice or stereotypes (Conroy, 2019).

Another important barrier to collaboration needed to perform interprofessional education effectively is deficiency of understanding of other professions (Lee et al., 2019).

To overcome these barriers mentioned above, some solutions are suggested by researchers. Like the obstacles, solutions can be categorized as physical and psychological.

First of all, Parsell and Bligh (1998) express some solution suggestions as below;

- Authorities who make decision on educational policy and control resources should openly encourage shared learning. Course structures, organization and attitudes are required to be change, if shared learning will be implemented.
- To impose a common sense to students, interprofessional learning is required to be planned, organized, and provided by all related departments.
- Making extra resources for time and place available is significant. To overcome these, institutional strategies are needed to make the situation easier.
- Students should be sure that the learning content is relevant to their chosen area, and shared learning will be beneficial. They should have the similar purposes and expectations. Planned activities should be interesting, based on clinical practice and make use of learning methods that enable students to experience problem-solving in a service-delivery context.

- Educators should be role models for their students and have prior experience in interprofessional teamwork. They may need training in case of major shift in teaching and learning techniques.
- There must be assessment to satisfy the purposes effectively.

In addition, Hall and Zierler (2015) states some solution suggestions to come through these barriers to interprofessional education.

- Ensure the adherence of top leaders of institution.
- Be interprofessional leader.
- Express clearly the purposes of your faculty improvement program.
- Examine the faculty improvement literature that is related to your focus field.
- Develop a faculty improvement structure that is appropriate for the context.
- Help faculty to learn how to improve interprofessional initiatives that are competency focused.
- Concentrate on experience-based learning.
- When making plan for interprofessional improvement, take advantage of vectors as the apparent syllabus and collaboration as the nonapparent syllabus.
- Make time to represent.
- Take advantage of barriers and/or failures of interprofessional education to improve faculty expertise.
- Evaluate outcomes to support continuous improvement.
- Increase expansion of interprofessional education by transferring components of syllabus.
- Make use of knowledge sources centers to promote interprofessional collaboration and speed up the change.
- Develop more durable connection between education and practice.
- Determine new faculty improvement plans to enlarge interprofessional education to numerous professions.

Moreover, Lawlis, Anson, and Greenfield (2014) make list of some suggestions for removing barriers from barriers to interprofessional education.

- Government financing
- Higher education institutions financing
- Programs to develop faculty
- Professional training programs of institutional structures in higher education institutions to support to integrate interprofessional education into health education
- Individual adherence and consistency in all disciplines which take place in interprofessional education programs

When we analyze these suggestions, it is seen they include both physical and psychological dimensions. To cope with psychological obstacles might be more compelling. Physical obstacles can be overcame with essential resources, however, to overcome psychological obstacles need a different mindset and perspective. Providing physical resources such as place, time, staff, financing make easier to implement interprofessional education. Also, evaluating the process enables development of interprofessional education. Developing new things and continuous improvement make it sustainable. On the other hand, good planning and organizing might help all participants to notice benefits and advantages of interprofessional education and feel themselves more comfortable with it. They might believe in it and become more willing for it. They do not resist to change and can adapt easily.

Another significant solution for the implementation of interprofessional education is leadership (Sundberg et al., 2019). The significance of leadership has been emphasized in the literature. Educators included in IPE require to show leadership in both educational and practice settings. Leadership should encourage change of interest and commitment, do planning for change, struggle resistance, set strategy for implementation, allocate human and financial resources, guide IPE accountability, and concentrate on creating mutually understanding, respecting, and valuing of other professions (Ginsburg and Tregunno, 2005; Steinert, 2005; Bennett et al., 2011).

Stereotyping can be seen as a major component of many barriers and associated with biases based on lack of understanding of other professions. Therefore, to overcome

this, Conroy (2019) suggests that students should be allowed to discuss their prejudiced ideas and to understand a profession through the students in that profession.

Moreover, the Contact Theory by George Allport can be used. If groups have a chance to interact, they can have better understanding of each other and value each other's perspective. Yet, this theory should occur under some circumstances such as power equality, shared goals, collaboration between groups, and authority support (Pettigrew, 1998).

CHAPTER 3: AIM OF THE STUDY

Collaboration and teamwork between health professionals have been recognized in recent years as crucial elements to provide quality health care services and patient safety (EL Sayed and Sleem, 2011). It is unfeasible for one health profession to accomplish health care objectives because of complex health care system and increasing technological developments (Caricati et al., 2015; Matziou et al., 2014). Moreover, minor mistreatments can result in human life in health care. Because of these reasons, there have been a growing interest in improving collaboration and relationship quality among health professionals.

For health care, collaboration can be defined as working together of at least two different professions to succeed common goals and objectives. In health care sector, all professionals are significant, but we can say that nurses and physicians are the key element to provide better health care services, since they are more in contact with patients (Anderson, 1996; Sirota, 2007; Caricati et al., 2015). Elsous, Radwan and Mohsen (2017) claim that interprofessional collaboration in health care can improve health outcomes and health care quality. Since team members have their own point of view related to patient care assessment and plan, team members have to collaborate and share information to realize proper treatments (EL Sayed and Sleem, 2011). While interprofessional collaboration and constructive relationship can contribute to positive patient outcomes and quality patient care, non-collaborative relationship and unconstructive interaction between nurses and physicians may negatively affect patient care (Sterchi, 2007). In addition, O'Connor et al. (2016) state that effective teamwork between health professionals is significant for providing quality and safe patient care.

Although it is widely known that interprofessional collaboration and teamwork in health care have great significance for quality health care services, health care management literature offers a wide range of studies examining conflict between health professionals (Bates, 1975; Fagin, 1992; Snelgrove and Hughes, 2000; Tabak

and Orit, 2007; Brown et al., 2011). There are many reasons of this long-lasting conflict; some are related to systems and structures, while some are related to interpersonal relationships, personalities and negative attitudes even stereotyping. To give examples for reasons of conflict related to systems and structures, nurses and physicians are deficient in comprehension of each other's professions due to role boundary. It is complicated that who is in charge of what or who should not be doing what (Brown et al., 2011). Also, stereotypical thoughts and professional cultures significantly affect nurse-physician relationships, such that the nurses working in the countries where professional roles are supplementary express more constructive attitudes towards interprofessional collaboration in comparison with the nurses working in the countries where professional roles are hierarchical (Hojat et al., 2003).

When it comes interpersonal relationships and personalities, both sides blame each other for ineffective teamwork and conflict. From the side of nurses, they claim that it is difficult to express themselves clearly, conflicts are not appropriately solved, and more nurses' input is needed for decision making (Thomas, Sexton and Helmreich, 2003). Also, arrogant behaviors of some physicians can lead to the hostile work environment, causing difficulty to show mutual respect (Tang et al., 2013). In a qualitative research including focus group discussions, nurses stated that since physicians frequently use disrespectful language, they feel themselves inadequate and bullied (Robinson et al., 2010). Physicians are generally in tendency to behave disruptively towards nurses, however sometimes the opposite of it is noticed too (Robinson et al., 2010; Rosenstein, 2002; Rosenstein and O'Daniel, 2005).

On the other side, junior physicians state that nurses generally have difficulty to comprehend the logic of particular care and cures, consequently, nurses prefer to fulfill the tasks that they think as more immediate and significant (Weller, Barrow and Gasquoine, 2011). In addition, although nurses want to make shared decisions with physicians, physicians are generally unwilling to collaborate and share their powers, instead they want to keep their powerful role and positions (Hojat et al., 1999). Power asymmetry between health professionals can derive from education differences, position and dignity that are distinctive to every profession (Hansson et al., 2010).

These negative attitudes towards each other, after a while, may become common knowledge and even affect them at their education stage, internships, and their first hospital experience. Education and professional cultures that vary in regard to clinical environments and countries have significant influence on behaviors of health professionals (Hughes and Fitzpatrick, 2010; Robinson et al., 2010). To prevent this negative attitude development, studies suggest different strategies. Hämel and Vössing (2017) claim that collaboration and positive attitude development between nurses and physicians can be provided through clearly defined structures by means of definition of task and areas of responsibility, and increased accessibility of expertise and skills in patient care to all team members. Moreover, interdisciplinary ward round can improve positive attitudes of nurses and physicians (Fewster-Thuente and Velsor-Friedrich, 2008; Tang et al., 2013). Daily interdisciplinary ward rounds provide nurses and physicians to discuss each patient and set goals together. Communication and interaction between them also are increased by means of this. Length of experience has significant influence on attitudes of nurses and physicians towards each other and collaboration (Sterchi, 2007; Suryanto, Plummer and Copnell, 2016). Through experience of working together, when the above-stated causes of conflict are eliminated, nurses and physicians have sufficient knowledge about each other and find out how to work together. Also, they are able to comprehend their roles and competency better, so they can form positive attitude towards each other.

As exampled above, studies examining positive attitude formation and creating collaboration between nurses and physicians focus on their relationship after they started to work together. However, at that stage, they already might have developed negative attitudes towards each other and overcoming these negative attitudes might be harder. The earlier team-making efforts may result better. Besides, in the past, nurses were considered as subsidiary for physicians. However, in the recent times, nurses have been educated professionally as much as physicians and, they were able to position themselves as a separate profession (Yıldırım et al., 2005). Therefore, now, they are at the level of being able to be educated together, like they have organized a congress together. Collaborative educational experience and inter-professional education are significant strategies to increase positive attitude or prevent negative attitude (EL Sayed and Sleem, 2011; Tang et al., 2013; Boztepe and Terzioğlu, 2015;

Suryanto, Plummer and Copnell 2016; Turrentine et al., 2016; Lockeman et al., 2017). In addition, increased teamwork efforts are required not only in professional life but also in school life (Yıldırım, Aktaş and Akdaş, 2006; Ulusoy and Tokgöz, 2009). Therefore, providing interprofessional collaboration opportunities between health students can be helpful to develop positive attitude for interprofessional collaboration and thus towards each other. Because, when they work together at their education stage, they know each other better with the help of communication and interaction. They can understand each other's professions, cultures, etc., and be respectful to the contribution of others. They can overcome their stereotypes and biased thoughts. It is obvious that collaboration and teamwork between nurses and physicians can be provided with interprofessional education in the best and sustainable way.

In fact, there is a few studies examining whether interprofessional education have an impact on change of attitudes of nurses and physicians towards each other's professions (Ateah et al., 2011; Liaw et al., 2014; Lockeman et al., 2017). These studies are important, but yet very limited. Also, in Turkey, there is no such study that provides nursing and medical students work together in education stage. This study provides a different perspective in terms of the culture, so it can be thought as original.

Therefore, the objective of this study is to comprehend whether studying together during university education will make a positive impact on their attitudes towards each other. Based on the explanations above, the research question was developed.

Research Question: Is there an impact of interprofessional education on positive attitude development?

CHAPTER 4: METHODOLOGY

4.1. Research Design

This study implemented a mixed approach involving both quantitative and qualitative methods. In the quantitative phase, experimental research was carried out to understand whether interprofessional education positively affect the attitude of nursing and medical students towards each other's professions. The research has one independent and one dependent variable. While attending to interprofessional education is the independent variable, change of attitude of nursing and medical students towards each other's professions is the dependent variable. Then, in the qualitative phase, the interprofessional education experience of students were evaluated in two focus group meetings allowing the researchers to gain deep insights.

The research was carried out after it was approved by ethics committee of İzmir University of Economics. (Document No: B.30.2.lEÜSB.0.05.05-20-037)

4.2. Participants

The research was carried out on two main groups of Faculty of Medicine and Faculty of Health Sciences Nursing Department students at İzmir University of Economics. The research was embedded in HSP 202 (Human Society Planet IV) and HEM 318 (Research Methods in Health Sciences II) courses which were compulsory for both 2nd grade medical and 3rd grade nursing students. Therefore, the population of the study consists of 36 medical and 31 nursing students, total of 67 students. All of them were invited to participate in this research with a clear indication that the participation was totally voluntary. 24 medical students and 20 nursing students were willing to return questionnaires at the beginning and end of the research period resulting a response rate of 65.6%.

4.3. Procedures

As indicated above, the research was carried out in HSP 202 (Human Society Planet IV) and HEM 318 (Research Methods in Health Sciences II) courses whose evaluation

criteria consists of a project which require medical and nursing students work together in teams. They were asked to visit homes of elderly people who live alone. During the visits, they collected health related-data and made observations for six weeks. Before the team formation, all the 2nd grade medical and 3rd grade nursing students were gathered in a classroom. Information about the project was provided and questionnaires were distributed with a clear indication of filling in the questionnaire was totally voluntary and would not affect their grade. They were given a private space and 15 minutes to fill in the questionnaire. They were also asked not to write their names but write a pseudonym to match their questionnaire with the one which would be applied at the end of the project. Research objectives were not explained to not manipulate the students' responses. After the participants returned the questionnaires in sealed envelopes, all participants were invited to play series of ice-breaking games for team formation.

For the following six weeks, teams consisting of one or two medical and one nursing student visited the houses in which elderly people live and collected related data and provided support. Teams also asked to submit a mid-report, and at the end of six weeks make a presentation which allow them to spend more time together. At the end of six weeks, all the participants were gathered again in a classroom and asked to fill in the same questionnaire. They were provided a private space and 15 minutes to respond. They were asked to use the same pseudonym and return the questionnaires in sealed envelopes. Questionnaires collected were paired with the previous versions and kept in a locker.

Later on, volunteer students were invited to participate to focus groups meetings. Two different focus group sessions were conducted. Each group consisted of five participants. Only nursing students were included in one session and only medical students in another. As such, the single-discipline groups may provide insights, as respondents may not feel comfortable themselves in front of the other side. Each session lasted around 40 minutes. The researchers proceeded to pose the open-ended questions to participants and stayed neutral and nonjudgmental during the sessions. Participants were asked to share their teamwork experience; what worked, the

obstacles as well as similarities and differences between medical and nursing students. When each focus group session ends, the researchers outlined the summary of the conversation and requested verification from the participants. With the permission of the participants, the researchers recorded focus group discussions and transcribed these recordings verbatim. Figure 1. summarizes the procedure of the research including quantitative and qualitative phases.

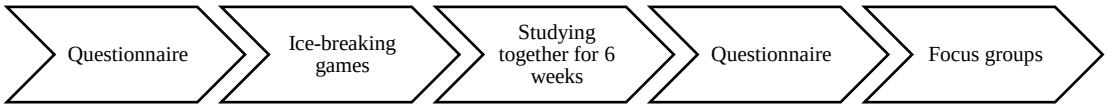

Figure 1. Procedure of the Research

4.4. Instruments

The objective of the study was to determine the positive impact of interprofessional education on the attitudes of medical and nursing students towards each other's professions, if any. Therefore, relevant studies in the literature review were evaluated to create an appropriate attitude scale.

The attitude scale used in this study was adapted from the "Physician Image Perceived in Society Scale" created by Çatı and Öcel (2017). The scale consists of 20 items measuring opinions about nurses/physicians. Participants were asked their level of agreement to each item based on a five-point Likert scale, ranging from one (strongly disagree) to five (strongly agree). Nursing students were indicated their level of agreement about the items which were about physicians, and the medical students did the same for the items about nurses. A sample item in a nursing students' questionnaire was "physicians are arrogant", while the same item was written as "nurses are arrogant" in medical students' questionnaire. The reliability of the questionnaire that measure nursing students' attitudes towards physicians were $\alpha = 0.78$ and $\alpha = 0.70$, and the reliability of the questionnaire that measure medical students' attitudes towards nurses were $\alpha = 0.83$ and $\alpha = 0.88$.

The last section of the questionnaire involved questions related to demographic

characteristics of participants such as gender, age, and whether being familiar with a nurse/physician, and degree of that familiarity, if any.

4.5. Data Analysis

Analysis was carried out through IBM SPSS Statistics 22 package software. An analysis was performed through descriptive statistics for demographic data. To determine whether, after the teamwork, there is a change of attitude of nursing and medical students towards their occupations, Paired-Samples T-Tests were utilized.

Focus groups' audio recordings were transcribed verbatim. The transcripts were read and reread by the researchers. They created their own initial categories of theme for the interprofessional education experience of the students. Later on, they made a list of categories regarding theme with supportive quotations for each theme. To be involved, proof of the themes had to happen during focus group discussions and the researchers had to reach an agreement upon the themes and their supportive proof. At researchers meeting, the researchers reevaluated and discussed the themes, and so they clarified them.

4.6. Results

The majority of participants were female (88.6%, n = 39). All the male participants were medical students (11.4%, n = 5) as nursing was still popular among women in Turkey. Participants' ages varied across the total sample ranging from 19 to 33 years with a mean age of 20.95 years (SD = 2.36). Also, the majority of participants had no familiarity or kinship with a nurse or physician (82%, n=36). Table 1. shows the demographic characteristics for nursing and medical students' samples separately.

Table 1. Demographic Characteristics of Nursing and Medical Students

		Nursing	Medicine
Age	Mean	21.85	20.17
	SD	2.78	1.61

Gender	Female (%)	100	79.2
	Male (%)	0	20.8
Being familiar with a nurse/physician	Yes (%)	20	16.7
	No (%)	80	83.3

The scores of medical and nursing students distributed normally. There was no significant difference between the two groups on the score variances.

For all students, there was a statistically significant increase in positive evaluations of each other's professions ($M_1 = 3.49$, SD = 0.47; $M_2 = 3.90$, SD = 0.49), t (40) = 4.95, $P < 0.0005$. Also, eta squared statistic shows us magnitude of impact and it was 0.38 indicating large impact as according to Cohen (1987), when it is greater than 0.14, it refers to large impact.

Results of focus group analyses revealed that 3 themes were emerged in categorization of the interprofessional education experience of students. The first theme was named as *"benefit of interprofessional education"*. Participants agreed on the idea that interprofessional education experience was beneficial for them in many aspects.

Pseudonyms were created for the focus group participants. Nursing students were named N with participant number (e.g., N1, N2…), while medical students were named M with participant number (e.g., M1, M2…).

M_1: "It was a useful study where we exchanged ideas, learned new things from each other and got to know each other better."

N_1: "As nursing students, we already knew the significance of teamwork, as we had internships earlier than medical students, but medical students also noticed with this study."

M_2: "I was already aware of the significance of teamwork and nurses, but I understood better with this work."

Based on these, it can be stated that interprofessional teamwork which was carried out at their education stage provided them to understand each other's occupations and the significance of teamwork better and earlier. Moreover, when they were still at education stage, they had experience of working together. This finding is in line with the interprofessional education literature as it was stated by Lawrence et al. (2019) it was an effective tool to promote teamwork. Teamwork between health professionals is critical for patient care quality (Hansson et al., 2010). Findings revealed that interprofessional education also provided peer learning as Bennett et al. (2011) stated that interprofessional education provides opportunities for peer learning.

The second theme, *"understanding each other"*, was emerged in both two focus group meetings. Participants stated that they were pleased with the attitudes of another student group.

N2: "We were a better and more harmonious team than I thought. I was able to express my thoughts freely and we made decisions together."

M3: "She was very friendly and had more experience than me, as they had more internships than we did, and when I asked for any help, she was very enthusiastic and did not find odd that there were things that I did not know."

Apparently, their attitudes towards each other were better and more positive than they expected, they were surprised in some matters. They were able to share their weaknesses with each other, without worrying about protecting their image. Sirota (2007) claimed that understanding each other as well as each other's professions provide professionals to have more positive attitude towards each other.

The last theme was about the positive change on their thoughts and attitudes about each other and each other's occupations. Hence, this theme was named *"attitude change"*.

N3: "To be honest, there were situations that sounded interesting to me, while I was doing my internship, I observed that physicians or medical students were generally more active or expected to be. But in this study, we had more experience. Therefore, I was more active and my teammate clearly and heartfeltly expressed the issues he did not know well, and he accepted and applied my suggestions and assistance."

M4: "She was professionally much better than I expected and had self-confidence. I realized that nurses can be knowledgeable and professional as much as physicians through experience."

M5: "She was very effective and good in communicating with the patient, she was able to meet the patient's expectations, and empathize with the patient."

With this study, it is obvious that they encountered and experienced situations different from what they normally thought or experienced. Through this, they had more positive attitudes and thought towards each other and each other's occupations. Nursing students earned more medical students' respect with their knowledge and experience, as in study of Ateah et al. (2011). This finding was supportive for interprofessional education literature in terms of improving different health professionals' attitudes towards each other's professions (Hean et al., 2006; Ateah et al., 2011; Liaw et al., 2014; Lockeman et al., 2017).

CHAPTER 5: DISCUSSION AND CONCLUSION

Interprofessional collaboration has a significant contribution on health professionals' attitudes towards each other. Students can develop positive, productive and collaborative relationships within the health care team through the support of learning opportunities in early stage. In this study, after experience of interprofessional education, students rated all health students higher in comparison with their rates before experience of interprofessional education. The results of this study are significant for the educators of health professions. Education programs of health professions need to be promoted for providing interprofessional learning settings. Therefore, students can experience interprofessional education. Through experience of interprofessional education, the basis for interprofessional collaboration in the future to enable good patient care can be established.

Respectful relationship and being aware of each health profession's competence are necessary for working effectively in an interprofessional health care team. Without a compatible effort to educate health professions together, effective working of health care teams as expected is impossible. Persistence of negative attitudes due to the lack of proper education is considered as a significant reason for the difficulty to working effectively. This research showed that attitudes of students towards other health profession which would be their potential teammate in the future are more positive, after they experience working and learning together. Existing initiatives aim change of health education and ultimately improvement of their teamwork experience in practice. This study demonstrated that interprofessional education experiences provide opportunities to change students' thoughts and interaction with each other. Also, this interprofessional working experience at education stage provides a potential to prepare future health care teams to support collaborative patient-centered care.

As a whole, this study showed that in an interprofessional team, peer learning experience of nursing and medical students caring elderly people caused positive changes in their attitudes towards each other’s professions.

Findings of the qualitative part of this study also showed that the interprofessional education experience improved students' attitudes towards interprofessional learning among all students regardless of profession, though the research did not aim to examine this issue. This improvement is not surprising, stated research demonstrating that interprofessional education experience is well accepted so that it enhances attitudes towards practice between professionals (Lockeman et al., 2017). As we expected, more significant is that interprofessional education have significant impact on change of attitudes of health profession students about each other's professions. Both this research and another three research (Ateah et al., 2011; Liaw et al., 2014; Lockeman et al., 2017) showed that interprofessional education has a great potential to affect professional attitudes about other professions. Our study is homogeneous, the change of nursing and medical students' attitudes towards each other's professions were not analyzed separately in terms of profession, unlike the study of Lockeman et al. (2017). Moreover, such factors like gender, age etc. which can have impact on nursing and medical students' attitudes towards each other's professions were not considered. For the future research, such factors may be taken into consideration.

In this study, nursing and medical students' rates of change on their attitudes towards each other's professions were alike with the results of earlier studies. These two professions were different in terms of their academic skills, decision making rights and responsibilities, interpersonal and teamwork skills. In spite of the differences in professional experiences, the findings of this study showing that health profession students' attitudes towards other health professions may stem from their stereotypical thoughts rather than experiences are supportive for findings of previous studies (Hean et al, 2006; Ateah et al., 2011), even though in the literature there are studies claiming level of experience has an impact on attitudes of health professionals towards each other's professions (Sterchi, 2007; Suryanto, Plummer and Copnell, 2016). Because, in our study, our participants' experience level was different. While nursing students had done a lot of internships, medical students had not yet done internships. However, attitudes of both professions' students positively changed towards each other's professions. Therefore, the educators of health can take responsibility of promoting teamwork among different health professionals at education stage instead of leaving it to experience. This study can be considered as evidential that educating medical and

nursing students in interprofessional can have a significant effect on their stereotypes towards each other's professions. Moreover, it can be obviously seen from the results that through improving nursing and medical students' constructive attitudes towards each other professions, their perception about collaboration between nurse and physician can be also enhanced.

Besides interprofessional education has significant impact on attitudes of health students towards each other's professions, our findings may indicate a necessity of interprofessional education which concentrate directly on specialties of each health profession to prevent negative attitudes. Further studies should be done in order to understand effects of traditional education on attitudes and contribution of interprofessional education in changing these attitudes. Moreover, in this study, attitudes of nursing and medical students significantly changed. As the change on attitudes was favorable and significant, the origin of prior attitudes is worth further examine.

Certainly, a positive change on nursing and medical students' attitudes towards each other's professions is significant in terms of health care practices and outcomes. However, the effect of it in the long term are the most important. Through their positive attitudes towards each other, they can work collaboratively and efficiently, so they can provide more quality health care services. The biggest question is whether this positive change is persistent. With a relatively more interaction between students, this experience of interprofessional education provided a useful effect. Nevertheless, as students continue to receive traditional education, the advantage of interprofessional education may decrease. For this reason, determining the optimum, scheduling and frequency of interprofessional education is very significant to promote long-term change in practice, because it requires intensive resource.

5.1. Limitations and Future Research

This study had some limitations. Firstly, there was no control group because of the small population of interprofessional education participants. As the total number of

participants was 67, and only 44 of them participated to the study, setting control group and experiment groups separately would decrease the applicability t-tests. Therefore, for this study, I prefer to work with experimental group only. However, in a future study, a more comprehensive experimental design involving control group can be applied.

Moreover, the effectiveness of interprofessional education can be investigated among other professions, not only health professions. For the future, research can be done by taking into consideration of these limitations and recommendations. Interprofessional education can be tested in different situations, and this can be effective in making it more widespread.

REFERENCES

Aase, I., Aase, K. and Dieckmann, P. (2013) *Teaching interprofessional teamwork in medical and nursing education in Norway: A content analysis*, Journal of Interprofessional Care, 27 (3), pp. 238-245.

Anderson, A. (1996) *Nurse-physician interaction and job satisfaction*, Nursing Management, 27 (6), pp. 33-36.

Anderson, O. S., August, E., Goldberg, P.K., Youatt, E. and Beck, A.J. (2019) *Developing a Framework for Population Health in Interprofessional Training: An Interprofessional Education Module*, Frontiers in Public Health, Vol. 7(58) [Online]. Available at https://www.frontiersin.org/articles/10.3389/fpubh.2019.00058/full (Accessed 11 November 2019).

Ateah, C. A., Snow, W., Wener, P., MacDonald, L., Metge, C., Davis, P., Fricke, M., Ludwig, S. and Anderson, J. (2011) *Stereotyping as a barrier to collaboration: Does interprofessional education make a difference?* Nurse Education Today, 31 (2), pp. 208-213.

Barnsteiner, J.H., Disch, J.M., Hall, L., Mayer, D., and Moore, S.M. (2007) *Promoting interprofessional education*, Nursing Outlook, 55 (3), pp. 144-150.

Barr, H. (1998) *Competent to collaborate: towards a competency-based model for interprofessional education*, Journal of Interprofessional Care, 12 (2), pp. 181-187.

Barr, H., Freeth, D., Hammick, M., Koppel, I. and Reeves, S. (2000). *Evaluations of Interprofessional Education. A United Kingdom Review for Health and Social Care*. The United Kingdom Centre for the Advancement of Interprofessional Education. Fareham.

Bates, B. (1975) *Physician and Nurse Practitioner: Conflict and Reward*, Annals of Internal Medicine, 82 (5), pp. 702-706.

Bennett, P.N., Gum, L., Lindeman, I., Lawn, S., McAllister, S., Richards, J., Kelton, M. and Ward, H. (2011) *Faculty perceptions of interprofessional education*, Nurse Education Today, 31 (6), pp. 571-576.

Boztepe, H. and Terzioğlu, F. (2015) *Sağlık Eğitiminde Meslekler Arası Eğitim*, Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi, 18 (3), pp. 222-228.

Brown, J., Lewis, L., Ellis, K., Stewart, M., Freeman, T.R. and Kasperski, M.J. (2011) *Conflict on interprofessional primary health care teams - can it be resolved?* Journal of Interprofessional Care, 25 (1), pp. 4-10.

Buring, S.M., Bhushan, A., Broeseker, A., Conway, S., Duncan-Hewitt, W., Hansen, L. and Westberg, S. (2009) *Interprofessional Education: Definitions, Student Competencies, and Guidelines for Implementation*, American Journal of Pharmaceutical Education, Vol. 73(4), 59 [Online]. Available at https://pubmed.ncbi.nlm.nih.gov/19657492/ (Accessed 5 November 2019).

Caricati, L., Guberti, M., Borgognoni, P., Prandi, C., Spaggiari, I., Vezzani, E. and Iemmi, M. (2015) *The role of professional and team commitment in nurse-physician collaboration: A dual identity model perspective*, Journal of Interprofessional Care, 29 (5), pp. 464-468.

Carpenter, J. (1995) *Interprofessional education for medical and nursing students: evaluation of a programme*, Medical Education, 29 (4), pp. 265-272.

Centre for the Advancement of Interprofessional Education. (2002). *Interprofessional Education. Today, Yesterday and Tomorrow*. Fareham.

Centre for the Advancement of Interprofessional Education. (2011). *Principles of Interprofessional Education*. Fareham.

Charrette, A.L., Sullivan, K.M., Kucharski-Howard, J., Seed, S. and Lorenz, L. (2020) *Physical therapy and pharmacy interprofessional education in the context of a university pro bono physical therapy setting*, Journal of Interprofessional Care, 34 (3), pp. 315-323.

Chua, S.S., Lai, P.S.M., Sim, S.M., Tan, C.H. and Foong, C.C. (2019) *Acceptance of interprofessional learning between medical and pharmacy students in a prescribing skills training workshop: pre-post intervention study*, BMC Medical Education, Vol. 19, 101 [Online]. Available at https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-019-1525-y (Accessed 12 December 2019).

Cohen, J. (eds.) (1987). *Statistical Power Analysis for the Behavioral Sciences*. Revised Edition. Hillsdale: Lawrence Erlbaum. Available at http://www.utstat.toronto.edu. (Accessed 10 May 2019).

Conroy, C. (2019) *Stereotyping as a Major Barrier to Achievement of Interprofessional Education Competencies: A Narrative Literature Review*, The Internet Journal of Allied Health Sciences and Practice, Vol. 17(3), 8 [Online]. Available at https://nsuworks.nova.edu/ijahsp/vol17/iss3/8/ (Accessed 25 November 2019).

Coster, S., Norman, I., Murrells, T., Kitchen, S., Meerabeau, E., Sooboodoo, E. and d'Avray, L. (2008) *Interprofessional attitudes amongst undergraduate students in the health professions: A longitudinal questionnaire survey*, International Journal of Nursing Studies, 45 (11), pp. 1667-1681.

Cruess, R.L., Cruess, S.R., Boudreau, J.D., Snell, L. and Steinert, Y. (2015) *A Schematic Representation of the Professional Identity Formation and Socialization of Medical Students and Residents: A Guide for Medical Educators*, Academic Medicine, 90 (6), pp. 718-725.

Çatı, K. and Öcel, Y. (2017) *Toplumda Algılanan Doktor İmajının Sağlık Hizmet Kalitesi Üzerine Etkisi: Bolu ve Düzce Örneği*, Düzce Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 7 (2), pp. 176-205.

Domac, S. (2013) *Introduction of Interprofessional Education in Turkey with Appropriate Learning Theories*, Journal of Education and Humanities: Theory and Practice, 4 (8), pp. 75-92.

Elsous, A., Radwan, M. and Mohsen, S. (2017) *Nurses and Physicians Attitudes toward Nurse-Physician Collaboration: A Survey from Gaza Strip, Palestine*, Nursing Research and Practice, Vol. 2017 [Online]. Available at https://www.hindawi.com/journals/nrp/2017/7406278/ (Accessed 24 February 2019).

EL Sayed, K.A. and Sleem, W.F. (2011) *Nurse - physician collaboration: A comparative study of the attitudes of nurses and physicians at Mansoura University Hospital*, Life Science Journal, 8 (2), pp. 140-146.

Fagin, C.M. (1992) *Collaboration between Nurses and Physicians: No Longer a Choice*, Academic Medicine: Journal of the Association of American Medical

Colleges, 67 (5), pp. 295-303.

Fewster-Thuente, L. and Velsor-Friedrich, B. (2008) *Interdisciplinary Collaboration for Healthcare Professionals*, Nursing Administration Quarterly, 32 (1), pp. 40-48.

Ginsburg, L. and Tregunno, D. (2005) *New approaches to interprofessional education and collaborative practice: Lessons from the organizational change literature*, Journal of Interprofessional Care, Vol. 19(sup1): 177-187 [Online]. Available at https://www.tandfonline.com/doi/abs/10.1080/13561820500083105 (Accessed 10 December 2019).

Hall, P. (2005) *Interprofessional teamwork: Professional cultures as barriers*, Journal of Interprofessional Care, Vol. 19 (sup1): 188-196 [Online]. Available at https://www.tandfonline.com/doi/abs/10.1080/13561820500081745 (Accessed 6 December 2019).

Hall, L.W. and Zierler, B.K. (2015) *Interprofessional Education and Practice Guide No. 1: Developing faculty to effectively facilitate interprofessional education*, Journal of Interprofessional Care, 29 (1), pp. 3-7.

Hamada, S., Haruta, J., Maeno, T., Maeno, T., Suzuki, H., Takayashiki, A., Inada, H., Naito, T., Tomita, M., Kanou, N. and Baba, T. (2020) *Effectiveness of an interprofessional education program using team-based learning for medical students: A randomized controlled trial*, Journal of General and Family Medicine, 21 (1), pp. 2-9.

Hämel, K. and Vössing, C. (2017) *The collaboration of general practitioners and nurses in primary care: a comparative analysis of concepts and practices in Slovenia and Spain*, Primary Health Care Research and Development, 18, pp. 492-506.

Hansen, M.D., Holland, M.M. and Munn, J. (2020) *Teaching Note-A Call for Social Work Education Modification: Moving Toward a Model of Interprofessional Education*, Journal of Social Work Education, 56 (3), pp. 595-601.

Hansson, A., Arvemo, T., Marklund, B., Gedda, B. and Mattsson, B. (2010) *Working together - primary care doctors' and nurses' attitudes to collaboration*, Scandinavian Journal of Public Health, 38 (1), pp. 78-85.

Harmon, M.T., Farrell, C.F., Carter, V., Randall, D.A., Loeb, A. and Jain, T. (2019)

Launching into interprofessional education: graduate students learning and growing together, *Journal of Interprofessional Care*, 33 (5), pp. 590-592.

Haruta, J. and Yamamoto, Y. (2020) *Realist approach to evaluating an interprofessional education program for medical students in clinical practice at a community hospital*, Medical Teacher, 42 (1), pp. 101-110.

Hean, S., Clark, J.M., Adams, K. and Humphris, D. (2006) *Will opposites attract? Similarities and differences in students' perceptions of the stereotype profiles of other health and social care professional groups*, Journal of Interprofessional Care, 20 (2), pp. 162-181.

Hojat, M., Fields, S.K., Veloski, J.J., Griffiths, M., Cohen, M.J.M. and Plumb, J.D. (1999) *Psychometric Properties of an Attitude Scale Measuring Physician-Nurse Collaboration*, Evaluation, and the Health Professions, 22 (2), pp. 208-220.

Hojat, M., Gonnella, J.S., Nasca, T.J., Fields, S.K., Cicchetti, A., Scalzo, A.L., Taroni, F., Amicosante, A.M.V., Macinati, M., Tangucci, M., Liva, C., Ricciardi, G., Eidelman, S., Admi, H., Geva, H., Mashiach, T., Alroy, G., Alcorta-Gonzalez, A., Ibarra, D. and Torres-Ruiz, A. (2003) *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*, International Journal of Nursing Studies, 40 (4), pp. 427-435.

Hughes, B. and Fitzpatrick, J. (2010) *Nurse-physician collaboration in an acute care community hospital*, Journal of Interprofessional Care, 24 (6), pp. 625-632.

Interprofessional Education Collaborative (2011). *Core Competencies for Interprofessional Collaborative Practice*. Report of an Expert Panel. Washington.

Interprofessional Education Collaborative. (2016). *Core competencies for interprofessional collaborative practice*. 2016 update. Washington.

Jantsch, E. (1947) *Inter- and Transdisciplinary University: A System Approach to Education and Innovation*, Higher Education Quarterly, 1 (1), pp. 7-37.

Kashner, T.M., Hettler, D.L., Zeiss, R.A., Aron, D.C., Bernett, D.S., Brannen, J.L., Byrne, J.M., Cannon, G.W., Chang, B.K., Dougherty, M.B., Gilman, S.C., Holland, G.J., Kaminetzky, C.P., Wicker, A.B. and Keitz, S.A. (2017) *Has Interprofessional*

Education Changed Learning Preferences? A National Perspective, Health Services Research, 52 (1), pp. 268-290.

Kim, Y.J., Radloff, J.C., Stokes, C.K. and Lysaght, C.R. (2019) *Interprofessional education for health science students' attitudes and readiness to work interprofessionally: a prospective cohort study*, Brazilian Journal of Physical Therapy, 23 (4), pp. 337-345.

Lapkin, S., Levett-Jones, T. and Gilligan, C. (2013) *A systematic review of the effectiveness of interprofessional education in health professional programs*, Nurse Education Today, 33 (2), pp. 90-102.

Lawlis, T.R., Anson, J. and Greenfield, D. (2014) *Barriers and enablers that influence sustainable interprofessional education: a literature review*, Journal of Interprofessional Care, 28 (4), pp. 305-310.

Lawrence, J.C., Knol, L.L., Clem, J., De La O, R., Henson, C.S. and Streiffer, R.H. (2019) *Integration of Interprofessional Education (IPE) Core Competencies into Health Care Education: IPE Meets Culinary Medicine*, Journal of Nutrition Education and Behavior, 51 (4), pp. 510-512.

Lee, L.S., Grochowski, C.O., Valiga, T.M., Isenburg, M. and McNeill, D.B. (2019) *Building Social Capital to Foster Interprofessional Education: The Interprofessional Educator Academy*, Academic Medicine, 94 (11), pp. 1685-1690.

Levett-Jones, T., Burdett, T., Leng Chow, Y., Jönsson, L., Mathews, L.R., McAllister, M., Pooler, A., Tee, S. and Wihlborg, J. (2018) *Case Studies of Interprofessional Education Initiatives from Five Countries*, Journal of Nursing Scholarship, 50 (3), pp. 324-332.

Liaskos, J., Frigas, A., Antypas, K., Zikos, D., Diomidous, M. and Mantas, J. (2009) *Promoting interprofessional education in health sector within the European Interprofessional Education Network*, International Journal of Medical Informatics, 78 (sup1), pp. 43-47.

Liaw, S.Y., Siau, C., Zhou, W.T. and Lau, T.C. (2014) *Interprofessional simulation-based education program: a promising approach for changing stereotypes and improving attitudes toward nurse-physician collaboration*, Applied Nursing Research, 27 (4), pp. 258-260.

Lochner, L., Girardi, S., Pavcovich, A., Meier, H., Mantovan, F. and Ausserhofer, D. (2018) *Applying interprofessional Team-Based Learning in patient safety: a pilot evaluation study*, BMC Medical Education, Vol. 18(1), 48 [Online]. Available at https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-018-1164-8 (Accessed 26 October 2019).

Lockeman, K.S., Appelbaum, N.P., Dow, A.W., Orr, S., Huff, T.A., Hogan, C.J. and Queen, B.A. (2017) *The effect of an interprofessional simulation-based education program on perceptions and stereotypes of nursing and medical students: a quasi-experimental study*, Nurse Education Today, 58, pp. 32-37.

Machin, L.L., Bellis, K.M., Dixon, C., Morgan, H., Pye, J., Spencer, P. and Williams, R.A. (2019) *Interprofessional education and practice guide: designing ethics-orientated interprofessional education for health and social care students*, Journal of Interprofessional Care, 33 (6), pp. 608-618.

Matziou, V., Vlahioti, E., Perdikaris, P., Matziou, T., Megapanou, E. and Petsios, K. (2014) *Physician and nursing perceptions concerning interprofessional communication and collaboration*, Journal of Interprofessional Care, 28 (6), pp. 526-533.

Milutinović, D., Lovric, R. and Simin, D. (2018) *Interprofessional education and collaborative practice: Psychometric analysis of the Readiness for Interprofessional Learning Scale in undergraduate Serbian healthcare student context*, Nurse Education Today, 65, pp. 74-80.

Murphy, G.T., Gilbert, J.H. and Rigby, J. (2019) *Integrating interprofessional education with needs-based health workforce planning to strengthen health systems*, Journal of Interprofessional Care, 33 (4), pp. 343-346.

Nash, W.A., Hall, L.A., Ridner, S.L., Hayden, D., Mayfield, T., Firriolo, J., Hupp, W., Weathers, C. and Crawford, T. N. (2018) *Evaluation of an interprofessional education program for advanced practice nursing and dental students: The oral-systemic health connection*, Nurse Education Today, 66, pp. 25-32.

Nielsen, M., Olayiwola, J. N., Grundy, P., and Grumbach, K. (2014). *The Patient Centered Medical Home's Impact on Cost and Quality*. An Annual Update of the Evidence, 2012-2013. Patient-Centered Primary Care Collaborative. Washington.

O'Connor, P., O'dea, A., Lydon, S., Offiah, G., Scott, J., Flannery, A., Lang, B., Hoban, A., Armstrong, C. and Byrne, D. (2016) *A mixed-methods study of the causes and impact of poor teamwork between junior doctors and nurses*, International Journal for Quality in Health Care, 28 (3), pp. 339-345.

Odole, A.C., Odunaiya, N.A. and Ajadi, O.I. (2019) *Interprofessional education among Nigerian clinical students: implications for interprofessional care*, Journal of Interprofessional Care, 33 (6), pp. 645-653.

Olenick, M., Flowers, M., Munecas, T. and Maltseva, T. (2019) *Positive and Negative Factors That Influence Health Care Faculty Intent to Engage in Interprofessional Education (IPE),* Healthcare, Vol. 7(1), 29 [Online]. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6473740/ (Accessed 2 November 2019).

Olenick, M., Foote, E., Vanston, P., Szarek, J., Vaskalis, Z., Dimattio, M.J. and Smego, R.A. (2011) *A regional model of interprofessional education*, Advances in Medical Education and Practice, 2, pp. 17-23.

Parsell, G. and Bligh, J. (1998) *Interprofessional Learning*, Postgraduate Medical Journal, 74 (868), pp. 89-95.

Pettigrew, T. (1998) *Intergroup Contact Theory*, Annual Review of Psychology, 49, pp. 65-85.

Reeves, S., Lewin, S., Espin, S. and Zwarenstein, M. (eds.) (2010). *Interprofessional Teamwork for Health and Social Care*. London: Wiley-Blackwell. Available at academia.edu. (Accessed 1 December 2019).

Reid, A.M., Fielden, S.A., Holt, J., MacLean, J. and Quinton, N.D. (2018) *Learning from interprofessional education: A cautionary tale*, Nurse Education Today, 69, pp. 128-133.

Richard, A., Gagnon, M. and Careau, E. (2019) *Using reflective practice in interprofessional education and practice: a realist review of its characteristics and effectiveness*, Journal of Interprofessional Care, 33 (5), pp. 424-436.

Robinson, F.P., Gorman, G., Slimmer, L.W. and Yudkowsky, R. (2010) *Perceptions of effective and ineffective nurse-physician communication in hospitals*, Nursing

Forum, 45 (3), pp. 206-216.

Rosenstein, A.H. (2002) *Nurse-Physician Relationships: Impact on Nurse Satisfaction and Retention*, The American Journal of Nursing, 102 (6), pp. 26-34.

Rosenstein, A.H. and O'Daniel, M. (2005) *Disruptive behavior and clinical outcomes: perceptions of nurses and physicians*, The American Journal of Nursing, 105 (1), pp. 54-64.

Russell, R.G., Davidson, H., Rhoads, C. and Petrusa, E. R. (2017) *How do we understand the determinants of health? An exploration of distributed knowledge and interprofessional health sciences education*, Journal of Interprofessional Care, 31 (1), pp. 118-121.

Saini, B., Shah, S., Kearey, P., Bosnic-Anticevich, S., Grootjans, J. and Armour, C. (2011) *An interprofessional learning module on asthma health promotion*, American Journal of Pharmaceutical Education, Vol. 75(2), 30 [Online]. Available at https://www.ajpe.org/content/75/2/30 (Accessed 3 December 2019).

Salih, S., Gameraddin, M., Kamal, S., Alsadi, M., Tamboul, J. and Alsultan, K. (2019) *The Readiness for Interprofessional Education (IPE) In the School Setting Among the Internship Students of Applied Medical Sciences at Taibah University*, Advances in Medical Education and Practice, 10, pp. 843-848.

Scrooby, B., Reitsma, G.M. and Waggie, F. (2019) *A practice model for interprofessional education in a first year anatomy class*, Journal of Interprofessional Care, 33 (3), pp. 313-320.

Simko, L.C., Rhodes, D.C., McGinnis, K. A. and Fiedor, J. (2017) *Students' Perspectives on Interprofessional Teamwork before and after an Interprofessional Pain Education Course*, American Journal of Pharmaceutical Education, Vol. 81(6), 104 [Online]. Available at https://www.ajpe.org/content/81/6/104 (Accessed 16 November 2019).

Singh, S., McKenzie, N. and Knippen, K.L. (2019) *Challenges and innovations in interprofessional education: Promoting a public health perspective*, Journal of Interprofessional Care, 33 (2), pp. 270-272.

Sirota, T. (2007) *Nurse/physician relationships: improving or not?* Nursing, 37 (1),

pp. 52-55.

Snelgrove, S. and Hughes, D. (2000) *Interprofessional relations between doctors and nurses: perspectives from South Wales*, Journal of Advanced Nursing, 31 (3), pp. 661-667.

Steinert, Y. (2005) *Learning together to teach together: Interprofessional education and faculty development*, Journal of Interprofessional Care, Vol. 19(sup1): 60-75 [Online]. Available at https://www.tandfonline.com/doi/abs/10.1080/13561820500081778 (Accessed 4 November 2019).

Sterchi, L. S. (2007) *Perceptions that affect physician - nurse collaboration in the perioperative setting*, Aorn Journal, 86 (1), pp. 45-57.

Sundberg, K., Reeves, S., Josephson, A. and Nordquist, J. (2019) *Framing IPE. Exploring meanings of interprofessional education within an academic health professions institution*, Journal of Interprofessional Care, 33 (6), pp. 628-635.

Suryanto, S., Plummer, V. and Copnell, B. (2016) *Collaboration between nurses and physicians in an Indonesian Emergency Department*, Australasian Emergency Nursing Journal, 19 (2), pp. 82-89.

Tabak, N. and Orit, K. (2007) *Relationship between how nurses resolve their conflicts with doctors, their stress and job satisfaction*, Journal of Nursing Management, 15 (3), pp. 321-331.

Tang, C.J., Chan, S.W., Zhou, W.T. and Liaw, S.Y. (2013) *Collaboration between hospital physicians and nurses: an integrated literature review*, International Nursing Review, 60 (3), pp. 291-302.

Thomas, E.J., Sexton, J.B. and Helmreich, R.L. (2003) *Discrepant Attitudes about Teamwork among Critical Care Nurses and Physicians*, Critical Care Medicine, 31 (3), pp. 956-959.

Topperzer, M.K., Hoffmann, M., Roug, L.I., Larsen, H.B., Lausen, B., Schimiegelow, K. and Sorensen, J.L. (2019) *Unmet need for interprofessional education in paediatric cancer: a scoping review*, Supportive Care in Cancer, 27, pp. 3627-3637.

Turrentine, F.E., Rose, K.M., Hanks, J.B., Lorntz, B., Owen, J.A., Brashers, V.L. and

Ramsdale, E.E. (2016) *Interprofessional training enhances collaboration between nursing and medical students: A pilot study*, Nurse Education Today, 40, pp. 33-38.

Ulusoy, H. and Tokgöz, D.M. (2009) *Hekim ve Hemşirelerin Ekip Çalışmasına İlişkin Görüşleri*, Pamukkale Tıp Dergisi, 2 (2), pp. 55-61.

Walker, L.E., Cross, M. and Barnett, T. (2019) *Students' experiences and perceptions of interprofessional education during rural placement: A mixed methods study*, Nurse Education Today, 75, pp. 28-34.

Waltz, L.A. (2020) *Determining the effectiveness of an interprofessional educational intervention for teamwork competencies among nursing, physical therapy, and pharmacy students*, Journal of Interprofessional Care, 34 (6), pp. 826-828.

Weller, J.M., Barrow, M. and Gasquoine, S. (2011) *Interprofessional collaboration among junior doctors and nurses in the hospital setting*, Medical Education, 45 (5), pp. 478-487.

Williams, C., Gensheimer, C., Halle, J. and Moss, P. (2018) *Student Perspectives of an Interprofessional Education Experience for Nurse Anesthetist Students and Physical Therapy Students in a Cadaver-Based Anatomy Review Course*, Open Access Library Journal, 5 (8), pp. 1-15.

World Health Organization. (1978). *Declaration of Alma-Ata*. World Health Organization, Geneva.

World Health Organization. (1988). *Learning Together to Work Together for Health*. Report of a WHO Study Group on Multiprofessional Education of Health Personnel: The Team Approach. World Health Organization, Geneva.

World Health Organization (2010). *Framework for Action on Interprofessional Education and Collaborative Practice*. World Health Organization, Geneva.

Yıldırım, A., Aktaş, T. and Akdaş, A. (2006) *Tıp Fakültesi ve Hemşirelik Yüksek Okulu Öğrencilerinde Hekim-Hemşire İşbirliği*, TSK Koruyucu Hekimlik Bülteni, 5 (3), pp. 166-175.

Yıldırım, A., Ateş, M., Akıncı, F., Ross, T., Selimen, D., Issever, H., Erdim, A. and Akgün, M. (2005) *Physician-nurse attitudes toward collaboration in Istanbul's public hospitals*, International Journal of Nursing Studies, 42, pp. 429-437.

Zwarenstein, M., Goldman, J. and Reeves, S. (2009) *Interprofessional Collaboration: Effects of Practice-Based Interventions on Professional Practice and Healthcare Outcomes*, Cochrane Database of Systematic Reviews, Vol. 8(3) [Online]. Available at http://ipls.dk/pdf-filer/ip_collaboration_cochrane.pdf (Accessed 22 November 2019).

APPENDICES

Questionnaire forms for nursing and medical students' attitudes towards each other's professions are given in this part. Questionnaire of nursing students' attitudes towards physicians is shown in the Appendix-1 and questionnaire of medical students' attitudes towards nurses is shown in the Appendix-2.

APPENDIX 1 - QUESTIONNAIRE OF NURSING STUDENTS' ATTITUDES TOWARDS PHYSICIANS

Değerli Öğrencimiz;

Elinizdeki anket formunda doktorlara yönelik bir takım ifadeler bulunmaktadır. Bu ifadelere ne derece katıldığınızı lütfen aşağıdaki ölçeğe göre değerlendiriniz. Veriler yürütmekte olduğumuz bilimsel bir çalışmada toplu olarak değerlendirilecek ve bireysel cevaplarınız başka kimselerle paylaşılmayacaktır.

Katkılarınız için çok teşekkürler,

Araştırma Ekibi Adına:

Prof. Dr. Gülem ATABAY

1= HİÇ KATILMIYORUM

2= KATILMIYORUM

3= KISMEN KATILIYORUM

4=KATILIYORUM

5= TAMAMEN KATILIYORUM

DOKTORLAR;	1	2	3	4	5
Hastaları dikkatli dinler.					
Soğuk insanlardır.					
İnandırıcıdır.					
Her hastaya eşit davranır.					
Toplum içinde hak ettiklerinden daha fazla itibar görüyorlar.					
Hastalara karşı bir konuyu vurgularken abartarak anlatır.					
Son derece nazik insanlardır.					
Alçak gönüllüdür.					
Hastalara karşı son derece samimidir.					
Kişisel problemlerini hastalara anlatır.					
Son derece açık sözlüdür.					
Hastanın seviyesine göre konuşmayı bilirler.					
Hastalarla çok tartışır.					
Dürüst insanlardır.					
Kendilerini hastaların yerine koyarak düşünürler.					
Hastalara karşı saygılıdır.					
Yönlendiricidir.					
Sinirlidir.					
Kibirli insanlardır.					
Toplumumuz doktorluk mesleğini gözünde çok büyütüyor.					

1. Seçtiğiniz takma isim:
2. Yaş:
3. Cinsiyet:
4. Doktor aile yakınınız var mı?..... Varsa yakınlık derecesi:……

APPENDIX 2 - QUESTIONNAIRE OF MEDICAL STUDENTS' ATTITUDES TOWARDS NURSES

Değerli Öğrencimiz;

Elinizdeki anket formunda hemşirelere yönelik bir takım ifadeler bulunmaktadır. Bu ifadelere ne derece katıldığınızı lütfen aşağıdaki ölçeğe göre değerlendiriniz. Veriler yürütmekte olduğumuz bilimsel bir çalışmada toplu olarak değerlendirilecek ve bireysel cevaplarınız başka kimselerle paylaşılmayacaktır.

Katkılarınız için çok teşekkürler,

Araştırma Ekibi Adına:

Prof. Dr. Gülem ATABAY

1= HİÇ KATILMIYORUM

2= KATILMIYORUM

3= KISMEN KATILIYORUM

4=KATILIYORUM

5= TAMAMEN KATILIYORUM

HEMŞİRELER;	1	2	3	4	5
Hastaları dikkatli dinler.					
Soğuk insanlardır.					
İnandırıcıdır.					
Her hastaya eşit davranır.					
Toplum içinde hak ettiklerinden daha fazla itibar görüyorlar.					
Hastalara karşı bir konuyu vurgularken abartarak anlatır.					
Son derece nazik insanlardır.					
Alçak gönüllüdür.					
Hastalara karşı son derece samimidir.					
Kişisel problemlerini hastalara anlatır.					
Son derece açık sözlüdür.					
Hastanın seviyesine göre konuşmayı bilirler.					
Hastalarla çok tartışır.					
Dürüst insanlardır.					
Kendilerini hastaların yerine koyarak düşünürler.					
Hastalara karşı saygılıdır.					
Yönlendiricidir.					
Sinirlidir.					
Kibirli insanlardır.					
Hemşirelik mesleği toplumda hak ettiği saygıyı görmüyor.					

1. Seçtiğiniz takma isim:
2. Yaş:
3. Cinsiyet:
4. Hemşire aile yakınınız var mı?..... Varsa yakınlık derecesi:……

APPENDIX 3 - ETHICAL BOARD APPROVAL

İZMİR EKONOMİ ÜNİVERSİTESİ

SAYI: B.30.2.İEÜSB.0.05.05-20-037 21.05.2019

KONU: Etik Kurul Kararı hk.

Sayın Dr. Öğretim Üyesi Özden Gökdemir,

20.05.2019 tarih ve 17 numaralı Etik Kurul toplantısında yöneticisi olduğunuz, Doç. Dr. Burcu Güneri Çangarlı, Prof. Dr. R. Gülem Atabay, Burcu Peslikan ve Prof. Dr. M. İlgi Şemin'in yer aldığı "Ev Ziyaretleri Uygulamasının Tıp ve Hemşirelik Öğrencilerinin Ekip Davranışına Etkisinin Araştırılması" konulu projeniz görüşülmüş ve projenizin etik açıdan uygun olduğuna, görüşmeye katılan üyelerin oy birliği ile karar verilmiştir.
Gereği için bilgilerinize sunarız.

Sağlık Bilimleri Araştırmaları
Etik Kurulu

[redacted]
Başkan
Prof. Dr. M. İlgi ŞEMİN
Görev aldığı çalışmanın oylamasına katılmamıştır.

[redacted]
Üye
Prof. Dr. Gül AKDOĞAN

Üye
Prof. Dr. R. Gülem ATABAY
Görev aldığı çalışmanın oylamasına katılmamıştır.

[redacted]
Üye
Prof. Dr. Sevinç İNAN

[redacted]
Prof. Dr. Filiz ÖĞCE

[redacted]
Üye
Prof. Dr. Kamer MUTAFOĞLU

Üye
Prof. Dr. Metiner TOSUN

Mazeretli

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