

Original Research Article

“Attitudes and Readiness of Dental Students towards Inter-Professional Learning; A Survey Done in Riyadh, Saudi Arabia”

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Inter-professional learning is when two or more professionals learn with, from and about each other to improve collaboration and the quality of care. It is important in the majority of professions; however, this topic is focused on the dental field. Inter-professional learning includes the attitudes, behaviors, readiness, and knowledge of health care providers towards each other, students and patients. This is a cross-sectional study, which utilized undergraduate dental students from Riyadh colleges of dentistry and pharmacy. The response rate was 92% (N=460). A 19 point Inter-professional learning scale (IPLS) was used in this study comprising of a 5-point Likert scale (Strongly agree 5, Agree 4, Neutral 3, Disagree 2, Strongly disagree 1). As far as the Negative and Positive professional identity was concerned, mean scores were 2.5 and 4.1 respectively. A mean score of 3.4 was noted for roles and responsibilities domain. Attitudes towards inter-professional learning were seen to be positive and encouraging among the dental students.

Keywords: Inter-professional learning, Dental students, Attitudes, Responsibilities.

INTRODUCTION

Inter-professional learning is when two or more professionals learn with, from and about each other to improve collaboration and the quality of care. It is important in the majority of professions; however, this topic is focused on the dental field. Inter-professional learning includes the attitudes, behaviors, readiness, and knowledge of health care providers towards each other, students and patients. Professional attitudes and behaviors must be taught to pre-clinical students so that they strictly stick to it and be a part of their profession. These behaviors might differ from person to person and the same would be true for different groups (Sigalet et al, 2012).

There was a study at the University of Alabama at Birmingham School of Dentistry which included first- and fourth-year students. The study employed a pretest-posttest survey design. It discussed dental students' attitudes towards communication skills instruction and clinical application. The pretest-posttest survey design combined with cross-sectional data was used in this study. The result of this study showed that the attitudes of first-year students are more positive towards communication skills' usefulness and training than fourth-year students. Regarding to demographic characteristics, females reported more positive attitudes towards application of interpersonal skills than did males. There was a complex interaction of gender and primary

language due to the influence of culture which is the key component in attitudes. The role of parental occupation is also complex which moderates the increasing negativity of attitudes throughout dental education. Female students reported poorer attitudes towards clinical communication skills training and application than did their male counterparts. Students reporting more positive attitudes towards communication skills training and their role in the clinical encounter were more likely to say their own skills needed improvement (McKenzie, 2013).

Teamwork has also been shown to provide benefits to healthcare providers, including reducing extra work and increasing job satisfaction. As Sixth-year dental students at Riyadh Colleges of Dentistry and Pharmacy (Riyadh, KSA), we have noticed this shift becoming increasingly evident in our education. The importance of collaborative learning cannot be ignored as this may prove to be an essential tool in achieving goals collectively in future (W.H.O., 2010).

Inter-professional education might play an important role in enhancing communication and collaborative skills when it comes to training in health care setup. A study conducted in the United Kingdom assessed the attitudes of undergraduate dental health care students. It was concluded that undergraduate inter-professional education opportunities have a crucial impact on enabling students to learn about the

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roles and responsibilities of others and the impact of this on their own practice (Morison et al, 2003).

Lack of understanding, limited communication, and poorly coordinated team are the most common outcomes of any health care education which lacks inter-professional learning. To manage these issues, students could learn about each other's role and learn from one another to provide effective health care and enhancing job satisfaction. It also suggested that criticism and differing opinions shouldn't cause conflict among team members, each one of them should accept and understands another's point of view. Shared learning exercise can be beneficial and useful for the future working lives of health care students (Reeson et al, 2014; O'Neill & Wyness, 2004).

The positive effects of inter-professional practice in improved patient care have been described by many of the researchers worldwide. The degree of student preparedness in IPL predicts the likelihood that they may engage in inter-professional practice as future healthcare providers. A cross-sectional study was conducted in the International Medical University, Malaysia. The sample was drawn from all undergraduate students enrolled in years one to five. Attitudes and readiness towards inter-professional learning showed significant differences among students of various healthcare professions; these differences also depended on the students' year of study. Inter-professional learning should be incorporated in the curriculum of all healthcare professional programs, which may foster students to become competent healthcare providers and understand each profession's role (Maharajan et al, 2017).

There has been a mixed response from various healthcare professionals when it comes to working in collaboration with other modalities of health (Bridges et al, 2011). More rigorous inter-professional studies are needed to provide better evidence of the impact of IPE on professional practice and healthcare outcomes. These studies should also include data collection strategies that provide insight into how IPE affects changes in health care processes and patient outcomes (Reeves et al, 2008; Coster et al, 2008).

Huge role is played by the Inter-professional Learning (IPL) in making the individuals ready for the professional career in practicing the health care. A better treatment can be expected from an outcome which is achieved by a healthcare disciplinary team rather than the treatment which is carried out only by a single individual. When a team is made up which includes various professionals, this means that they all have a certain contribution which they can make to the patient along with better quality and a better lifestyle of living (S, 2103).

According to the World Health Organization, they believe that a **teamwork** regarding the disciplinary collaborative practice makes a better framework of the management. The report from the WHO moreover states that IPL is one of the most effective learning procedures in the time today. This is so because it clearly defines the roles that will be designated to them in the future and also the perspective of other individuals regarding the job (Kitto, 2013).

Some of the preceding studies have shown that having suitable experience with the IPL proves the individuals to have better identities on a professional level and behave better in teamwork. Today the kind of education that is taught to the students only entails the moral component which is subjected to a specific region the rest is learned by the students once they enter the clinical field. There have been evidences which prove that inter-professional care can give us better outcomes and results. It can be understood that once IPL is implemented into the structure a much finer result can be expected. This can

be important since this would give an experience beforehand and this, in turn, would help the students create a better health care attitude of the doctors. The competencies of the students will also become much more polished (Cartwright, 2015).

Once the students understand the importance of the interpersonal communication in various phases of life this would mean that many other errors regarding the clinics can then be eliminated or at least minimized. One of the biggest advantages of IPL is the fact that it enables all the individuals to put in an effort which can create a balance in the professional fields and this means there is less loss faced. This IPL experience should be made more common in every professional field (Abu-Rish, 2016).

There are several chances that the students from varying fields of the profession can have diversified readiness and attitudes towards the usage of the IPL. The level of engagement depends on the eagerness they entail in making an effort in the usage of the IPL. If the students have positive attitude towards the IPL this would mean that a positive result could be affected. The acceptance clearly depends on the willingness that the student shows in order to experience IPL. The student evaluation can play a very important part in making sure that a constructive result can be expected out of the whole learning procedure (Samuel Lapkin, 2013).

The probable influence of the inter-professional education IPE on the **team work** and the results of the patient are related to the necessary steps which should be taken in the students of several educational institutions. The development program of the IPE is quite critical in the development of the health care team work. A study which was carried out by the Bialocerkowski and Olsen stated that there have been lack and gaps in the literature of the IPE procedures (Olson, 2014).

Another lacking which was highlighted stated that evident lack of theoretical work and inductiveness of the IPE was not available which was traced because of the systematic review. There has been evidence of the impact of the student features on the readiness of the IPE. It is expected that it is limited and not very consistent. The implications which create an impact on the readiness of the IPE include age, experience, and gender (Thompson, 2016).

The strongest evidence which is available with respect to the discipline of the health is that of the attributes of the students. There have been various variations in contrast of the willingness and attitudes of the professional learning systems. The role of identifying the discipline can be really important in the development of the IPE. This can also serve as the base for the interventions which target the lower receptivity to the IPE. A warranty is generated in the respect to the implementation of the discipline which can be collected (Chioreso, 2014).

Moreover, the student's characteristics can create an impact to the eagerness of the IPL and all the other phases which remain unexplored. The understanding regarding the impact of the student factors which are related is quite critical in the IPL (Zierler, 2014).

The inter-professional education is the core of the system of pedagogy in the profession of the health care. This supports the good development of the professionals which are working on creating a team in the health care system. The education of the inter-professional gives several restraints which can be used as an opportunity to engage in the training which takes place before entering into the professional fieldwork. This kind of collaboration is used to make hypothesis to make sure that the receptiveness of the students in enhanced in all the health care departments. In an activity carried out by the inter Professional Education Collaboration (IPEC) stated there

should be more opportunities gathered for the individuals so that they could work in a teamwork environment (Gilligan, 2014).

The process of the team based system can ensure that better and improved safety, access and quality can be ensured. People from varying professions can ensure that the common goal can be achieved in the best manner possible because of this. Traditionally it has been seen that the particular health discipline is usually seen by people a little less necessary until the educational period is going on. It is supposed that the interdisciplinary experiences can only be important once a person steps into the professional field himself. This is exactly why the traditional learning methods can highly benefit themselves from the idea of Inter-Professional Learning methods (Nordquist, 2004).

The nature of health care today is quite complex as that of earlier times because of the fact that in early times the concentration was only laid on curing the patient. But today, major emphasis is laid down on not only curing the health of the patient but also making sure that the right health care is promoted. This can only be achieved if there is enough collaboration between the professionals. But the collaboration is not so obvious and this is mainly because of the lack of communication, poor relationships between the individuals who are working and lack of trust in the peers.

All these factors create a barrier for the team members and make them stay back in making the right decision for the cases and the patients they work on. Because of such dilemma, the World Health Organization made sure that this issue should be resolved and they came up with the Inter-Professional Education (IPE). This kind of education provides assistance to the students in preparing them for the concerted role they will have to play in the future (Peller, 2000).

The Inter-Professional Education enables the students from all spheres to understand the various health professionals and lets them learn about the other carriers. This way it means that the collaborative skills and assistance that will be needed by the students in the future can be promoted and executed in a better way. There have even several researches which have been carried out and which show that the students which have undergone the Inter-Professional Education turn out to be better at their carriers can understand how to work in teams and also how they should be working in a clinical setting. The application of the Inter-Professional Education has been studied in varying settings but it has been observed that the implementation of the IPE has been nearly negligible in the Asian region (Craddock, 2010).

The regions in Asia usually have much more adaptation of hierarchy and these results in large power distance between the people who work together. In health care this can be seen in the doctors and the nurses. In society today, the doctors are considered as the ones who own the highest position and on the other hand, the midwives and the busses are considered having a marginalized position. Such situations can create a huge complication since the application of the inter profession. The major issues in the Asian countries are the matter that the boundaries of health care are not clear rather they are blurred. The roles are not evidently clear which can create issues (Bosnic-Anticevich, 2014).

MATERIALS AND METHODS

Study Design and Instrument

This is a cross-sectional study, which utilized undergraduate dental students from Riyadh colleges of dentistry and pharmacy. Ethical approval was acquired from Riyadh College's Institutional Review Board before data collection. A total of 500 questionnaires were printed and distributed among the male and female students from all levels of dentistry using convenient sampling. Response rate was 92% (N=460). A 19 point Inter-professional learning scale (IPLS) was used in this study comprising of 5-point Likert scale (Strongly agree 5, Agree 4, Neutral 3, Disagree 2, Strongly disagree 1). IPLS consists of 4 domains (Teamwork and collaboration, Negative professional identity, Positive professional identity, Roles, and responsibilities).

Statistical Analysis

Convenient sampling was done and the data was subjected to statistical analysis using Statistical Package for the Social Sciences (SPSS) v. 16. ANOVA was used to achieve the results including means (M), Standard deviations (SD) and significance (p -value) where it was kept under 0.05.

Aims of the study

- To measure the inter-professional learning scale for dental students
- To compare between male/female and different dentistry levels.

RESULTS

From the chart below it can be depicted that the questions which were surveyed for this research were mainly responded by the males. 63% of the males responded to the survey where as about 37% of the female doctors responded similarly. Moreover, doctors with different prior experience were used that is about majorly doctors with about 9 years, 10 years and 12 years of dental experience were a part of the survey.

A total of 460 male and female students took part in this study. A high mean score of 4.2 was recorded for team work and collaboration domain. As far as the Negative and Positive professional identity was concerned, mean scores were 2.5 and 4.1 respectively. A mean score of 3.4 was noted for roles and responsibilities domain. We analyzed the comparisons made between genders and levels of dentistry. It was found out that the mean scores for all 4 domains were the highest for levels 9 and 11 students. As far as gender comparison was concerned, male mean scores for the 4 domains were slightly higher than for the females.

DISCUSSION

Inter-professional learning can have a positive effect on the health outcomes and achievement of the goals collectively in a much formidable manner. Students might think differently from the professionals and this has been noticed in various studies throughout the globe. Similar variations have been observed among the different groups categorized into gender, levels of studies, types of allied healthcare specialties and nationalities.

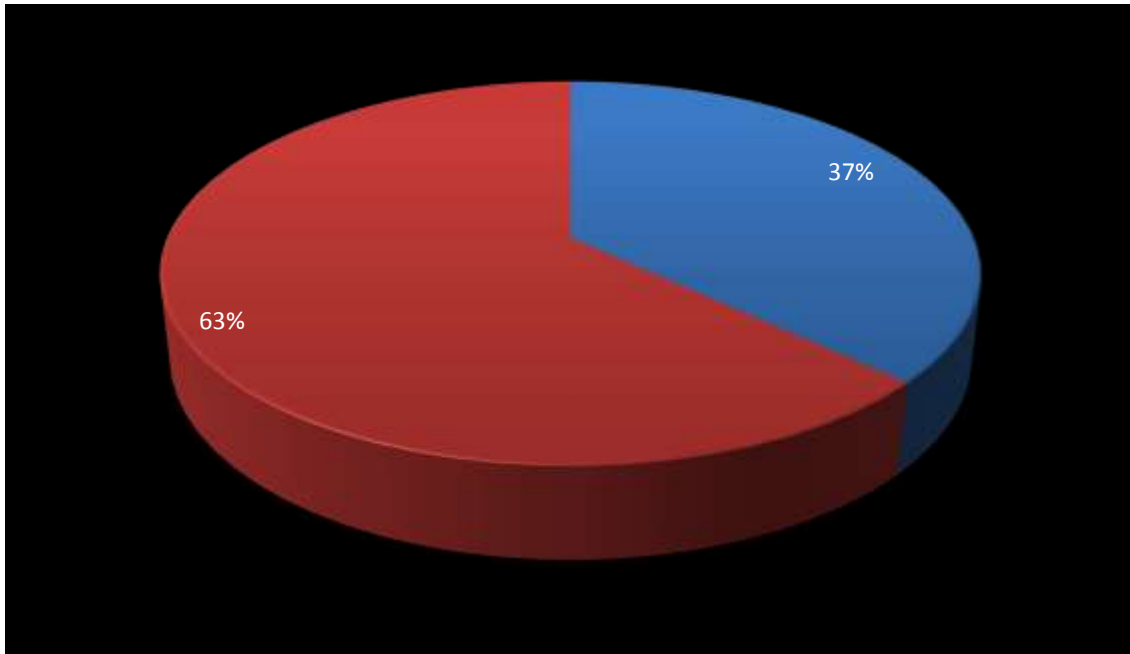


Figure 1: Ratio of male and female participating in the study

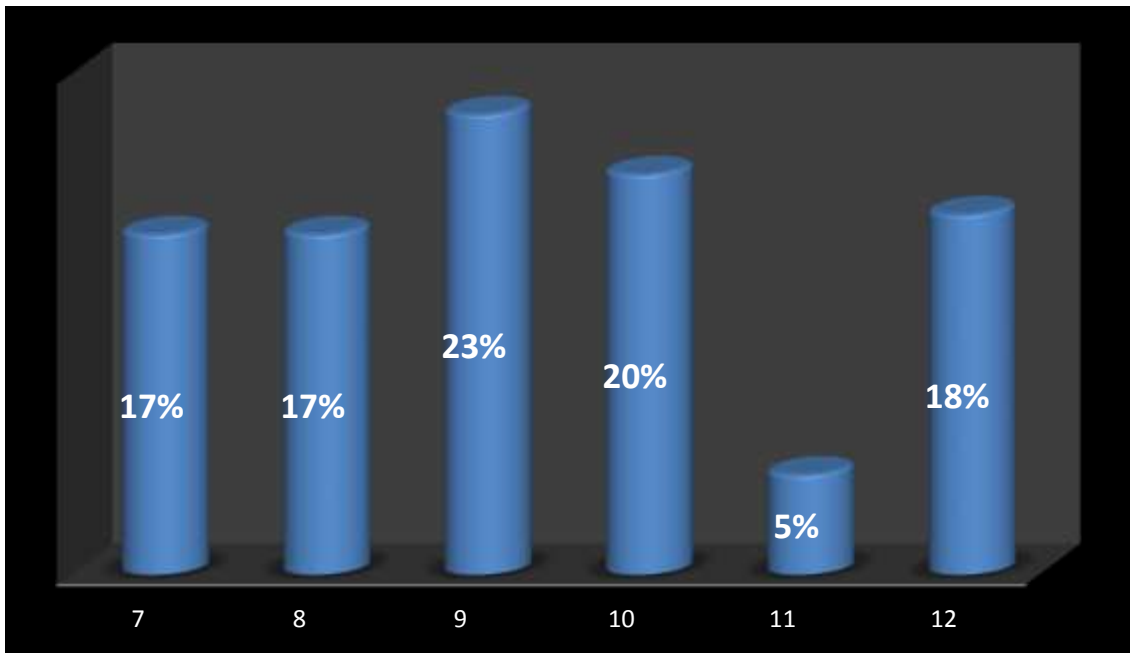


Figure 2: Number of students from various dentistry levels

Table 1: Mean scores of each item of RIPLS

| Item | | Mean | (SD) |
|---|--|------|--------|
| Domain 1: Teamwork and collaboration | | | |
| 1 | Learning with other students will make me a more effective member of a healthcare team | 4.2 | (.81) |
| 2 | Patients would ultimately benefit if healthcare students worked together | 4.0 | (.81) |
| 3 | Shared learning with other healthcare students will increase my ability to understand clinical problems | 4.4 | (.72) |
| 4 | Communication skills should be learned with other health care students | 4.1 | (.75) |
| 5 | Team-working skills are vital for all healthcare students to learn | 4.0 | (.77) |
| 6 | Shared learning will help me to understand my own professional limitations | 4.1 | (.86) |
| 7 | Learning between healthcare students before qualification would improve working relationships after qualification | 4.1 | (.85) |
| 8 | Shared learning will help me think positively about other healthcare professionals | 4.1 | (.80) |
| 9 | For small-group learning to work, students need to respect and trust each other | 4.5 | (.70) |
| Domain 2: Negative professional identity | | | |
| 10 | I don't want to waste time learning with other healthcare students | 2.4 | (1.09) |
| 11 | It is not necessary for undergraduate healthcare students to learn together | 2.5 | (1.19) |
| 12 | Clinical problem solving can only be learnt effectively with students from my own school | 2.6 | (1.15) |
| Domain 3: Positive professional identity | | | |
| 13 | Shared learning with other healthcare professionals will help me to communicate better with patients and other professionals | 4.1 | (.75) |
| 14 | I would welcome the opportunity to work on small group projects with other healthcare students | 4.0 | (.84) |
| 15 | Shared learning will help me clarify the nature of patients' or clients' problems | 4.0 | (.77) |
| 16 | Shared learning before qualification will help me become a better team worker | 4.1 | (.72) |
| Domain 4: Roles and responsibilities | | | |
| 17 | The function of allied health professionals are mainly to provide support for doctors | 3.8 | (.74) |
| 18 | I am not sure what my professional role will be | 2.9 | (1.13) |
| 19 | I have to acquire much more knowledge and skill than other students | 3.7 | (.89) |

Table 2: RIPLS domain scores for different levels of dental students

| Domain | Level 7 Mean (SD) | Level 8 Mean (SD) | Level 9 Mean (SD) | Level 10 Mean (SD) | Level 11 Mean (SD) | Level 12 Mean (SD) | p-value |
|--------------------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|---------|
| RIPLS | 72.95(3.47) | 70.22(3.12) | 73.37(3.91) | 70.83(3.74) | 72.91(3.01) | 71.93(2.43) | |
| Teamwork and collaboration | 38.02(3.55) | 36.84(3.46) | 38.76(3.59) | 36.63(3.32) | 38.46(3.22) | 37.38(3.02) | 0.233 |
| Negative professional identity | 7.95(3.32) | 7.34(2.88) | 6.99(3.09) | 8.01(3.34) | 7.44(2.63) | 7.45(2.45) | 0.047 |
| Positive professional identity | 16.38(1.93) | 15.87(2.77) | 16.91(2.01) | 15.64(1.86) | 16.4(2.83) | 16.51(1.89) | 0.029 |
| Roles and responsibility | 10.6(2.09) | 10.17(1.98) | 10.71(2.20) | 10.55(2.17) | 10.61(1.82) | 10.59(2.13) | 0.407 |

Table 3: RIPLS domain scores for males and females

| Domain | Male Mean (SD) | Female Mean (SD) | p-value |
|--------------------------------|-------------------|--------------------|---------|
| RIPLS | 71.7(3.54) | 72.17(3.12) | |
| Teamwork and collaboration | 37.38(3.44) | 37.78(3.92) | 0.264 |
| Negative professional identity | 7.55(2.87) | 7.51(3.21) | 0.377 |
| Positive professional identity | 16.04(3.23) | 16.44(2.89) | 0.035 |
| Roles and responsibilities | 10.73(3.78) | 10.44(3.31) | 0.042 |

This study was designed to measure the readiness of dental students of Riyadh city to collaborate for learning and working in present as well as in future. Unfortunately, we were unable to receive the ethical approval to visit the other dental schools of Riyadh. Therefore, we decided to measure the above-mentioned attitude among the students of RCsDP and analyze them. While reviewing the literature we could not find any study that was done in Riyadh before.

There have been a number of studies conducted on the same topic throughout the world. We compared the results of our study with a research done among the Malaysian healthcare students. It was noted that the mean scores ($M=4.2$, Domain 1) in that study were considerably higher as compared to our study ($M=4.0$, Domain 1). Similarly, readings were compared for other domains as well and overall the mean scores were higher in the study done by Maharajan et al. (2016).

We decided to compare the results of our study with another research done by Coster et al. (2008) among the undergraduate healthcare students in the United Kingdom. The findings were very similar to our study and no such difference was noted apart from the point that higher level students showed slightly better readiness to inter-professional collaboration as compared to our students.

The comparisons between genders and dentistry levels showed a significant difference in the responses. In case of negative professional identity, level 10 students had the highest mean score, whereas level 9 had the lowest. On the other hand, there was no significant difference between males and females for the similar category. There was a significant difference acknowledged regarding the positive professional identity in both genders as well as dentistry levels. Finally, the domain of roles and responsibilities showed a distinctive difference among males and females.

A limitation of this study is the small sample size. The other studies that we compared our results with, utilized a much bigger sample size. In future we are looking to spread our scope and reach out to other dental schools and collect data from the students of areas other than dentistry as well.

The research showed that the level of readiness with regard to the IPL is extremely different and this is because of the year of study as well. It was concluded that the Inter-Professional Learning should be made a part of the curriculum by incorporating it in the studies. If this is done so this would mean that the development of skills of the students would foster in the health care. This would enable the doctors to understand that other students hold in various professions. It also resulted that the focus groups will empower the perceptions that individuals hold and this would shape their attitudes and personalities (Zhang, 2016).

In the previous research which was carried out with the limitations of the similar unit, the study displayed the differences which rose in contrast to the willingness to IPE. It was of concern and to be noted that the score of RIPLS which were achieved by the medical related students and that by the other disciplines had great variations. This is because the medical students stood very lower in this context. The investigation which was carried out by the research made the students travel in perspective of the IPE which as a whole created a negative impact on the student and also on their attitudes. The receptivity of the students also became quite negative (Chua, 2015).

In another research, it was stated that the traveling which was required in the research did create a negative impact on the students but there have been other researches which similarly showed that the medical students comparatively had

owner readiness towards the concept of the IPE. Although many other professionals had higher scores which meant that they were much more willing to adapt the nature of the IPE. There was only one method which stated that the score was no less between the medical students and that of the other disciplines. This is where the literature which was published showed that IPE should be specifically made a part of the curriculum of the students and the education (Braithwaite, 2016).

The findings in the research showed that there should be strategies which should be framed in an order so that the readiness of the students towards the IPE should be increased. There should be supportive interventions which should be made in order to make sure that the health profession for males could be improved. This IPE is usually way more important for the male students which have the prior experience of being in the clinic. What can be done is to make sure that the groups which are of interest can be divided and inquired that what exactly is holding them back from the usage of the IPE. The attitudes which shape them towards the IPE should be gathered and considered. This will in turn help in making sure that the right kind of interventions can be made for future (Dean, 2014).

Opposing to the kind of expectations which had been developed, the scores of the RIPLS collectively incur for the whole troop. The comparisons which were carried out with respect to each discipline showed that there was an improvement which could be seen in the students belonging from nursing which had been following the inter-professional education. This study was carried out in comparison with the study which was made by Lairmore et al. who stated that there was an improvement which could be seen among all of the students of various disciplines, from the results which have been obtained it can be concluded that the intervention that was made based on the presentation can actually improve the strength of the inter-professional learning. The travelling which has been carried out in this has shown that the students might become more ready towards the IPL and this can be future evaluated (Smith, 2016).

The study which was accepted out stated that there are two major factors which work as an arrear in approval of the Inter-Professional Learning. These two factors are the inconsistency of the department's logistics and also the resource issues in the departments. From the perspective of the administration, the money that is substituted for the department is limited so that the balance can be maintained but this, in turn, means that no new initiative can be taken. A team is very necessary for the planning, development of the course, student and teacher evaluation. All this means that extra time and money is necessary which can be costly. Another major issue is that of the license which needs to get issued for every requirement (Kaye, 2011).

When the curriculum of the students is enhanced this means that extra licensing and tailoring of the additional courses are to be carried out. The restructuring of the curriculum means that the expenses of the students will ultimately increase and this can be a problem. Moreover, besides the administrative and resources allocation issues, another problem which was highlighted and which needs to be catered is the willingness of the students to engage in the IPE. Some progressive steps are essential to make sure that the right kind of implementation can be carried out in the universities all around the world which are related to health care. The interprofessional initiatives should be taken by the universities so that the strategies can be made and

implemented (Smith, Intra-professional and inter-professional referral patterns of chiropractors, 2006).

From the research, it was concluded that a certain kind of intervention in the educational activities where grouping is done with respect to graduate and undergraduate. This does create an impact on the readiness of the students towards the usage and familiarity of the Inter-Professional Learning. They also create receptiveness of the students through the educational activities which take place. The researches which are going to be carried out in the future should be ensured that the previous experience which is related to the IPL so that the student response towards the teamwork and efforts can be recorded (Zimmermann, 2015).

The mean scores which were recorded in the research were higher for the test of RIPLS for the students who belonged to the medical sector. The factors which created an impact on the readiness of the Inter-Professional Education called for the GPA, working experience of the students, the intrinsic motivation and several more. Some situations which triggered the receptiveness towards the IPE called for the prior experience of working in the clinic where some real practice was gained, the leadership styles and skills and how the boundaries of the professions were made. In the Asian culture real importance had to be given to the roles and what limitations and boundaries did the roles held. For this purpose, good role models were needed on the basis of IPE so that good examples could be set (Gillieatt, 2014).

CONCLUSIONS

- Attitudes towards inter-professional learning were seen to be positive and encouraging among the dental students.
- Higher levels of dental students showed more readiness and willingness to learn and work with other students and professionals. As far as the four domains of RIPLS were concerned, there was a significant difference between levels regarding the positive as well as negative professional identities.

Males showed better attitude towards the inter-professional learning as compared with the females. It was noted that there was a significant difference between genders regarding positives professional attitude as well as roles and responsibilities.

REFERENCES

- Abu-Rish, E. (2016). Interprofessional education in team communication: working together to improve patient safety. *BMJ Journals*, 215-225.
- Bosnic-Anticevich, S. Z. (2014). Development and evaluation of an innovative model of inter-professional education focused on asthma medication use. *BMC Medical Education*, 616-624.
- Braithwaite, J. (2016). An action research protocol to strengthen system-wide inter-professional learning and practice. *BMC Health Services Research*, 1251-62.
- Cartwright, J. (2015). Promoting collaborative dementia care via online interprofessional education. *Australasian Journal on Ageing*, 88-94.
- Chioreso, C. (2014). A scoping review of interprofessional collaborative practice and education using the lens of the Triple Aim. *Journal of InterProfessional Care*, 393-399.
- Chua, A. Z. (2015). The effectiveness of a shared conference experience in improving undergraduate medical and nursing students' attitudes towards inter-professional education in an Asian country: a before and after study. *BMC Medical Education*, 1-6.
- Craddock, D. (2010). Inter the future: a key opportunity for podiatry through inter-professional education. *Proceedings of the Society of Chiropractors and Podiatrists Annual Conference 2010*, 50-62.
- Dean, E. (2014). Toward core inter-professional health promotion competencies to address the non-communicable diseases and their risk factors through knowledge translation: Curriculum content assessment. *BMC Public Health*, 23-38.
- Gillieatt, S. (2014). Evaluation of an inter-professional training program for student clinical supervision in Australia. *Human Resources for Health*, 185-205.
- Gilligan, C. (2014). Recommendations from recent graduates in medicine, nursing and pharmacy on improving interprofessional education in university programs: a qualitative study. *BMC Medical Education*, 14-52.
- Kaye, D. K. (2011). Lessons learnt from comprehensive evaluation of community-based education in Uganda: a proposal for an ideal model community-based education for health professional training institutions. *BMC Medical Education*, 735-751.
- Kitto, S. (2013). The disconnections between space, place and learning in interprofessional education: an overview of key issues. *Journal of Inter Professional Care*, 112-175.
- Nordquist, J. (2004). INNOVATIONS IN MEDICAL EDUCATION. *Journal of General Internal Medicine*, 83-99.
- Olson, R. (2014). Interprofessional education in allied health: a systematic review. *Medical Education*, 236-246.
- Peller, J. (2000). New Millennium Research to Practice - Conference Abstracts: 11th World Congress of the International Association for the Scientific Study of Intellectual Disabilities (IASSID), 1-6 August 2000 Seattle, Washington, USA. *Journal of Intellectual Disability Research*, 189-528.
- S, R. (2103). Interprofessional education: effects on professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews*, 45-78.
- SamuelLapkin. (2013). A systematic review of the effectiveness of interprofessional education in health professional programs. *Nurse Education Today*, 90-102.
- Smith, M. (2006). Intra-professional and inter-professional referral patterns of chiropractors. *Chiropractic & Osteopathy*, 29-10.
- Smith, M. (2016). Intra-professional and inter-professional referral patterns of chiropractors. *Chiropractic & Manual Therapies*, 686-691.
- Thompson, B. M. (2016). Working together: Using a unique approach to evaluate an interactive and clinic-based longitudinal interprofessional education experience with 13 professions. *Journal of Inter Professional Care*, 754-761.
- Zhang, M. (2016). Inter-professional delirium education and care: a qualitative feasibility study of implementing a delirium Smartphone application. *BMC Medical Informatics and Decision Making*, 345-51.
- Zierler, B. K. (2014). Interprofessional Education and Practice Guide No. 1: Developing faculty to effectively facilitate interprofessional education. *Journal of InterProfessional Care*, 3-7 .
- Zimmermann, K. (2015). Inter-professional in-situ simulated team and resuscitation training for patient safety: Description and impact of a programmatic approach. *BMC Medical Education*, 41-49.
- Sigalet E, Donnon T, Grant V. Undergraduate students' perceptions of and attitudes towards a simulation-based interprofessional curriculum: the KidSIM ATTITUDES questionnaire. *SimulHealthc*, 2012, vol. 7, pp. 353-358.
- McKenzie CT. Dental students' attitudes towards communication skills instruction and clinical application. *Journal of Dental Education*, 2013, vol. 78(10).
- World Health Organization Framework for action on interprofessional education and collaborative practice, 2010. WHO: Switzerland 2012.
- Morison S, Jenkins J, Moutray M. Facilitating undergraduate inter-professional learning in healthcare: comparing classroom and clinical learning for nursing and medical students. *Learning in Health and Social Care*, 2003, vol. 2(2).
- Reeson MG, Gleaves CW, Ellis I. Attitudes towards shared learning of trainee dental technicians and undergraduate dental students. *Journal of Dental Education*, 2015, vol. 79(1).
- O'Neill BJ, Wyness MA. Learning about interprofessional education; student voices. *Journal of Interprofessional Care*, 2004, vol. 18, pp. 198-200.
- Maharajan MK, Rajiah K, Khoo SP, Chellappan DK, Alwis RD, Chui HC, Tan LL, Tan YN, Lau SY. Attitudes and readiness of students of

- healthcare professions towards Inter-professional learning. PLOS ONE, 2017.
- Bridges DR, Davidson RA, Odegard PS, Maki IV, Tomkowiak J. Interprofessional collaboration: three best practice models of interprofessional education. Med Educ Online, 2011, pp. 16.
- Reeves S, Zwarenstein M, Goldman J, Barr H, Freeth D, Hammick M, Koppel I. Inter-professional education: effects on health care. The Cochrane Library, 2008.
- Coster S, Norman I, Murrells T, Kitchen S, Meerabeau E, Sooboodoo E. Interprofessional attitudes amongst undergraduate students in the health professions; A longitudinal questionnaire survey. International Journal of Nursing Studies, 2008, vol. 45, pp. 1667-1681.