ORIGINAL ARTICLE

Determining Social Intelligence of Dental Students ar Various "Academic Levels by Trosmo Social Intelligence Scale"

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ABSTRACT

Background/Introduction: Social intelligence is of great importance in the life of health care professionals because it is a significant factor of prediction and interpretation of human behavior in various contexts of social and clinical practice. The purpose of this study was to determine social intelligence of dental students at various academic levels by Trosmo Social Intelligence scale.
Methods: This is a descriptive cross-sectional study conducted at various dental colleges of Pakistan. Re-validated Trosmo social intelligence questionnaires were distributed to undergraduate dental students to assess their social intelligence at various academic levels. Likert scale was used to assess the opinions and attitudes of the respondents.
Results: The study consisted of 403 participants, of which 129 (32%) were male and 236 (58.6%) were female. The minimum age of the respondents was 18 and 28 being the maximum. The average values of social intelligence at various academic levels are as follows: 1.944 for BDS 1, 1.980 for BDS 2, 1.87 for BDS 3, 2.053 for BDS 4, respectively. Nor growth in all three component of social intelligence was identified.
Conclusion: There is insignificant change in social intelligence of students at various academic levels and no significant link is found between the three dimensions of social intelligence and the upgrading academic levels, which is concerning.
Keywords: Social intelligence; academic levels; TROSMO scale; dental students, social skills, clinical practice, healthcare, human behavior, professionalism, curriculum

INTRODUCTION

Social intelligence implies one's social competence to interact with others in an environment. It is "a necessary prerequisite for successful social communication [1], and involves decoding and navigating social situations, understanding their complexity and being flexible in such situations [2]. Researchers have deduced several definitions of social intelligence and all share two components; (a) the awareness of others, or situational awareness, in context to health care and clinical settings (b) their response and adaptation to the social situations [4]. Social intelligence may be a significant attribute of health professionals because of its association to better clinical results.

Social intelligence is an umbrella term which includes other aspects of more specific intelligences, such as emotional intelligence and cultural intelligence. It has been studied in marketing and management and is required to successfully build relationships and navigate social environments in management. Social intelligence develops from experience with people and learning from success and failures in social settings[5]. Social intelligence is of great importance to dental professionals. Dentists with high social intelligence interpret practical situations well as they behave tactfully and therefore develop healthy relations with patients. One may possess certain social skills and competence to cope with difficult social and clinical situations.

Three factors of social intelligence have been studied, namely; manipulation, empathy and social irritability[6]. These dimensions have been studied [6,7] and should be understood in order to excel socially in a dental environment. These factors may correlate negatively or positively with one another and maybe a predictor of the difference of social intelligence among individuals. Manipulation is identified by using other's lives for one's own benefits; empathy indicates recognizing the feelings and intentions of others and social irritability is characterized by nervousness in contact with other people.

It has been argued that healthcare professionals' ability to act effectively is closely correlated with their social intelligence [8].In dental education, there is little emphasis on developing soft skills which are socially desirable. Current dental curriculum has not emphasized greatly on the development of social skills (SS) as the interaction of dental students with patients is limited in first two years of academics. In third and final year of BDS (bachelors of dental surgery) dental students are too engrossed in academics that they have very little time to improve their social skills [9]. Students do get a chance to advocate oral health awareness among public, however, the authorities do not emphasize much on the importance of dentistry in community setting. Methods that bring social awareness in dental students like reflective practice and self-based assessment are not encouraged. Thus, they are predominantly focused on theoretical education rather than developing social processing skills.

Social intelligence may become a desirable attribute in dental education. Students with higher social intelligence may acquire better social processing skills as they progress in academic ranks [10,11]. It aids them in developing effective communication skills such as empathy which is a core competency and may require social intelligence to display it. This develops not only confidence but strong leadership in dental students and thus helps them excel socially and professionally. However, it has been seen that empathy decreased in dentists at higher academic levels in Pakistan [12,13,18]. It may be due to lack of situational judgement and social processing skills [14]. Hence, it is important to assess these skills in undergraduate dental students. Therefore, the objective of our study is to determine the growth of social intelligence in dental students at various academic levels in Pakistan.

MATERIALS AND METHODS

This is a descriptive cross-sectional study in which a survey was planned and conducted for a period of six months from 29th of December 2021 to 10th of June 2022 in six dental institutes of Pakistan. Ethical approval was obtained from the Institutional Review Board of Fatima Memorial College of Medicine and Dentistry, Lahore (FMH-03-2021-IRB-887-M).

A validated tool known as Trosmo Social intelligence scale (TSIS) was used after obtaining approval from the authorities to benefit from this tool. The tool is valid and reliable to measure social intelligence [5].

This survey tool consisted of twenty-one questions for assessing social intelligence. We have added demographic details that suit our purpose which included variables such as age, gender, accommodation and institute. After seeking approval from the corresponding authors to use the tool, the questionnaire was

re-validated with a pilot survey conducted on outgoing house-officers working at Fatima Memorial College of medicine and dentistry, Lahore. The pilot survey data was entered in SPSS 23.0 and the questionnaire validity was assessed from the pilot survey by experts and statistics. The Cronbach Alpha was found to be 0.866.

A total of six institutes from Pakistan were included in the study. The participants included male and female dental undergraduates from the six institutes and were either day scholars or residing in hostels. Participants were explained the purpose of study and voluntary written informed consents were obtained. A response rate of 83.3% was found in the hard copy survey carried out in the parent institute but due to Covid-19 we opted for an e-survey in other dental institutes across Pakistan. After filtering the data and removing the unfilled forms, a response rate of 33.6% of e-survey was found, which varied among institutes.

The data from the questionnaires was classified following the MESI methodology [7] into three categories namely: manipulation, empathy and social irritability, the data was then tabulated, and entered in a Microsoft excel sheet. The data was analyzed using a Statistical Package for the Social Sciences (SPSS) software version 23.0. Standard descriptive statistics were generated. After checking normality of the data, Chi square test was applied to know the association with demographic details and participant's perception of social intelligence.

RESULTS

The total no. of participants included 129 (32%) of male and 236 (58.6%) of female students and their socio-demographic characteristics is shown in table1. The respondents were structurally divided into four categories according to their academic levels, including 92 respondents of Bachelorette of dental surgery (BDS) 1, 91 respondents of BDS2, 110 respondents of BDS3 and 110 respondents of BDS4. Their average age was 21.6 years. The minimum age of the respondents in the research sample was 18; the maximum age was 28 years. The numbers of day scholars were 123 (30.5%) as compared to students residing in hostels which were 61 (15.1%). The data about social intelligence of dental students at various academic years is shown in table 2 and figure 1, respectively.

*Mean (Standard Deviation) * Result shows Likert score.

Table 1: Demographic distribution of participants based on their response to the questions.

Gender	
Male	129
Female	236
Missing	41
Accommodation*	
Day scholars	123
Living in hostels	61
Missing	219
Institute	Total Participants
Fatima Memorial College of Medicine and Dentistry, Lahore	178
Akhter Saeed Medical and Dental College, Lahore	94
Liaqat Medical College, Karachi	52
Fatima Jinnah Dental College, Karachi	15
Hamdard Medical and Dental College, Karachi	51
Khyber Medical and Dental College, Peshawar	13

Table 2: Distribution of participants based on their social intelligence among four BDS classes

	Pre-Clinical years		Clinical years	
	BDS1	BDS2	BDS3	BDS4
Manipulation	1.515 (0.888)*	1.444 (0.946)	1.192 (0.566)	1.559 (0.722)
Empathy	2.138 (0.762)	2.386 (0.591)	2.205 (0.783)	2.364 (0.668)
Social irritability	2.180 (0.768)	2.111 (0.722)	2.236 (0.581)	2.236 (0.647)

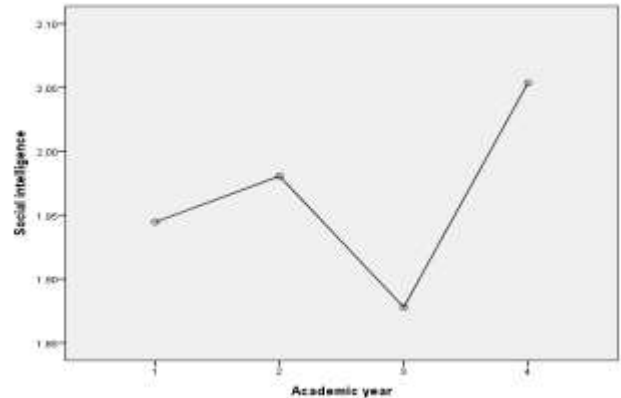Cumulative score of social intelligence of dental students from various dental colleges

Figure 1: The graphical representation shows that social intelligence increases in fourth or final academic year (BDS 4)from the baseline but overall change in social intelligence is insignificant over the academic years. If y axis showed values from 1.00-5.00, the graph will become flat and will show how much room of improvement is present.

DISCUSSION

This study aimed to determine social intelligence of dental students at various academic levels. Graphical illustration of social intelligence against academic years showed insignificant change. It neither increased nor decreased. Social intelligence is of great importance in the present life of healthcare professional due to growing tensions stresses and various social complexities [4]. It is a significant interpreter of human behavior and is therefore desirable in clinical practice. It is significantly needed to maintain healthy relationships between patients and health professionals as well as understanding and catering to their needs.

Dental students who would eventually become healthcare professionals would need to understand their patient's as well as their colleague's feelings as this is one of the most important factors of social intelligence. A growth in social intelligence was expected in students with advancing academic levels since SI has a potential to increase with experience [15]. However, the results of the study have proved otherwise. Lack of change and development in social intelligence may have occurred because the university curriculum does not foster the skill of social intelligence [16]. There is dissociation from social realities and thus failure to improve social intelligence in dental students. Curriculum ossification could also be one of the factors [17], along with lack of social cognition and didactic and clinical training.

The negative factors associated with limited growth in social intelligence in dental students such as stressful examination, extra study hours, excessive use of cell phones and loss of opportunity to participate in social events due to academic pressure can cause emotional breakdown and decreased performance in students. Burnout is therefore inevitable and there is loss of motivation in students

The three domains of social intelligence may also consequently be affected. Evidence based studies reported that empathy is a crucial cognitive attribute of health professionals because of its association with good clinical results [18]. Empathy is highly desirable in dental professionals and facilitates improved communication and experience for both the dentist and the patient and fosters treatment acceptance. It is required on a broad scale and in West it is considered a core competency. However, students with poor health and high distress levels have lower levels of empathy [18]. Decreased levels of empathy may result in loss of doctor-patient confidence and hence increased social irritability. Considering the significance of empathic dental treatments, this subject needs more emphasis and growth in Pakistan. Methods to increase empathy is incorporation of better training programs and

emphasis on behavioral sciences and ethics [20]. Social irritability, on the other hand, may increase due to persistent stressors and academic pressure [19].

Social intelligence and its subsets play a pivotal role in enhancing the professionalism skills of a person and the absence of it may ultimately limit growth in interpersonal and intrapersonal skills in students and lack of confidence when they interact with patients.

Understanding the desires, feelings, being empathetic, gaining patient confidence and satisfaction are the key to becoming a good practitioner. If this is not the case, there may be lack of patience compliance and professionalism in future. Demotivating weaknesses may lead to day-to-day stress and cascade of deleterious consequences at professional level [19]. This may consequently result in loss of situational awareness in healthcare professionals and have an adverse effect on patient safety [14].

Thus, undergraduates should excel in SI in order to perceive and interpret practical situations in future, accurately. Being socially intelligent, they would be able to get along with colleagues as well as patient and may become effective communicators entailing active listening, integrity, responsibility and empathy.

In the planning of interventions to increase social intelligence in dental undergraduates, it is suggested that group studies oriented to building social and communication skills, empathy, emotional intelligence and stress coping, be carried out to improve social intelligence and professionalism in dental undergraduates[13]. Thus, an early formation of a team is important. Co-creation approaches such as reflective based practice with students as well as a formal dental curriculum be incorporated to improve and enhance the quality of dental education.

By offering a curriculum design that focuses on developing SI competencies in dental students, a promising development of social & professional behaviors in dental students is expected in future. A constructive ambience has a positive influence on students' views, professionalism and learning environment [18]. Thus, social intelligence and longitudinal educational programs need to be incorporated from the beginning by dental institutes as part of their leadership programs and professional curriculum [18].

Strengths: It is a multi-institutional study for measuring social intelligence in dental students from various provinces of Pakistan with different backgrounds**.** We have obtained the need analysis and the importance of social intelligence may be an eye opener for stake holders and curriculum/policy makers. This is the pioneer study for measuring social intelligence in dental students in Pakistan and may be a new area of development. This may hint towards developing a curriculum design that focuses on the growth of social intelligence in dental students, because if this is not the case then is the future of dental students and patients in jeopardy?
Limitations: Lack of previous literature and studies on social intelligence and an online survey method can lead to a lack of number of responses or non- biased responses.

CONCLUSIONS

This study shows insignificant change in social intelligence among dental students against various academic levels.
Conflicts of interest: The authors have no conflicts of interest.

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