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PERCEPTION OF EMPATHY AMONG UNDERGRADUATE STUDENTS OF A MEDICAL COLLEGE IN SOUTH INDIA: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: The term empathy has its origin from the Greek word ‘*empathia*’ which means appreciating feelings of another person. **Objective(s):** To study the level of perception towards empathy among Medical students in a medical school. **Methodology:** This cross-sectional study was carried out among II and Final MBBS students willing to participate, after obtaining IEC clearance. The tool used was a structured, validated Empathy Scale Questionnaire. Collected data was entered into SPSS version 11.5. Results were expressed as Mean \pm SD. Student ‘t’ test, ANOVA and chi-square test were used. $p \leq 0.05$ was considered as statistically significant. **Result(s):** Perception of empathy among undergraduate students of Medicine did not show much of a variation with affective domain being most affected and female students were more empathetic as compared to the males across the years. **Conclusion:** Though in India, the National Medical Council has introduced AETCOM in new MBBS curriculum, standardized educational strategies to reinforce the component of empathy in professional medical training is required as the discernment of empathy is low among medical students in a selected tertiary care teaching hospital in South India with the affective domain being most affected amongst all the learning domains.

ARTICLE INFO**Keywords:**

Empathy, sympathy, MBBS, doctor-patient relationship.

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1. INTRODUCTION

The term empathy has its origin from the Greek word ‘*empathia*’ which means appreciating feelings of another person (Hojat M, 2007). Though various ideas have been put forward about the concept of empathy, in simple words, it hints the natural feeling of identification with the sufferer which involves one's emotion (Moreto G, 2018). Similar to empathy the word sympathy has been described in several ways, at present a general accord

so as to sympathy includes the assessment of how a person perceives the emotion of another; i.e., it involves an added appraisal concerning emotional understanding (Jolliffe D et al., 2006). It is known that, social relationships are essential to a significant human existence and hence getting to know and evaluating the extent of understanding (empathy) of students in medical career (Hojat M et al., 2002) during medical institution is a vital matter to be looked at all through medical training. This is because, empathy is one of the key factors involved in developing meaningful inter-personal relationships among patients and doctors which is essential for best clinical outcomes (Hojat m et al., 2009). Number of tools have lately been described to evaluate empathy, of which the Basic Empathy Scale (BES) has commonly used to measure empathy score in young and adolescent's population because of it has sufficient construct validity (Jolliffe D et al., 2006).

2. REVIEW OF LITERATURE

The expression empathy was first introduced in English by psychologist Edward Titchener Bradner, it was applied to signify the capability to know other human being (Hojat M et al., 2002). Researchers have defined it as the notion of the 'as if', which tells that, empathy contributes in feasible to get to know other individual's perspective of one's feelings (Rogers C R, 1951). Hence, empathy contemplates to be a distinctive capability to feel emotions and additionally knowing their causes.

The initial concept of empathy attenuates a particular distance and a peculiar feature that is retained between self and others and a whole course of recognition. Nevertheless, the method in which empathy is considered is now been altered, with great particularity, to report for the action caught up in both giving out emotion and social communications. This change helped in understanding empathy based on these coupled elements: an affective and a cognitive component (Carre A et al., 2013). Cognitive empathy denotes to an intellectual apprehension of another's emotional state whereas the emotional empathy relates to an emotional reaction to others emotional state (Maisonneuve C et al., 2016). Studies have shown that, females secured higher scores compared to males with regard to affective and cognitive empathy (Jolliffe D et al., 2006). Having a clear idea about cognitive and emotional aspects of empathy, the fact still remains that the third part of empathetic implementation makes it doable to control one's emotions during the process of emotional detachment. This component is mostly linked to administrative functions established on the orbitofrontal, medial-dorsolateral prefrontal and anterior cingulate cortex (Decety J, 2010). Confirmatory factor analysis confirmed the two-factor explanation only (Jolliffe D et al., 2006). Subsequently, researchers have applied the notion with regard to empathy more so in perspective of the physician (Doctor) and the patient, as a catalyst of verdict on diagnosis and its required therapy (Hojat M, 2007).

Similar to any other personal quality, empathy differs among persons. Therefore, one group of individuals may show more or less empathy than the other group, which depends upon the developmental, practical, communal, educational and other internal and external factors. It has also been observed that women are capable of having more empathy compared to males, which can add on to better understanding and hence comply to greater empathetic relationships. The literature findings of many studies have reported gender differences exist in depiction of care and attitude with regard to caring people (Hojat M et al., 2001). To a greater scale, the value of the doctor-patient relationship mainly relies on the doctor's interpersonal abilities. Such abilities are often taken in to consideration in the evaluation of clinical ability (Hojat M et al., 1986). Failure to recognize a patient's point of view leads to greater problems in communication which in turn accord not only to patient displeasure, but also to readiness of the patient to take lawful action against their doctor (Hojat M, 2007). Research recommends that patient displeasure due to doctor's failure of understanding can as well lead to malpractice protest, despite the consequences of the quality of medical care given by the doctors (Hickson G B, 1994). Thus, getting to know the patient's point of view is an essential factor in the doctor-patient relationship. Thus the excellence of the patient-doctor relationship is in turn an outcome depending on the doctor's interpersonal skills (Levinson W, 1994). The important point that is recognized is that, a student who is in the field of medicine uncovers a large scientific details that controls one's education time. So, one hardly gets out of the room to tackle problems linking to understanding the needs of the diseased (Patient) leading to decline of this idealism in them alongside with a practice of demean in which the diseased takes an alternative task in medical practice (Smith J K et al., 2006). To give a valuable care, abilities are necessary to assist the doctor who should understand with regard to the disease, but the doctor should also know the patient who is unwell. Amongst several skills, empathy has been demonstrated to be the very vital one (Hojat M, 2007). Literature has found that empathy amongst the physicians is linked with better patient happiness (Avery J K, 1985) greater compliance to treatment, more positive clinical conclusions and a decline in the number of malpractice insists. This suggests that there is a sentiment of detection among the person who is suffering, which in a course includes emotion (Moreto G, 2018).

A number of techniques have lately been evaluated to assess empathy. Interpersonal Reactivity Index (IRI),

is one of them, which is constructed by Davis, with description which has been proofed and personalized and meant for Brazil (Escala Multidimensional de Reatividade Interpersonal-EMRI). Other questionnaires include questionnaire to measure of Emotional Empathy (QMEE), the Hogan Empathy Scale and the Measure of Emotional empathy formed by Mehrabian and Epstein. The Jefferson Scale of Physician Empathy/JSPE (Moreto G, 2018) has also been used in various studies. The researchers who applied these techniques have observed that in the time of training process of various people who belonged to medical fields, empathy can either give positive or else negative variations (Hojat M et al., 2009). Researchers have conducted a cross sectional study which identified a decrease empathy score which is assessed using JSPE scale in third year medical subjects (students) when compared to the second year subjects. In one another cohort study, which used JSPE device to evaluate the empathy score in the medical school and it was observed a very low score in empathy among the third year medical students (Chen D et al., 2007). So, some of these scales to evaluate empathy, like the QMEE and IRI, seems to have a few limitation(s), which in turn binds their utility. Firstly, both these tools appear to associate sympathy with the empathy. Secondly, both these scale(s) evaluate cognitive empathy (Graziela M et al., 2018). Thirdly, these types of scales are most widely applied to evaluate the levels of empathy in delinquent and similar people (Jolliffe D et al., 2006). The Basic Empathy Scale is a scale which has been applied to evaluate level of empathy in adolescent and in young populations. (Carre A et al., 2013). This Basic Empathy Scale is predominantly structured around the definition of empathy as the 'understanding and sharing in another's emotional state or context'. The above context was taken since it gave more spotlight on both affective and the cognitive empathy (Cohen J, 1988). The Basic Empathy Scale (BES) is a 20-item scale developed in the year 2006 (Jolliffe D et al., 2006) and the two-factor model type can assess both cognitive and affective empathy (Carre A et al., 2013). Moreover the objects for Basic empathy scale was were based on the emotions - fear, sadness, anger, happiness, which is are apt to be present in all human beings (Power M et al., 2015). For a person to be empathetic, it is important not only to observe and understand emotions, with respect to patients suffering but it is equally important to comprehend each individual's personal approach to suffering. In the realm of healthcare teaching-learning, it is known that students of medicine gain knowledge by the attitudes and approaches of the educators, during their serial interactions with their patients. Students of the medical profession are taught to interact with patients empathetically so that in future as doctors they not only treat but can also counsel their patient(s).

In India, MBBS (Bachelor of Medicine and Bachelor of Surgery) course has a duration of four and a half years according to the guidelines put forward by the National Medical Council, with the first year being referred to as basic sciences and hence the patient exposure and interaction for the students mainly happens from second year onwards. Research has revealed that knowing and evaluating the level of empathy in medical profession students is of great significance. This is because, it is concerned with the daily exercise of self - significant sign on the patient. Additionally the doctors' assessment of their own emotions (Moreto G, 2018) also plays an important role. Literature lacks information about the perception of empathy among undergraduate students of medicine from 2nd year onwards, in this part of the world. Therefore the present study was designed to find out the perception of empathy among undergraduate medical students of II MBBS (2nd year), Final MBBS-Part I (3rd year) and Final MBBS- Part II (4th year), using the modified structured Empathy Scale Questionnaire, which was made and validated, accordingly.

3. METHODOLOGY

This cross sectional study was carried out for 2 months, among 120 medical students of II MBBS (2nd year), Final MBBS-Part I (3rd year) and Final MBBS- Part II (4th year), from a private, teaching, tertiary healthcare institution in Southern part of India. The Institutional Ethics Committee (IEC) clearance from Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Manipal, India, was taken for the study. After necessary permissions were obtained, the students were contacted in their classrooms without disrupting the routine classes. Convenient sampling (Non-random sampling technique) was used to recruit them into the study, till the required sample size was met from each year of study. They were invited to take part in the study, after explaining the objectives of the study. Adherence to the study was voluntary and was related to the presence of the student in the classroom when the data collection was done. All the participants were informed about the research project and if interested after signing an informed consent form, were included in the study.

Data were collected from the respective batches after prior permission from the authorities on a pre-informed date. The tool used to evaluate the students' empathy was a structured Empathy Scale Questionnaire which was made and validated, accordingly. In this questionnaire, both cognitive and affective component(s) of empathy was assessed, i.e., the questions included were about the perception of subject's empathy. Socio-demographic details, like, age, gender and year/semester of medical school, of the participants were also collected.

The collected data was coded and entered into Statistical Package for Social Sciences (SPSS) version 11.5. The results were expressed as summary measures (Mean with standard deviation/SD) and proportions using appropriate tables and graphs. For comparison across the groups, student's t test, analysis of variants (ANOVA) and chi-square test were used. $p \leq 0.05$ was considered to be statistically significant.

4. RESULTS

A total of 120 subjects participated in the present study with 40 students from each year (1st to 3rd) and among them, 60 (50%) were females.

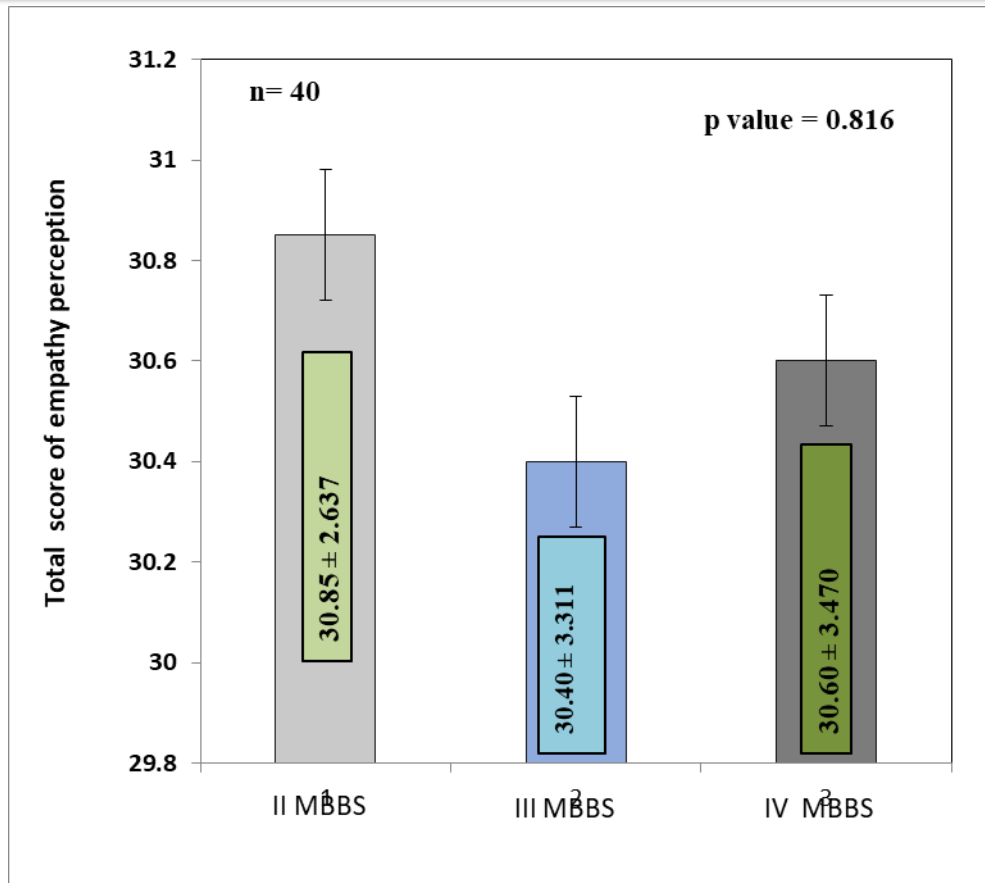
Table 1: Comparison of perception of empathy score among II, III, IV year MBBS students

Characteristics	II Year (n=40)	III Year (n=40)	IV Year (n=40)	F value	p value
1. Feeling unhappy when I'm with someone who is depressed about some incidence	2.55 ± 0.714	2.68 ± 0.730	2.63 ± 0.705	0.308	0.735
2. Appreciating my friend's joy when she/he is doing well in their career	2.85 ± 0.362	2.75 ± 0.630	2.73 ± 0.640	0.560	0.573
3. Easily affected by others' emotions	2.35 ± 0.834	2.58 ± 0.712	2.40 ± 0.778	0.927	0.399
4. Taking time to understand when people are afraid of something	1.85 ± 0.864	1.78 ± 0.920	1.90 ± 0.900	0.198	0.821
5. Not feeling good, watching movies with sad endings	2.15 ± 0.834	2.10 ± 0.900	2.10 ± 0.982	0.040	0.960
6. Understanding the emotion of somebody who is disheartened with something	2.90 ± 0.304	2.85 ± 0.483	2.78 ± 0.530	0.782	0.460
7. Seeing a friend who is sad, has no affect at all	2.75 ± 0.630	2.70 ± 0.723	2.75 ± 0.588	0.079	0.924
8. Comprehending others emotions much earlier than she/he actually tells about it	2.48 ± 0.751	2.53 ± 0.751	2.60 ± 0.632	0.311	0.733
9. Seeing people in tears, doesn't bother at all	2.68 ± 0.616	2.70 ± 0.608	2.78 ± 0.577	0.301	0.741
10. Difficulty in knowing when associates are cheerful	2.78 ± 0.480	2.78 ± 0.480	2.55 ± 0.783	1.887	0.156
11. Feeling worried when people around are terrified	2.65 ± 0.622	2.33 ± 0.859	2.50 ± 0.784	1.824	0.166
12. Working well with individuals who are delightful	2.90 ± 0.379	2.78 ± 0.620	2.93 ± 0.267	1.294	0.278

Note: n = sample size, F value = one way ANOVA, values are expressed as Mean ± SD

Table 1 shows the comparison of perception of empathy score among second, third and fourth year MBBS students. Taking into consideration both the affective and cognitive domain of empathy as depicted in the characteristic statements, no significant difference was observed in the perception of empathy among medical students.

Figure 1: Comparison of total score of empathy perception among second, third and fourth year MBBS students



Note: n = sample size

Figure 1. Depicts the comparison of the total score of perception of empathy among I MBBS, II MBBS and III MBBS students. Though slight variations are observed between the years, the difference with respect to total score of perception of empathy, among these medical students, was statistically not significant.

Table 2: Comparison of perception of empathy score in MBBS students with respect to gender

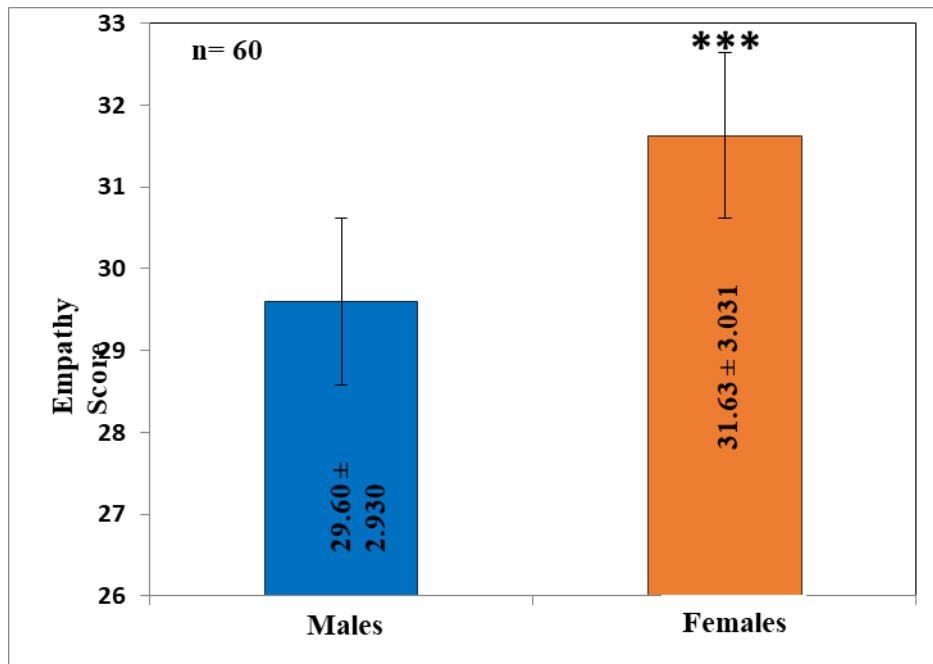
Characteristics	Male (n=60)	Female (n=60)	p value
1. Feeling unhappy when I'm with someone who is depressed about some incidence	2.55 ± 0.790	2.68 ± 0.624	0.307
2. Appreciating my friend's joy when he/he is doing well in their career	2.75 ± 0.571	2.80 ± 0.546	0.625
3. Easily affected by others' emotions	2.40 ± 0.807	2.48 ± 0.748	0.558
4. Taking time to understand when people are afraid of something	1.67 ± 0.877	2.02 ± 0.873	0.030
5. Not feeling good, watching movies with sad endings	1.92 ± 0.907	2.32 ± 0.854	0.014
6. Understanding the emotion of somebody who is disheartened with something	2.80 ± 0.546	2.88 ± 0.324	0.311
7. Seeing a friend who is sad, has no effect at all	2.60 ± 0.807	2.87 ± 0.389	0.024
8. Comprehending others emotions much earlier than she/he actually tells about it	2.38 ± 0.761	2.68 ± 0.624	0.020

9. Seeing people in tears, doesn't bother at all	2.62 ± 0.715	2.82 ± 0.431	0.067
10. Difficulty in knowing when associates are cheerful	2.62 ± 0.666	2.78 ± 0.524	0.130
11. Feeling worried when people around are terrified	2.43 ± 0.767	2.55 ± 0.769	0.407
12. Working well with individuals who are delightful	2.85 ± 0.515	2.88 ± 0.372	0.685

Note: n = sample size, values are expressed as Mean ± SD, Independent sample test.

Comparison of perception of empathy score in I MBBS, II MBBS and III MBBS students with respect to gender is presented in Table 2. The empathy score was significantly higher in females with respect to the characteristics of 4, 5, 7 and 8 compared to empathy scores in male students ($p < 0.030, 0.014, 0.024, 0.020$ respectively), in which characteristics of 4 and 8 assessed Cognitive domain and characteristics 5 and 7 assessed affective domain of empathy, respectively.

Figure 2: Comparison of perception of empathy score in MBBS students with respect to gender



Note: n = sample size, *** = $p < 0.0001$ compared to male empathy scores.

Fig. 2 highlights the comparison of the total score of perception of empathy in I MBBS, II MBBS and III MBBS students with respect to gender. Total empathy score was found to be significantly higher ($p < 0.0001$) in female students as compared to their male counterparts. This finding was consistent among all the three years of MBBS students.

5. DISCUSSION

The word 'Empathy' can be defined as the capacity to experience the frame of mind of another person

whereas ‘Sympathy’ can be expressed as considering and accepting for the suffering of others (Hojat M, 2007). In simple terms, ‘Empathy’ is putting yourself in their shoes and ‘Sympathy’ is recognizing another person’s emotions and providing support and reassurance (Jolliffe D et al., 2006). Studies have documented that recognizing the perception of empathy among medical students and providing a basic training helps them to build up better interpersonal relationships, ultimately improving the clinical outcomes (Hojat M et al., 2009). Researches have shown that empathy among undergraduate students of medicine helps in the self-critical reflection of one’s own attitude towards patients’ emotion (Moreto G, 2018). The present study depicted that there was not much of a variation in the perception of empathy among the students of medicine at an undergraduate level which is in accordance with previous studies. The medical curriculum followed in India is in accordance with the recommendations of the National Medical Council of India, according to which though the undergraduate students of medicine are exposed to patients from first year onwards, actual interaction with patients do happen mainly from their II year of training onwards. But taking into consideration the different domains of empathy, i.e., the affective and the cognitive aspects separately also, did not reveal much of a difference with advancing years of training, though literature reveals that the level of empathy does change with the affective domain being most affected during medical school (Morreto G et al., 2018). It has been emphasized in research that the level of empathy in medical students was low, both in the emotional and cognitive aspects of empathy, though the level of empathy was much better in Ist year students as compared to the final year (Khademalhosseini M et al., 2014). It was evident from the present data that there is not much of a difference in the level of perception of empathy among the undergraduate medical students probably because of the fact that only II, III and IV MBBS students were a part of the study with the medical students of I MBBS being not included here. This study however showed that the perception of empathy was significantly better in female students as compared to the males across the years which supports the literature in the fact that females always showed a higher empathy score as compared to their male counterparts (Khademalhosseini M et al., 2014). So, to conclude, empathy and communication skills should be emphasized in the medical curriculum across the years, for better patient outcomes.

6. CONCLUSION

It is known that the affective component of empathy is mostly not taken care of during medical carrier. So, Attitude and Communication module has been introduced in the new Medical Curriculum by the National Medical Council, in India. But identification of this component is required to reinforce the need to develop standardized educational strategy(s) all over the Country for a good professional medical training. Since empathy flags the path for a better interpersonal communication, it plays an important role in cultivating doctor-patient relationships, for better clinical outcomes and if not a better quality of life.

In future, studies with a more number of students and for a greater duration will help to generalize the findings at least for this part of the country.

7. LIMITATION(s)

This study was limited by the fact that it was cross-sectional rather than longitudinal and the scale was tested on a relatively small sample.

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