Empathy Assessment Among Medical Students Towards Patients - A Cross Sectional Study

Dr. S.Subha Lakshmi[1], Dr. T Vignesh[2], Mrs. Sevvanthi.K[3] ,Dr. D.Arunachalam[4]
[1]Post Graduate, [2] Associate Professor, [3] Biostatistician, [4] HOD,
[1,2,4]Department of Community Medicine,
Aarupadai Veedu Medical College and Hospital, Vinayaka Missions Research Foundation, Puducherry

*Corresponding Author:
Dr. S.Subha Lakshmi
Post Graduate, Community Medicine, Aarupadai Veedu Medical College and Hospital, Vinayaka Missions Research Foundation, Puducherry

Type of Publication: Original Research Paper
Conflicts of Interest: Nil

Abstract

Background:
Empathy is student's understanding of patient's experience and their ability to converse back the feeling. Empathy is teachable, measurable and proper teaching about ethics, humanity and professionalism to students can improve patient care[1]. Empathy improves patient satisfaction, quality drug prescription, decreases burn-out and reduce medical errors.

Objectives:
1. To determine the empathy levels among medical college students towards patients.
2. To assess the variation in empathy levels among each year of medical college students towards patients.

Methods:
Undergraduate students from 1st year to Compulsory Rotating Medical Internship of Aarupadai Veedu Medical College and Hospital, Puducherry was selected. The sample size 400 was calculated based on the similar study by Baig KS et al which was taken as reference. The sample size was collected using Cluster sampling and simple random sampling method, using pretested structured questionnaire after obtaining informed consent.

Results:
The study shows good empathy levels among medical college students towards patients. There was a significant association between empathy levels and year of education and as the year of study increases the empathy level decreases and this is statistically significant.

Conclusion:
Empathy is an important factor in improvement of health. Empathy is affected by various internal and external factors. Healthy patient doctor relationship is the success for good quality care. Empathy is lacking from models of professional development.

Keywords: Empathy, Health, Medical students, Patient care, Medical education,Year of studies.

Introduction

The patient doctor relationship is the most important factor for providing good quality health care. Empathy in students helps in student's understanding of patient's experience and their ability to converse back the feeling. Studies conducted on medical students about empathy has shown a decline. Empathy is teachable, measurable and proper teaching about ethics, humanity and professionalism to students can improve patient care[1]. Empathy is understanding another individual's emotions. Students have the

desire to cure diseases and improve patient's quality of life[2]. Empathy improves patient satisfaction, quality drug prescription, decreases burn-out and reduce medical errors. Low empathy levels are caused by economic pressure, lack of adequate training, low job satisfaction etc[3]. Empathy is an important factor in improvement of health, good empathy levels lead to good behavior and low empathy levels lead to aggressive behavior. Empathy is affected by various internal and external factor[7]. Healthy patient doctor relationship is the success for good quality care. Empathy can be classified into cognitive or affective, self-directed actions or external actions. Empathy is lacking from models of professional development[12]. Empathy is essential for patient centered care and it is the ability to understand patient's situation, their feelings and communicate with the patients[4]. Effective delivery of patient centered care is achieved by teaching empathy-based skills in health care curriculum[4.] Empathy helps in developing interprofessional collaboration. Lack of self-awareness is linked with poor empathy [4]. Good empathy levels lead to good knowledge, skills and emotions[4]. Empathy is an integral part of professionalism in addition to knowledge and is enhanced by educational interventions, training students on communication skills development[4]. Communication skills training in students helps in improvement of behavior and students have significant improvement in empathy[23]. Effective training to students can improve empathy and helps in patient care[2].

Objectives:

1. To determine the empathy levels among medical college students towards patients.

2. To assess the variation in empathy levels among each year of medical college students towards patients.

Materials and methods

Methodology

This Cross-Sectional study was conducted in Aarupadai Veedu Medical College and Hospital, Puducherry. The Study participants were all Undergraduate M.B.B.S students from 1st year to Compulsory Rotating Medical Internship (CRMI). All Undergraduate M.B.B.S students from 1st year to CRMI willing to participate in the study were

included. Non responders, duplication of data, absentees during data collection were excluded from the study. The Sampling population are all Undergraduate M.B.B.S students from 1st year to CRMI of Aarupadai Veedu Medical College and Hospital, Puducherry. The sample size 400 was calculated based on the similar study by Baig KS et al[1]. The expected proportion of empathy on patients among medical students as 0.499 with the absolute precision of 5%. The level of significance was taken as 5%.

$$\eta \geq \frac{Z^2_{(1-\alpha/2)}\,P(1-p)}{d2} * DE$$

n= 384, p=50%, d=5%

Design Effect = 1+0.01 (5-1) = 1.04

N=384*1.04=399 (rounded off to 400)

where, p is the expected proportion

d is the absolute precision

The sample size was rounded off to 400. All Undergraduate M.B.B.S students from 1st year to CRMI of Aarupadai Veedu Medical College and Hospital, Puducherry was selected. Since the students are having Competency-Based Medical Education they are having Early Clinical Exposure, so first year students were included in the study. The Study duration was 3 months (August 2023 to October 2023). Cluster Sampling Technique was used and All Undergraduate M.B.B.S students from 1st year to CRMI of Aarupadai Veedu Medical College and Hospital were included, each year was considered as a cluster in the study, from each cluster 80 students were selected by using Simple random sampling technique using computer generated random number table.

The Data were collected in all four-year medical students along with CRMI and they were given Toronto Empathy Questionnaire[27] in Epicollect software and informed consent was obtained from the students. The Toronto Empathy Questionnaire is a reliable and valid instrument for the assessment of Empathy, it consists of 16 questions, each question has 5 responses with score ranges from 0 to 4, total score ranges from 0 to 64. The Independent variable are Gender and Year of Education. The Outcome variable is Empathy levels. All the resulting scores were entered and analysed using SPSS version 29. The median and interquartile range of Toronto Empathy

Questionnaire score was calculated. Kruskal Wallis H test and Maan Whitney U test was used for all years and to compare the empathy scores among all year of medical students. The P value less than 0.05 was considered as statistically significant. Minimal risk was involved in this study.

Results:

The medical students totally involved in this study was 400, among them female students were 212 in numbers which was 53% and male students were 188 in numbers which was 47% (Fig 1). The female students are more than the male students in our study.

The median empathy scores of male and female students were 45 and 48 respectively. Statistically significant difference was found in the empathy scores between the gender (P<0.001) (Table 1).
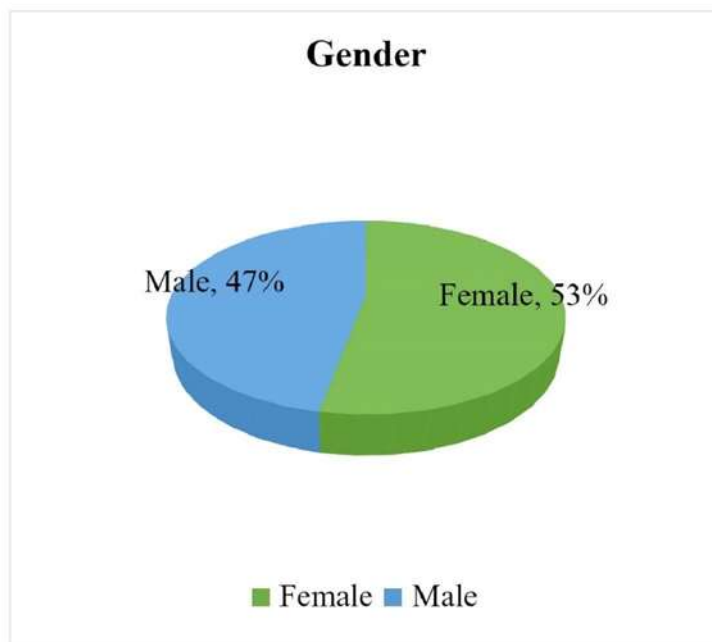

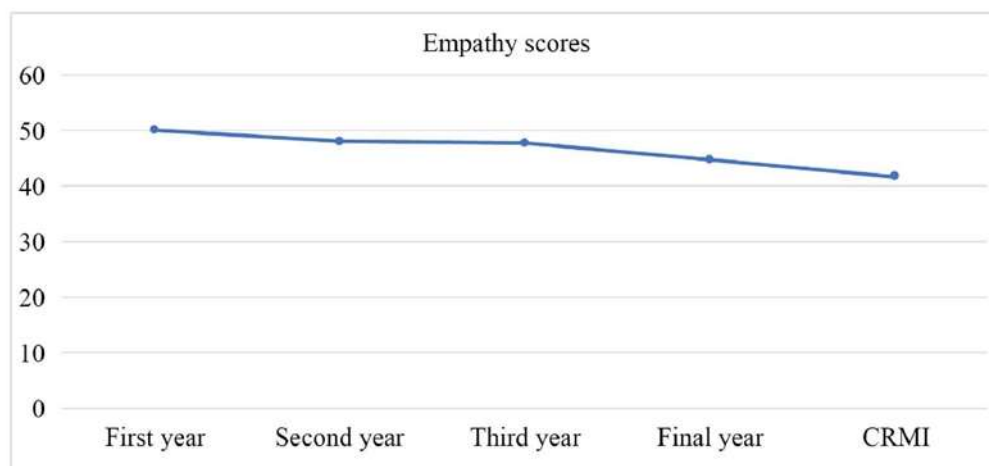Fig 1 : Gender distribution of study participants

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Fig 2: Trends of Empathy levels in medical students

Table 1: Relationship with gender and empathy score

Gender	Median (Interquartile range)	Mann-Whitney U value	P-value
Male	45 (44-47)	11916	<0.001*
Female	48 (45-50)		

*Statistically significant at 5% level of significance

Table 2: Comparison of Empathy scores among each year of medical students

Year of study	Median (Interquartile range)	Kruskal-Wallis H Value	P-value
First year	50 (49-52)	197.855	<0.001*
Second year	48 (47-49)		
Third year	48 (47-49)		
Final year	45 (44-45)		
C.R.M.I	42 (40-43)		

*Statistically significant at 5% level of significance

Table 3: Empathy levels in medical students

Empathy levels	Frequency (%)
Below average	162 (40.5)
Good	238 (59.5)

The comparison of empathy scores among each year of medical students were given in Table 2, first year student's median empathy score was 50 with interquartile range 49 to 52, second year student's median empathy score was 48 with interquartile range 47 to 49, third year student's median empathy score was 48 with interquartile range 47 to 49, final year student's median empathy score was 45 with interquartile range 44 to 45, CRMI's median empathy score was 42 with interquartile range 40 to 43, Kruskal Wallis Test was applied and statistically significant results were found between each year of medical students which shows that the first year students have high empathy scores, second year and third year students have same empathy scores, the empathy scores are declining in final year students and CRMI have the least empathy scores because of the high case load and more pressure in work and entrance exam preparations for post graduate examinations.

The overall empathy scores of medical students is shown in Table3, among 400 medical students, 162 medical students (40.5 %) have below average empathy levels and 238 medical students (59.5 %) have good empathy levels. In this study we found that medical students have good empathy levels.

The trends of empathy levels in medical students was explained in Fig 2, x axis shows all years of medical students and y axis shows median empathy scores, from first year to CRMI there is a gradual decline in empathy levels among medical students.

Discussion

Empathy is important in doctor- patient relationship, it is good for both doctors and patients. According to medical curriculum, doctor should approach patient empathetically[1]. In our study total 400 students were included, the female and male empathy scores are (47.47±4.05) and (45.31±2.88) respectively, which is similar to study done by Baig KS et al[1] where the Females have empathy score of 49.08 (S.D = 7.588) and Males have empathy score of 44.59 (S.D = 7.58), and the studies done by Sadia Riaz et al[25], Bijit Biswas et al[26], Leonard H. Calabrese et al[10], Anna Ratka t al[4], Gayatri Bhatia et al[11], Sonali Saha et al[13] found that females have more empathy levels than males, as the females are more caring and have a good attitude towards patients naturally.

In our study empathy level is high in first year students as they are more interested in learning patient care which is similar to the studies done by Muhammad Zafar Iqbal et[17], Gayatri Bhatia et al[11], Baig KS et al[1] and empathy levels decreases in final year students because of increased patient load, stress in work, increased educational pressure, in clinical environment lack of resource may lead to poor empathy among students towards patients which leads to poor empathy in final year and CRMI students[16], empathy decreases as the patient load increases[3], whereas the studies done by Ardi Findyartini et al[19], Sanjib Kumar Ghosh et al[2], Leonard H. Calabrese et al[10] shows that first year students have low empathy levels which increases in final year of studies, the empathy level is increasing gradually after attending classes, empathy can be increased by effective education to students about patient care and a study done by Sergio Serrada-Tejeda et al[22] shows there was no significant difference found between groups in

empathy levels among students, empathy can increase or decrease in a human lifespan[4].

In our study we have used Toronto Empathy Questionnaire and this questionnaire was used in similar studies where they assessed empathy levels in medical students like Gayatri Bhatia et all[11], Shezadi Sabah Imran[24] and Baig KS et al[1] and the score are declining as the year of studies increases. The decline in scores is because of many factors such as increased pressure due to education, personal reasons, increased patients which is high in final year students and CRMI than first year students.

In our study overall empathy scores are Above-average (59.5%) among medical students which is similar to the study conducted by Luiz Miguel Santiago et al[18] medical students have good empathy levels and study done by Baig KS et al[1] found that medical students have above average empathy score (49.5%), whereas the study done by Sadia Riaz et al[25] the empathy scores are 42.57±7.513 which was below average empathy score of students which is contrary to our study.

By successful training program student's empathy can be increased which helps in improving patient care, good doctor patient relationship and good communication among doctors and patients.

Limitations: We have conducted the study in one institution, the results may vary if the study is conducted in other institutions and we did not compare with other variables like place of residence, cultural differences and individual student's psychological status.

Recommendations: In our study the empathy scores decline in final year students and CRMI, so the empathy levels can be improved by conducting Continuing Medical Education Program about empathy and this helps students to learn patient care and develop their empathy levels.

Conclusion

Empathy is an important factor in improvement of health. Good empathy level leads to good behavior and low empathy level leads to aggressive behavior. Empathy is affected by various internal and external factors. Healthy patient doctor relationship is the success for good quality care. Empathy is lacking from models of professional development. Empathy is

teachable, measurable and proper teaching about ethics, humanity and professionalism to students can improve patient care

Conflict of Interest: We declare that there was no conflict of interest in this study.

Consent: Informed consent was obtained from participants

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