Community Section

A Cross-sectional Study on Empathy and Factors Associated with Individual Variations in Empathy Levels among College Students in Central Kerala

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ABSTRACT

Introduction: Empathy is a social skill that exerts influence on the quality of social relationships. An empathetic person is able to understand the emotions of others, accurately express their feelings, comprehend other's situations and act appropriately. Added to the volatile nature of the age, the youth face challenges from social exclusion, gender based violence and the lack of access to rights and opportunities.

Aim: To measure empathy levels among college students aged 18-28 years in Kerala and to find out the factors associated with individual variations in Empathy levels among them.

Materials and Methods: A cross-sectional survey was conducted among 610 college students of both gender randomly selected from Pathamthitta, Kottayam, Alappuzha, Kollam, and Trivandrum districts in South Central Kerala, India. Interpersonal Reactivity

Index (IRI), short version of Malach-Pines (2005) and Burnout Measure was used for collecting information from study participants. Data was analysed using IBM Statistical Package for the Social Sciences (SPSS) version 20.0 (Chicago, USA). Results were expressed as percentages and proportions.

Results: The mean age of the study participants was 21±1.6 years. The mean empathy score and burnout score of study participants were 58±11.9 and 41.03±12.3, respectively. The empathy score among study participants was found to be significantly associated with age of study participants and burnout.

Conclusion: The present study revealed a good prevalence of empathy and humanistic values among college students in Kerala. However, certain factors like burnout that can affect total individual empathy scores need to be addressed.

INTRODUCTION

Empathy is an ability to place oneself in another's position [1]. Empathy is "a cognitive attribute that involves an understanding of the inner experiences and perspectives of the patient as a separate individual, combined with a capability to communicate this understanding to the patient" [2] and "act on that shared understanding in a helpful and therapeutic way" [3]. This understanding allows the patient to feel respected and validated [4, 5]. The importance of being empathetic is not only limited to the healthcare field. Empathy is a social skill that exerts influence on the quality of social relationships. Empathy influences the development of behaviour and maintenance of healthy relationships. An empathetic person is able to understand the emotions of others, accurately express their feelings, comprehend others' situations and act appropriately [6]. According to the census data of 2011, one-fifth of India's population is made up of the youth.

Added to the volatile nature of the age, the youth adults also face challenges due to social exclusion, gender based violence and the lack of access to rights and opportunities and deal with various life-threatening experiences like depression, suicidal tendencies, and other mental health problems. Needless to say then, if the world's largest young population starts focusing on becoming more morally aware and responsible, our country would be in very safe hands.

The enthusiastic participation of youth in humanitarian acts in the present era becomes a pivotal milestone in the way they look at giving back to the community, be it in big ways or small. Published literature on the prevalence of empathy among the youth is scarce. A study among medical college students found that empathy gradually declined first to seventh semester of the medical study [7]. Another study on the relationship between empathy and perceived stress

among college students and found that stress affected empathy levels among the study participants [8]. Hence, this study aimed to measure empathy levels among college students aged 18-28 years in Kerala, India and to find out the factors associated with individual variations in empathy levels among them.

MATERIALS AND METHODS

This cross-sectional survey was conducted among 610 college students of both gender in Pathanamthitta, Kottayam, Alappuzha, Kollam, and Trivandrum districts in South Central Kerala, India during the months of July 2020 and August 2020. Ethical Clearance was obtained from the Institutional Ethics Committee. (IEC/2020/04/147). Permission was received from the respective college authorities. After receiving consent to participate in the survey, the questionnaire was shared with the study participants personally on online platform as Google docs link.

Inclusion criteria: College students aged 18-28 years were included in the study.

Exclusion criteria: College dropouts and those unwilling to give consent were excluded from the study.

Sample size calculation: Sample size for the study was estimated using the formula using the prevalence from a similar study [9]:

$$N=(1.96)^2 \, pq/L^2+20\% \text{ non respondents}$$

p=43.3%

q=100-p=56.7%

L=10% of p

Obtained sample size (610.9) was rounded off to 610. Four Professional colleges were randomly selected from each of the 5 districts by lottery method. Total 31 students were randomly

selected from each of the 20 colleges and were approached to inform about the study and receive consent for participation.

Data was collected using the following instruments:

(1) **Demographic questionnaire:** A short demographic questionnaire about age, gender, educational status, self-reported academic performance, participation in social work were recorded.

(2) **Interpersonal Reactivity Index (IRI):** The IRI is a measure of empathy on four subscales [10]:

   a) Perspective Taking

   b) Fantasy

   c) Empathic Concern

   d) Personal Distress

Each subscale comprises seven items and answers are provided on a five-point Likert-like scale (0=does not describe me well; 4=describes me very well), with scores ranging from 0 to 28. Higher scores in each subscale indicate higher dispositions for empathic concern, perspective taking and personal distress.

(3) **Short version of Malach-Pines (2005) Burnout Measure [11]:** This scale consists of 10 questions. The responses are scored on a 7-point Likert scale (1= never; 7=always). The Burnout score was calculated by adding the responses of all 10 questions and dividing the total score by 10. A score between 0 and 2.4 indicated no burnout, a score of 2.5 to 3.4 indicated a high risk of burnout. A score of 3.5 or higher indicated that burnout was present.

STATISTICAL ANALYSIS

Data was analysed using IBM Statistical Package for the Social Sciences (SPSS) version 20.0 (Chicago, USA). Results were expressed as percentages and proportions. A bivariate analysis with Analysis of variance (ANOVA) was done followed by multiple linear regression, to ascertain the association between empathy score and other independent study variables. The strength of association was assessed by unstandardised beta and standard error at 95% confidence interval. The p-value <0.05 was considered to be significant.

RESULTS

The mean age of the study participants was 21±1.6 years. The study population consisted of 342 (56.1%) males and 268 (43.9%) females. The demographic characteristics of the study population are given in [Table/Fig-1].

Variables	Number (%)
Age group (years)	
18-21	360 (59.0)
22-25	245 (40.2)
26-28	5 (0.8)
Gender	
Male	342 (56.1)
Female	268 (43.9)
Educational status	
Graduate	539 (88.4)
Postgraduate	71 (11.6)
Academic performance	
Good	386 (63.3)
Poor	224 (36.7)
Have you ever involved in social work?	
Yes	439 (72)
No	171 (28)

[Table/Fig-1]: Demographic characteristics of the study population.

Interpersonal Reactivity Index (IRI)

The dispositional empathy was calculated using the values from four component subscales of empathy namely Fantasy Scale, Perspective taking Scale, Empathic Concern Scale and Personal Distress Scale. The mean empathy score of study participants was 58±11.9 [Table/Fig-2]. The empathy score was normally distributed according to Shapiro-Wilk test (p-value=0.260).

Study variables	Mean value
Interpersonal reactivity index	58±11.9
a) Fantasy scale	12.6±3.9
b) Perspective taking	19.2±5.9
c) Empathic concern	15±3.6
d) Personal distress	15.6±3.9

[Table/Fig-2]: Mean values of empathy among the study participants.

Burnout

The mean burnout score among the study participants was 41.03±12.3. Overall, burnout was present among 416 (68.2%), there was high risk of developing burnout among 140 (23%), and 54 (8.8%) showed no burnout.

Factors associated with empathy

Age, educational status and presence of burnout among the study participants were found to be significantly associated with empathy. The results of one-way ANOVA are given in [Table/Fig-3].

Variables	F-value	p-value
Age	1.95	0.04
Gender	1.28	0.26
Educational status	5.833	0.016
Academic performance	0.042	0.837
Have you ever involved in social work?	0.02	0.89
Burnout	1.78	0.001

[Table/Fig-3]: One-way ANOVA test showing various correlates of empathy of the study participants.
p-value <0.05 considered significant

Multiple regression analysis of the data revealed that the independent variables statistically significantly predict the dependent variable (F=4.275, p-value=0.001). In multivariable model, age of the participants and burnout among them were found to be significant predictors of empathy score adjusted with other variables [Table/Fig-4].

Variables	Unstandardised coefficients			p-value	95% Confidence interval for B	
	B	SE	t		Lower bound	Upper bound
Age	2.411	0.948	2.542	0.011	0.549	4.273
Gender	-0.886	1.000	-0.886	0.376	-2.849	1.077
Educational status	2.897	1.548	1.872	0.062	-0.143	5.937
Academic performance	-0.562	1.007	-0.558	0.577	-2.540	1.416
Have you ever involved in social work?	0.006	1.064	0.006	0.995	-2.083	2.096
Burnout	-1.150	0.391	-2.942	0.003	-1.917	-0.382

[Table/Fig-4]: Multiple linear regression analysis showing predictors of empathy of the study participants.
p-value <0.05 considered significant

DISCUSSION

The present study has attempted to measure the empathy levels among college students and assess the factors associated with empathy. In the present study, the mean values of fantasy scale, perspective taking, empathic concern and personal distress were 12.6±3.9, 19.2±5.9, 15±3.6 and 15.6±3.9, respectively. A similar study conducted in Finland revealed that the mean values of Fantasy scale, perspective taking, empathic concern and personal distress,

were 15.2±5.5, 18.6±4.2, 17.4±4.2 and 9.5±4.2, respectively [12]. These values are comparable to the findings of the present study.

The present study could not reveal any gender difference in empathy. Similar studies, however, showed a higher empathy score among female students [13,14]. One possible reason for this trend could be the higher emotional receptivity of women compared to men. The higher participation of male students in this study and the limited sample size of the study may have affected the elucidation of a similar association. The present study revealed educational status to be one of the correlates of empathy. Similar finding was observed in study carried out at New York's New School for Social Research in 2013. It found that empathy increases as a result of academic advancement [15]. Academic performance of students was found to be associated with Empathy in the present study. Similar results were obtained from a study on empathy conducted among students [16]. Another similar study found that altruism was more common in neighbourhoods that are populated with highly educated individuals working in high status jobs. The higher cognitive ability of educated people was seen to influence high levels of socialisation, thus creating a more altruistic environment around them. It found that educational attainment and occupation status had a profound positive effect on helping behaviour [17].

Involvement in social work among study participants was found to be associated with empathy. This finding is comparable with existing literature findings that people with high levels of empathic concern donate in various contexts, and they are compassionate toward others and seem to be oriented toward alleviating the suffering of others in need [18,19].

The present study found the prevalence of burnout among the study participants to be 68.2%. A Similar study conducted in Kerala revealed the presence of burnout to be 48.5% [20]. In a similar study conducted in Nepal, the prevalence of burnout among undergraduate students was 65.9% [21]. In a study conducted in the US, the prevalence of burnout was found to be as much as 50% [22]. A systemic review by Frajerman A et al., found that the worldwide burnout prevalence for medical students was 44% [23] and, the burnout calculated using Oldenburg Burnout Inventory (OLBI), ranged between 47.0 and 53.0% [24]. The difference in prevalence could be attributed to the difference in the scales used to measure empathy in both of these studies. The different learning environments that the students are exposed to in various colleges and also the varied sociocultural background from which each student comes also could have influenced the same. Either way, the reasons behind such a disparity are worth investigating.

The present study found Burnout to be a negative predictor for empathy among study participants. Although the current prevalence of empathy among students is high, it may only be a matter of time before the rising burnout can negatively influence the empathy among the study participants. A similar study found out a statistically significant negative correlation between empathy and patient related burnout and concluded that empathy could be damaged by burnout [25]. A systematic review compared 10 studies and found consistent evidence for a negative association between burnout and empathy; eight studies reported a negative relationship between empathy and burnout [26].

The various factors leading to burnout among students need to be identified and addressed. Stress management strategies like engaging in hobbies and extra curricular activities may be useful. Interventions like mentor-mentee program, peer support program, training in life skills and adaptive coping strategies when faced with stressors could be incorporated into the academic time in colleges to prevent and combat the problem of burnout among students. The present study underscores the need to incorporate teaching on empathy, communication skills and promotion of humanistic values in the undergraduate curriculum.

Limitation(s)

The data collected in this study was self reported by the study participants. The possibility of misreporting and social desirability bias cannot be ruled out. This study being a cross-sectional study, the temporality of the correlates of empathy identified could not be explained. This study has not scrutinised various factors like family background, behavioural differences, personal experiences and other psychosocial attributes which could be other determinants of empathy.

CONCLUSION(S)

To conclude, the present study revealed that the college students of Kerala are empathetic and have a high prevalence of empathy and humanistic values. However, certain factors like burnout that can affect total individual empathy scores need to be addressed better. The study population being college students, promotion of empathy and human values must be included in the curriculum of all graduate and postgraduate courses.

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