

Correlation of Spiritual Health with Coping Orientation to Problems Experienced by Undergraduate Medical Students in a Private Medical College in Kanchipuram, Tamil Nadu: A Cross-sectional Study

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ABSTRACT

Introduction: Health was classically defined by the World Health Organisation (WHO) as physical, mental, and social well-being; however, a fourth dimension called spiritual health has gained recognition since the 1984 World Health Assembly. Studies have shown that medical students face multiple stressors, and coping is the mechanism through which individuals respond to stress. Despite this, less attention has been given to the role of spiritual health and its correlation with coping strategies.

Aim: The present study aimed to determine the proportion of medical undergraduate students with spiritual health and Coping Orientation to Problems Experienced (COPE), and to assess the correlation between various domains of spiritual health and different coping strategies.

Materials and Methods: The present cross-sectional study was conducted among 540 MBBS students at Meenakshi Medical College Hospital and Research Institute in Kanchipuram, Tamil Nadu, India, between November 2024 and January 2025. Participants were selected using a combination of proportional

probability sampling and simple random sampling. Data were collected using the Spiritual Health Assessment Scale (SHAS) and the Brief COPE scale. Statistical analysis was performed using independent t-test, chi-square test, and Pearson correlation coefficient was employed to analyse the data.

Results: Out of 540 participants, 300 (55.6%) had good spiritual health and 293 (54.3%) demonstrated good coping skills. Male students showed significantly higher mean spiritual health scores ($p=0.018$). A statistically significant association was found between the father's education and the spiritual health of students ($p<0.001$). A significant positive correlation ($r=0.224$, $p<0.01$) was observed between spiritual health and coping strategies.

Conclusion: Over half of the undergraduate medical students demonstrated good spiritual health and coping abilities. The findings highlight a positive correlation between spiritual health and coping orientation. Academic institutions should promote interventions that enhance spiritual well-being, which may help students manage stress more effectively.

Keywords: Coping skills, Social well-being, Spirituality, Students perception

INTRODUCTION

Health is a multifaceted concept often viewed with its classical definition of the World Health Organisation (WHO), where physical, mental, and social well-being are usually taken into account; however, there exists a fourth dimension called spiritual health [1]. Organisations like the WHO and various authors across countries have different perspectives about spiritual health that have gained importance over the years. To elaborate, WHO (1998) in their World Health Organisation Quality Of Life (WHOQOL) scale added a domain called Spirituality, Religiousness, and Personal Beliefs (SRPB), which examines an individual's personal beliefs and how these affect quality of life [2].

Spiritual health is also looked at as individual and population indicators, where individual indicators deal with generosity, self-discipline, self-sacrifice, charity, etc., and population indicators as equity, justice, sexual equality and participative decision-making [3]. To add on, Gaur KL et al., defined spiritual health as "A state of being where an individual is able to deal with day-to-day life in a manner which leads to the realisation of one's full potential; meaning and purpose of life; and happiness from within" [4]. Spiritual health is also viewed as four types of connections, such as connecting with God, oneself, others, and nature [5]. This study looked at spiritual health as a good connection between mind,

body, and soul/spirit, which was observed using the SHAS that has three domains, such as self-development, self-actualisation, and self-realisation [4].

The other major variable explored was the COPE by students. Coping was defined as the behavioural response of an individual to stress and was categorised into problem-focused, emotion-focused, meaning-focused, and social coping strategies [6]. As far as medical students were concerned, they deal with numerous stressors arising from both academic and personal spheres. This included academic workload, financial stress, expected to maintain a professional demeanour, and increasing expectations from patients to address the spiritual aspects of their care [7-10].

In recent years, there had been growing emphasis on the well-being and overall health of medical students beyond just academic success. Previous studies reported good levels of spiritual health among medical students, 51.1% in Karachi and 75.7% in West Bengal [11,12]. While research on mental health and coping in medical education was extensive, relatively few studies focused on the correlation between spiritual health and coping strategies [11-13]. However, some evidence indicated that spiritual well-being had a positive influence on health and could serve as an effective coping mechanism for future healthcare

professionals [12,13]. With this background, the present study aimed to determine the proportion of medical undergraduate students with spiritual health and COPE and to assess the correlation between domains of spiritual health and various coping strategies.

MATERIALS AND METHODS

The present cross-sectional study was conducted among MBBS students of Meenakshi Medical College Hospital and Research Institute in Kanchipuram, Tamil Nadu, India, in the Department of Community Medicine between November 2024 and January 2025. The study was approved by the Institutional Ethics Committee (IEC) (Ref No: MMCH & RI IEC/ PG /12/ NOV/ 24).

Inclusion criteria: Medical students from the second professional year to the Compulsory Rotating Medical Internship (CRMI), aged above 20 years, who were present on the day of data collection and provided consent were included in the study.

Exclusion criteria: Given that the SHAS [4] has been validated for individuals between 20 to 60 years of age, majority of students in the first MBBS professional year, were under 20 years of age, hence; were excluded.

Sample size: Based on the study results of Murali AJ et al., which reported good coping scores in 31% of participants, the sample size was calculated using the formula $n = Z\alpha^2 pq/d^2$. At a 95% confidence level, with 4% absolute precision and a 10% non-response rate, the required sample size was determined to be 540 [13]. "First, probability proportionate to size sampling was used to ensure equal representation of students from all four batches, with 135 out of 250 students selected from each batch. Thereafter, using the attendance register, students in each batch were numbered up to 250. This formed our sampling frame. From each batch, 135 students were randomly selected through simple random sampling using a computerised random number generator and included in the study.

Study Procedure

After obtaining written informed consent from the participants, the students from the second year to the CRMI were stratified based on their academic year. The data were collected using a pretested, prevalidated, structured questionnaire, which included the SHAS, used after obtaining prior consent from the author, and the Brief COPE scale, which was an open-access tool available for research use [4,14]. Sociodemographic details such as gender, age, type of school, the occupation and education of both father and mother were also collected. SHAS with a Cronbach's alpha of 0.82, was a scale to assess the spiritual health of individuals between 20 and 60 years of age and was scored on a Likert scale from 1 to 5 [4]. The scale has three domains: self-development, self-actualisation, and self-realisation, with each domain comprising seven questions [4]. Each domain's scoring was added to obtain the mean value with Standard Deviation (SD) for the respective domain. Based on the answer key, the total spiritual health score ranges from 21 to 105 [4]. A score from 21 to 49 was considered as poor spiritual health, a score from 50 to 77 as fair spiritual health, and a score from 78 to 105 as good spiritual health [4].

A Brief COPE scale with a Cronbach's alpha of 0.78 was a 28-item self-reported questionnaire used to measure the coping strategies of the individuals during stressful life events [15]. The Brief COPE scale has a scoring range from 1 to 4, where [14]:

- 1 - 'I haven't been doing this at all'
- 2 - 'A little bit'
- 3 - 'A medium amount'
- 4 - 'I've been doing this a lot'.

The scale included three overarching coping styles, such as problem-focused coping, emotion-focused coping and avoidant-coping [14]. Problem-focused coping and avoidant coping each included eight items, and while emotion-focused coping comprised 12 items in total [14]. For the study purpose, the operational definition to categorise the individuals as those with good or poor coping skills was based on the mean value of the scores. A mean value greater than 66 was defined as good coping, while a score below or equal to 66 was considered poor coping.

The data were collected in a classroom setting using a structured questionnaire shared through Google forms. On the day of data collection, students who were present and those who consented after having read the participant information sheet filled out the questionnaire forms during class hours. Two investigators, an assistant professor and a Postgraduate in Community Medicine with training in research methodology, were present to guide the process, clarify any doubts, and ensure smooth and ethical data collection.

STATISTICAL ANALYSIS

For data analysis, the data were coded and entered into a computer using Microsoft Excel for Mac version 16.8 and analysed using Jamovi version 2.3.28.0. Descriptive statistics and inferential statistics like Analysis of Variance (ANOVA), independent t-test, Mann-Whitney U test, and bivariate correlations (Pearson r correlation) were used to analyse the data. The p-value of <0.05 was considered statistically significant.

RESULTS

The study comprised 540 medical students. Among them, 321 (59.4%) were females and 219 (40.6%) were males. Regarding schooling, 517 (95.7 %) of the students completed their schooling in a private setting. Of all respondents, almost 401 (75%) of student's fathers were undergraduates or above. Likewise, 395 (73.2%) of the mothers were undergraduates or above. In terms of the parental occupations, (37.8%) of fathers were self-employed and (45%) of mothers were homemakers [Table/Fig-1].

As shown in [Table/Fig-2], (55.6%) of students had good spiritual health, while 184 (34.1%) had fair spiritual health and 56 (10.4%) had poor spiritual health. Likewise, 293 (54.3%) of participants showed good coping skills, the remaining 247 (45.7%) showed poor coping skills.

On analysing the various dimensions of spiritual health, i.e., self-development, self-actualisation and self-realisation, the highest mean score was observed in self-development (27.3 ± 5.51) [Table/Fig-3].

Furthermore, [Table/Fig-4] presents the various domains of coping strategies used by students during their stressful situations. Among the emotion-focused coping strategies was the most commonly used strategy, with a mean score of 28.8 ± 5.53 , and avoidant coping (16.5 ± 3.77) was the least commonly used domain.

Analysis of the association between spiritual health and other sociodemographic characteristics revealed that male participants had significantly higher mean spiritual health scores, with a p-value of 0.018. It was also observed that the father's education was significantly associated with the spiritual health of students ($p < 0.001$) [Table/Fig-5]. There was no significant association between coping skills and sociodemographics of the students.

The result of the Pearson r correlation showed a significant positive correlation between spiritual health and coping skills, indicating that the higher level of spiritual health were associated with higher the level of coping skills ($p < 0.001$, $r = 0.224$) as shown in [Table/Fig-6]. The results also demonstrated a significant inverse correlation between spiritual health and avoidant coping ($p = 0.05$, $r = -0.083$).

S. No.	Variables		Frequency (n)	Percent (%)
1.	Gender	Female	321	59.4
		Male	219	40.6
2.	Type of school	Private	517	95.7
		Government	17	3.1
		Others	6	1.1
3.	Education of father	Illiterate	29	5.4
		Schooling	110	20.4
		Undergraduate	159	29.4
		Postgraduate and above	242	44.8
4.	Education of mother	Illiterate	9	1.7
		Schooling	136	25.2
		Undergraduate	217	40.2
		Postgraduate and above	178	33.0
5.	Fathers occupation	Unemployed	3	0.6
		Self-employed	204	37.8
		Private	157	29.1
		Government	166	30.7
		Retired	10	1.9
6.	Mothers occupation	Home maker	243	45.0
		Self-employed	96	17.8
		Private	62	11.5
		Government	130	24.1
		Retired	9	1.7

[Table/Fig-1]: Sociodemographic characteristics of the study participants (N=540). Descriptive statistics (frequency and percentage) were used to summarise the sociodemographic characteristics of the participants.

Variables		Frequency (n)	percent (%)
Spiritual health	Poor	56	10.4
	Fair	184	34.1
	Good	300	55.6
Coping skills	Good Coping skills	293	54.3
	Poor coping skills	247	45.7

[Table/Fig-2]: Frequency distribution of spiritual health and coping skills among study participants (N=540). Descriptive statistics (frequency and percentage) were used to summarise the levels of spiritual health and coping skills of the participants.

S. No.	Variables	Mean±SD	Minimum	Maximum	SE
1.	Self-developmental	27.3±5.51	7	35	0.237
2.	Self-actualisation	26.2±5.88	9	35	0.253
3.	Self-realisation	24.1±5.93	9	35	0.255
4.	Spiritual health – Final Score	77.6±15.38	32	105	0.662

[Table/Fig-3]: Descriptive statistics of spiritual health domain scores among study participants (N=540). Descriptive statistics (mean, standard deviation, minimum, maximum and standard error) were used to summarise the various domains of spiritual health of the study group.

S. No.	Variables	Mean±SD	Minimum	Maximum	SE
1.	Problem-focused coping	20.2±4.29	8	32	0.185
2.	Emotion-focused coping	28.8±5.53	12	45	0.238
3.	Avoidant coping	16.5±3.77	8	28	0.162
4.	Coping skills -Total score	65.5±10.29	28	96	0.443

[Table/Fig-4]: Descriptive statistics of various coping styles scores among study participants (N=540). Descriptive statistics (mean, standard deviation, minimum, maximum and standard error) were used to summarise the various coping skill styles of the participants.

Pearson's correlation coefficient was used to assess the correlation between the dimensions of spiritual health and various coping strategies.

DISCUSSION

The results revealed that 55.6% of the students had good spiritual health, which was similar to the findings of the study by Mansoori N et al., where 51.1% of students were reported to have good spiritual health [Table/Fig-7] [11]. This finding was inconsistent with some of previous studies. For example, the study by Raghuvveer P et al., reported 36% and Murali AJ et al., found about 31% of participants having good spiritual health [13,16]. Similarly, a study conducted by Jadgal MS et al., showed 43.5% of students with good spiritual health [17]. Similarly, studies conducted by Allahbakhshian M et al., and Hatami S et al., reported much higher rates, with 97.9% and 87.3% of participants, respectively, exhibiting good spiritual health [18,19]. These variations could be attributed to differences in the demographic characteristics and geographical regions of the study populations. Differences in background were also observed. For example, male students had significantly higher mean spiritual health scores than female students ($p=0.018$). This finding contrasted with that of Murali AJ et al., who reported that female students often exhibited higher spiritual health [13]. Similarly, Ziapour A et al., found no significant gender difference in spiritual health, which also opposed with the present study [20]. The variation could be attributed to differences in spiritual expression between genders.

Among variables related to parental education, the father's level of education showed a significant association with students' spiritual health. This finding was consistent with a study conducted among medical students in Mangalore by Raghuvveer P et al., [16]. In contrast, a study conducted by Panda B et al., reported a significant association between maternal education level and spiritual health, which contrasts with the findings of this present study [21].

Coping strategies are psychological and behavioural techniques used to manage, tolerate, lessen, or minimise stressful situations. In the present study, 54.3% of the students demonstrated good coping skills. Likewise, Sharma A et al., reported a similar proportion, with 54% of students exhibiting effective coping strategies [22]. Similarly, the study by Sen S et al., reported that 66.1% of students demonstrated good coping skills [Table/Fig-7] [12]. When the demographic variables were analysed about coping strategies, no significant associations were observed. This finding was consistent with a finding of Haider SI et al., [23]. However, it contrasted with a study conducted by Javed K et al., which showed a significant correlation between coping strategies and demographic factors such as gender and education [24].

When the dimensions of spiritual health were studied, the highest mean score was found in self-development (27.3 ± 5.51), followed by self-actualisation (26.2 ± 5.88) and self-realisation (24.1 ± 5.93). The prominence of self-development was in line with findings from a study conducted among dental students in Uttar Pradesh by Dhama K et al., [25]. This might be because achieving and maintaining spiritual health fundamentally requires self-development, which includes basic instincts such as patience, self-control, generosity, etc., [4].

Concerning the domains of coping skills, students in this study had the highest mean score of 28.8 ± 5.53 in emotion-focused coping, which includes strategies such as acceptance, self-blame, use of emotional support, humour, and religion [15]. This finding aligns to the study by Murali AJ et al., which noted acceptance, humour strategy, and religion coping strategies, a characteristic of emotion-focused coping strategies among medical students [13]. A similar observation was made by Al-Dubai SA et al., who also found

Variables		Spiritual health		Coping skills	
		Mean±SD	p-value	Mean±SD	p-value
Gender	Female	76.6±14.1	0.018*	65.3±10.7	0.613
	Male	79.1±17.06		65.8±9.73	
Type of school	Private	77.4±15.3	0.152	65.5±10.16	0.958
	Government	85.2±15.4		64.4±15.17	
	Others	71.3±19.4		65.5±4.85	
Year of the study	Second year	79.5±14.8	0.0016**	67.0±10.90	0.080
	Third year	78.4±13.6		66.0±9.87	
	Fourth year	78.6±17.1		65.2±10.78	
	CRMI	74.0±15.4		63.9±9.40	
Education of father	Illiterate	59.5±18.2	0.001**	66.4±7.79	0.889
	Schooling	75.6±17.7		65.1±10.73	
	Undergraduate	78.4±13.8		65.7±9.99	
	Postgraduate and above	80.2±13.3		65.5±10.59	
Education of mother	Illiterate	74.0±17.0	0.522	65.0±7.70	0.987
	Schooling	78.1±15.0		65.6±10.67	
	Undergraduate	78.5±15.5		65.6±10.33	
	Postgraduate and above	76.4±15.5		65.3±10.14	
Father's occupation	Unemployed	81±6.5	0.693	50.7±14.05	0.506
	Self-employed	77.1±15.48		65.6±10.74	
	Private	78.5±15.08		65.3±10.53	
	Government	76.9±15.71		65.6±9.23	
	Retired	82.0±15.97		68±10.31	
Mother's occupation	Home maker	78.2±14.0	0.616	65.4±10.83	0.875
	Self-employed	75.2±17.30		65.5±10.07	
	Private	77.2±15.25		65.1±11.92	
	Government	78.6±16.20		65.5±8.53	
	Retired	76.7±18.91		69.3±10.58	

[Table/Fig-5]: Difference in total spiritual health score and coping skills score across sociodemographic variable (N = 540).

*Denotes Statistical significance of < 0.05 **Denotes Statistical significance of < 0.001 Pearson's correlation coefficient was used to assess the correlation between the dimensions of spiritual health and various coping strategies.

Coping skills	Correlation	Self-developmental	Self-actualisation	Self-realisation	Spiritual health - Final Score
Problem focussed coping	Pearson's r p-value	0.187 <0.001**	0.200 <0.001**	0.177 <0.001**	0.212 <0.001**
Emotion focussed coping	Pearson's r p-value	0.236 <0.001**	0.274 <0.001**	0.311 <0.001**	0.310 <0.001**
Avoidant coping	Pearson's r p-value	-0.095 0.027*	-0.078 0.070	-0.048 0.263	-0.083 0.055
Coping skills final score	Pearson's r p-value	0.170 <0.001**	0.202 <0.001**	0.223 <0.001**	0.224 <0.001**

[Table/Fig-6]: Correlation matrix between the dimensions of spiritual health and domains of coping skills (N=540).

*Denotes Statistical significance of < 0.05 **Denotes Statistical significance of < 0.001 Pearson's correlation coefficient was used to assess the correlation between the dimensions of spiritual health and various coping strategies.

Study	Place/year of the study	Population	Sample size	Spiritual health	Coping skills
Present study	Kanchipuram, 2025	From second professional year to CRMI MBBS students	520	55.6% of students showed good spiritual health.	55% of students showed good coping skills.
Mansoori N et al., [11]	Karachi 2017	Medical Students	511	75.7% had refined spiritual health	66.1% showed good coping scores.
Sen S et al., [12]	Kolkata 2013	Third semester MBBS students	288	51.1% of students were found to have good spiritual health.	28.6% of students followed active coping skills.
Dhama K et al., [25]	Modinagar, Uttar Pradesh 2016	Dental Students	389	74.55% of participants had fair spiritual health.	Among the coping strategies, the highest mean score was seeking diversion.

[Table/Fig-7]: Comparing the proportion of spiritual health and coping skills with other articles.

that emotion-focused coping strategies were commonly used by medical students [26].

The least utilised coping domain in this study was avoidant coping (16.5±3.77), which includes behaviours such as self-distraction,

denial, behavioural disengagement, and substance use. This finding aligned with results from a study conducted in Nepal [27]. In contrast, a study done by Mansoori N et al., in Karachi reported that a majority of students relied on addictive substances as a coping

strategy [11]. Additionally, a study conducted by Dhama K et al., reported that seeking diversion was the coping strategy with the highest mean score among dental students [Table/Fig-7] [11,12,25]. Such differences may be attributed to cultural norms and societal attitudes toward substance use.

The present study also identified a significant positive correlation between spiritual health and coping skills. This aligned with the findings of Sen S et al., who reported a positive relationship between spiritual health and adaptive coping strategies [12].

An inverse correlation was observed between avoidant coping strategies and both overall spiritual health and the self-development domain of spiritual health. It was likely that students who advocate the self-development dimension may be more inclined to pursue alternative proactive coping strategies rather than avoidant coping. Additionally, a study by Taheri-Kharamah Z et al., observed a significant association between spiritual well-being and academic well-being [28]. Similarly, Raghavendra N and Lokesh KC found a notable correlation between spiritual health and perceived stress levels among medical students [29]. These consistent findings suggested that students with higher levels of spiritual health were more likely to engage in constructive coping strategies and experience enhanced overall well-being.

Limitation(s)

This study was conducted in a single private medical college. As a result, the study population lacked a wide range of socioeconomic backgrounds. Therefore, while the findings were meaningful and relevant for this group, they cannot be fully generalised to medical students from different institutions or regions with more diverse populations.

CONCLUSION(S)

The present study highlights the critical role of spiritual health in shaping the coping abilities of undergraduate medical students. It revealed that nearly half of the students exhibited good spiritual health and coping skills. Notably, male students showed higher levels of spiritual health, and paternal education emerged as a potential influencing factor. A significant positive correlation between spiritual health and coping strategies suggests that spiritual well-being may empower students to manage stress more effectively and reduce dependence on avoidant coping mechanisms. These findings underscore the need to recognise spiritual health as a key element in student wellness. Incorporating spiritual well-being into medical education and student support services could enhance student's resilience and academic success. Future longitudinal studies are recommended to establish causal relationships and evaluate the long-term impact of spiritual health interventions on stress management and educational outcomes.

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