The Role of Mental Health in the Medical Performance of MBBS Students

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Abstract

Mental health (MH) and emotional intelligence (EI) have experienced significant growth in the past decade. These terms wield considerable influence over various aspects of human life. Academic achievement serves as a pivotal indicator of a student's progress in medical education. The theoretical underpinning of this study is grounded in Waverick's (2006) model of emotional intelligence and mental health. The research endeavors to explore the intricate relationship between EI, MH, and academic performance among MBBS students. A thorough review of literature spanning from 2010 to 2020, covering a decade, was conducted. Twenty-five research articles were scrutinized to identify gaps in the existing research. A conceptual model was constructed, and a research objective was delineated. Hypotheses were formulated in alignment with the study's objective.

This empirical investigation is based on a sample comprising 1060 MBBS students from various regions in India, employing stratified sampling. The Warwick-Edinburgh Emotional Intelligence Scale (a=.0.887) was adapted, refined, and employed to collect responses related to both EI and MH from the participants. Pearson's correlation analysis reveals a direct relationship between academic performance and the combined impact of EI and MH (r=.870). The study implies that both EI and MH exert a substantial influence on academic achievement. These findings bear relevance for students, educators, professors, mentors, consultants, and parents seeking to comprehend the pivotal role of both EI and MH in academic pursuits. It is recommended that educational authorities consider incorporating both EI and MH as subjects for medical students to enhance both academic performance and overall quality of life. Both EI and MH prove to be effective and essential for success in any profession. Given that students navigate the emotions of faculty, non-teaching staff, peers, and family, cultivating emotional management skills, alongside a robust mental health framework, is imperative for fostering a healthier, more productive, and rewarding life.

Keywords: *Mental health, Medical performance, MBBS, Students, Medical education.*

1. Introduction

Emotional well-being (EWB) has become the cornerstone of organizations and institutions in recent years. It is the focus of extensive research undertaken by scholars, scientists, academics, and management professionals (Rizwan, 2020). EWB equips an individual to navigate various situations by utilizing both cognitive and emotional capacities (Venkteshwar, 2018). While intelligence accounts for only 20% of an individual's success, the remaining 80% is attributed to EWB (Telas, 2005). Individuals with lower EWB tend to exhibit comparatively inferior performance compared to those

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with higher EWB (Rizwan, 2020). The lifestyles and living conditions of the youth have engendered stress in various forms, necessitating a high level of EWB to overcome these challenges. Students frequently engage with peers, faculty members, recruiters, and others in society who possess diverse backgrounds, and EWB plays a pivotal role in aiding them in adapting to such diversity (Telas, 1995).

1.2 Mental health

Emotional intelligence (EI) was conceptualized by Salovey. EI involves being conscious of one's emotions and acquiring the ability to regulate them effectively, especially in challenging situations. For both personal and professional achievements, EI stands as a pivotal element. EI serves as a gauge to comprehend both self and others' emotional states. Proficient utilization of EI may forecast up to 80% of life accomplishments, encompassing a sense of fulfillment (Telas, 1995).

1.3 Theoretical framework of Mental health

Reuven Waverick (2006) characterizes emotional well-being (EWB) as "the capability of an individual to comprehend oneself as well as others." EWB is perceived as a dynamic process with the capacity to influence performance and accomplishments, emphasizing a procedural approach rather than focusing solely on outcomes (Waverick, 2002). According to Waverick, the enhancement of EWB is attainable through training and therapeutic interventions (Waverick, 2002).
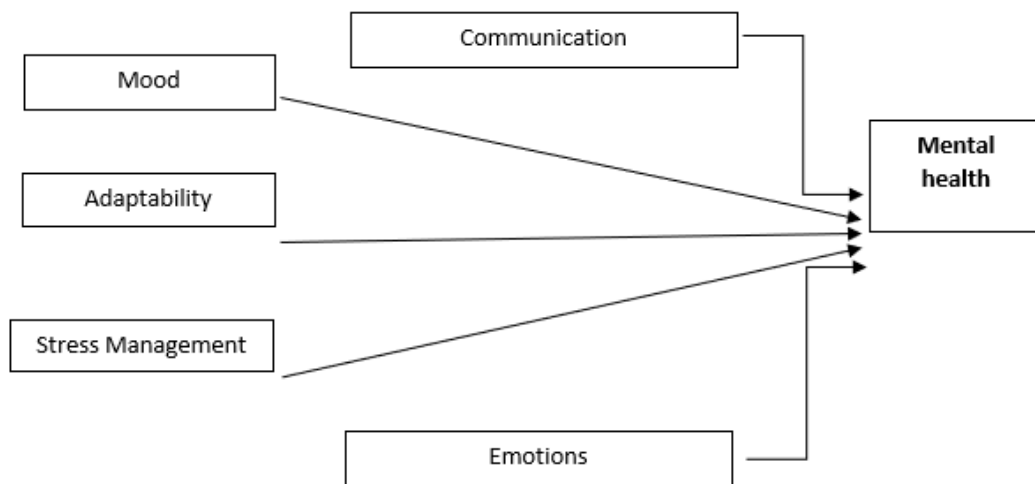

Figure 1- Dimensional Model of MH

Source: Bar On (2006)

1.4   Need for the study

A growing number of educators acknowledge that an exclusive focus on academic medical education for aspiring doctors may leave them ill-prepared for real-world challenges. Educational institutions in the medical field are increasingly troubled by issues such as violence in the classroom, disruptive behaviors, disciplinary problems, lack of respect, and instances of bullying (Festus, 2012). In India, there is a shortage of systematic data on the prevalence of social and mental health issues and their impact on medical performance within educational institutions (McCann, 2020). Existing research on the correlation between social and mental health issues and medical performance lacks consensus (Gupta, 2014). Consequently, the current study delves into the influence of mental health on the medical performance of MBBS students.

2. Review of Literature

2.1 Studies on Mental health and medical performance

Emotional health (EH) aids in managing emotional impulses, understanding others' deepest sentiments, and navigating relationships with ease. It also refers to the ability to monitor and regulate one's own and others' emotions to control thoughts and actions.

MacCann (2020) conducted a meta-analysis examining the association between student EH and medical performance. The overall effect, with $\rho = .20$ using robust variance assessment (N = 42,529, k = 1,246 from 158 references), indicates a modest correlation. The association is notably stronger for skill-based EH ($\rho = .24$, k = 50) compared to self-rated ($\rho = .12$, k = 33) or mixed EH ($\rho = .19$, k = 90). Skill-based, self-rated, and mixed EH explained an additional 1.7%, 0.7%, and 2.3% of the variance, respectively, after controlling for intelligence and Big Five personality traits. Understanding and management aspects of skill-based EH explained an additional 3.9% and 3.6%, respectively. Relative importance analysis suggests that EH is the third most significant predictor for all three domains, following intelligence and integrity. This meta-analysis indicates that EH has a small to moderate relationship with medical performance, with higher EH associated with better grades and achievement test scores. The correlation is stronger for skill-based EH tasks than for rating scales of EH, especially for tasks measuring emotional understanding and management.

Rizwan (2020) examined the impact of EH and its four domains (awareness, self-management, social awareness, and social management) on the academic performance (AP) of engineering students. The study, involving 350 students from public and private engineering colleges in northern Punjab, Pakistan, revealed a positive influence of EH on academic performance. Additionally, senior students exhibited higher EH than junior students.

Jafari (2020) conducted a cross-sectional study on Shiraz medical students, revealing no statistically significant correlation between EH and academic achievement (P=0.949). The lack of a strong connection may be attributed to the nature of the tests based on memorization rather than in-depth learning.

Chan (2020) explored how EH is associated with student engagement and how EH and engagement jointly predict key learning outcomes in medical education. The study, involving 560 first-year students from 10 faculties of a university in Hong Kong, showed that EH positively predicted all aspects of student engagement, contributing to the prediction of GPA, generic outcomes, and satisfaction with the university experience. The model explained 16%, 44%, and 38% of the student's GPA, generic learning outcomes, and satisfaction, respectively.

Razia and Ahmad (2017) aimed to determine the academic achievement of adolescents by examining EH and socio-economic status. The study, involving 292 adolescents from class XI in the Aligarh district, found a strong relationship among EH, socio-economic status, and academic achievement. EH and socio-economic status together accounted for 18.4% of the variance in academic achievement.

Moshahid (2017) conducted a comparative study of EH among management and engineering students in Hyderabad, India. The study, involving 160 students, found no significant difference between the levels of EH among management and engineering students. However, a significant difference was observed between the levels of EH among male students in management and engineering.

Rani (2017) investigated EH among senior medical students, considering gender, type of school, and academic achievement. The study, with a sample of 300 senior medical students in the Rohtak region, revealed no significant difference in mean EH scores concerning gender and type of school. However, a significant difference was found in

mean EH scores between high and low achievers.

Garg and Singh (2016) examined EH among medical students, revealing no gender differences in various aspects of EH. However, rural students exhibited a higher level of EH compared to urban students, while no significant difference was found between government and private school students.

Bakhshi (2016) investigated the relationship between EH and academic achievement among medical students. The study, with 160 medical students, found no significant gender differences in EH. However, a strong positive correlation was observed between EH and academic achievement.

Brar and Kaur (2015) studied EH among adolescents, revealing that male teenagers exhibited stronger mental health than females, possibly due to exposure to a friendlier physical and socio-cultural environment.

Saleem (2015) explored the connection between EH and academic achievement among postgraduate students in Pakistan. The study demonstrated a strong correlation between EH and academic achievement.

Umaru (2015) investigated the impact of instruction in EH skills on locus of control and academic self-efficacy among junior medical students in Niger State, Nigeria. The study revealed that EH skills were effective in guiding locus of control and enhancing academic self-efficacy.

Gupta and Moun (2014) examined EH among medical students, finding no significant gender differences in various aspects of EH. The study adopted a descriptive survey method.

In summary, the studies conducted by MacCann (2020), Rizwan (2020), Jafari (2020), Chan (2020), Razia and Ahmad (2017), Moshahid (2017), Rani (2017), Garg and Singh (2016), Bakhshi (2016), Brar and Kaur (2015), Saleem (2015), Umaru (2015), and Gupta and Moun (2014) collectively indicate that EH has a direct impact on academics. However, Jafari (2020), Moshahid (2017), Festus (2012), Olatoye (2010) have demonstrated that there is no strong relationship between EH and medical performance.

2.2 Research gap

The existing research has predominantly focused on the connection between MH and the medical performance of students in the Middle East and Africa, as evidenced by studies conducted by Petrides (2004), Parker (2005), Oke et al. (2006), Kumar (2009), Mohammadtaheri (2011), Sekar (2012), Mir (2013), Adnan (2014), Minbashian (2020), and Rizwan (2020). However, it's crucial to recognize the geographical limitation of these findings, as outcomes may vary in India due to cultural differences and distinct academic evaluation standards (Unnikrishnan, 2015).

Notably, there is a dearth of published research on the relationship between MH and the medical performance of postgraduate students in India, indicating a significant gap in the literature and a population void that warrants further exploration.

2.3 Conceptual model
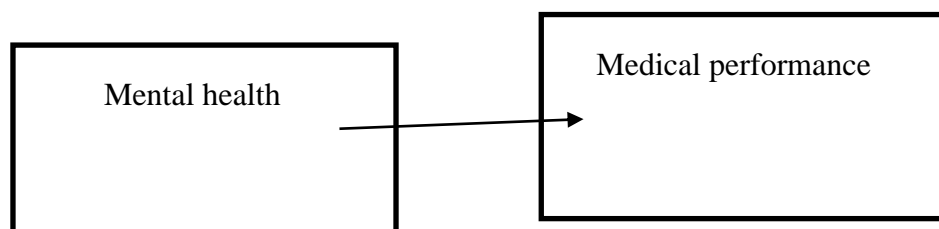
This conceptual framework is formulated in response to the gaps identified in the research. Its primary objective is to elucidate the correlation between mental health

(Independent Variable) and medical performance (Dependent Variable).

3. Research Methodology

3.1 Research inquiry: Can mental health impact the academic performance of medical students?

3.2 Objective: To comprehend the influence of mental health on the academic performance of MBBS students.

3.3 Hypothesis: There is a significant correlation between mental health and the academic performance of MBBS students.

3.4 Instrument: The tool utilized in this investigation is the "Warwick-Edinburgh Mental Well-being Scale (WEMWBS)," comprising 14 questions related to mental health, presented on a 5-point Likert scale. The scale ranges from 1=None of the time, 2=Rarely, 3=Some of the time, 4=Often, to 5=All of the time. The tool was specifically designed to assess an individual's mental health, demonstrating high reliability with a Cronbach's alpha of .89.

3.5 Sampling design: In India, there are approximately 200,000 students enrolled in MBBS programs, with nearly 33,000 actively pursuing this course. The focus population for this study encompasses MBBS students in India (Shiksha, 2017).

Sampling Frame

The sampling frame is derived from the target population, serving the purpose of refining the infinite pool of potential respondents to the specific participants required for the study. It comprises the list of units from which the sample will be selected. As per the Indian Administration (2016), the country is divided into four administrative divisions: the First Division includes Delhi, the Second Division includes Mumbai, the Third Division includes Kolkata, and the Fourth Division includes Chennai. With a total of 456 MBBS colleges and an enrollment of 33,000 students in India (Shiksha.com, 2017), this study exclusively focuses on MBBS students who have completed their first two years and possess their SGPA scores.

Sample Size

The selection of samples followed the application of sample size formulas established by Cochran (David, 2005). Cochran's formula constituted the second method employed for determining the sample size (David, 2005).

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

The Original Sample is 1000.MBBS. Population in India is 33,000 (Shiksha,2018)

$$n = \frac{1000}{1 + \frac{(1000 - 1)}{33,000}}$$

$$n = \frac{1000}{1.04343478}$$

$$n = 958.37 = 1058 \text{ students}$$

Nevertheless, for enhanced precision and accuracy, a sample comprising 1060 respondents was chosen for this study. In terms of the data analysis tool, Structural Equation Modeling (SEM) was employed, executed through the AMOS 20.0 Program.

Sampling Method

i. The study employed stratified sampling, where strata were defined based on geographical locations, and the researcher randomly selected samples proportionally using simple random sampling. The sample was stratified based on the four administrative divisions in India: First Division, Second Division, Third Division, and Fourth Division.

ii. Subsequently, simple random sampling was applied. With a total of 456 MBBS colleges and 33,000 students in India (Shiksha, 2020), Delhi, Mumbai, Kolkata, and Chennai had 85, 78, 63, and 64 MBBS colleges, respectively. All MBBS college names were placed into separate boxes according to their divisions, and through a lottery method, two college names were drawn.

iii. The selection of students was based on convenient sampling, requiring them to complete the MH and study skills questionnaire.

Inclusion Criteria

This research was specifically carried out among MBBS students who have successfully concluded their initial two years of study and possess their SGPA scores. Individuals who are yet to complete their initial two years or lack their SGPA scores for the first two years have been omitted from the study.

Data Analysis

Analysis based on correlation

Table 2 correlation -Mental health &_Medical performance

Mental health	Medical performance
Overall Mental health	.870**

**. Correlation is strong at the 0.01 level (2-tailed).

Source : Survey

A Pearson product-moment correlation coefficient was calculated to evaluate the association between mental health (MH) and the medical performance of MBBS students. The overall strength of the relationship between mental health and medical performance was moderate (r = 0.870), with the relationships demonstrating significance at the 0.01 level.

The hypothesis is substantiated, indicating a robust connection between mental health and medical performance. The correlation between MH and medical performance was found to be moderate. This aligns with the findings of studies conducted by Parker (2004), Petrides (2004), Gupta & Moun (2014), Javadi (2014), Sharma (2014), and Rizwan (2020), all of which consistently assert that MH directly impacts medical performance.

4. Findings and Discussion:

There exists a robust correlation between mental health and medical performance, with the relationship being characterized as moderate. The investigations conducted by Parker (2004), Petrides (2004), Gupta & Moun (2014), Javadi (2014), Sharma (2014), and Rizwan (2020) consistently affirm that mental health has a direct influence on medical performance. These studies indicate that students within a random sample of MBBS students who exhibit higher levels of mental health tend to excel academically in comparison to their counterparts with lower mental health (Petrides, 2004). Additionally, individuals with elevated mental health demonstrate social responsibility and a dedication

to meeting the academic standards established by medical educational institutions, rendering them valuable assets to both the institute and society at large.

Implications:

Educational Implications in Medical Institutions: Medical educational institutions should disseminate awareness on Mental Health (MH) to all stakeholders, including teachers, students, parents, and management, through avenues such as symposiums, seminars, motivational videos, and case studies. It is recommended to make the annual assessment of MH for students mandatory at the institutional level. Furthermore, systematic and consistent training programs for MH within institutions are deemed imperative.

Societal Implications: The establishment of MH centers dedicated to training and coaching should be widely implemented to address societal concerns. These centers ought to focus on identifying gaps in individuals' mental health and concentrate on enhancing their MH skills.

5. Conclusion

Mental Health (MH) has undergone substantial growth over the last decade, influencing various facets of human life. Within the realm of student life, medical performance stands out as a critical indicator. This study explores the correlation between MH and the medical performance of MBBS students in India. Conducted empirically, the research is based on a sample of 1060 MBBS students, and data on MH responses were gathered using Warwick-Edinburgh's MH Tool ($\alpha = 0.887$).

It is essential to consider this study and its findings as a preliminary step toward more comprehensive research initiatives. The current investigation underscores a significant association between MH and medical performance. MH emerges as a crucial factor for success in any professional role. Given that students navigate the complexities of emotions from faculty, non-teaching staff, peers, and family, cultivating mental management skills becomes imperative to handle situations that contribute to a healthier, more productive, and fulfilling life.

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