

## Relationship between Mental Health and Teaching Efficacy of Indian School Teachers: A Moderated Mediation Model of Autonomy and Emotional Intelligence

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### Abstract

This study aimed to investigate the complex psychological mechanism involved in the relationship between school teachers' mental health and teaching efficacy with the mediating role of emotional intelligence and the moderation of teacher autonomy. It used a descriptive survey method inside an Ex Post Facto study design randomly selecting 500 (female=229) Indian elementary school teachers teaching in grades one to eight. A structural equation model was used to examine the covert relationships among the constructs. The results indicated that mental health was positively associated with teaching efficacy, discretely and via emotional intelligence. Teachers' autonomy partially mediated the indirect effect such that participants with high teacher autonomy demonstrated a stronger indirect link than those experiencing low autonomy. The findings contribute to a deeper understanding of the synergy between mental health and teaching efficacy with the policy implication for better mental health management for school teachers by paying specific attention to these vital factors like teacher autonomy and emotional intelligence at a time when 15 per cent of Indian school teachers are found suffering from mental health issues and state of teacher autonomy among these schools is lamentably low.

**Keywords:** Mental health, Teaching efficacy, Teacher Autonomy, Emotional intelligence, India.

### Introduction

A teacher is a vital agent in education, imparting knowledge, setting agendas, choosing materials, serving as subject specialists, assessing learning outcomes, and helping students overcome obstacles. Improving teaching quality is the core agenda of any aspiring nation (Ruiz-Alfonso et al., 2021). In the post-pandemic era, teaching has become a high-stress profession globally, leading to job quitting among teachers even in the most celebrated school systems like Singapore, China, Norway, England, and Australia, owing to this rising stress level (Glazzard, 2018).

UNESCO highlights teachers' role in societal strength, emphasizing personalized, joyful, and encouraging environments in schools (UNESCO, 2017, 2023). There is a positive correlation between teachers' mental health and quality education since stress negatively affects teachers' performance (Whitaker, Dearth-Wesley, & Gooze, 2015). Teachers who experience stress are more likely to become emotionally exhausted, have cynical attitudes, and be unhappy (Skaalvik & Skaalvik, 2011). Over the past few years, there has been an increase in research interest in the topic of teacher well-being in the context of their job. It has been recognised as a critical factor in determining student well-being, academic success, and teachers' commitment to their profession (Arslan & Yildirim, 2021; Chang & Cherng, 2017; Harding et al., 2019; He et al., 2023; Yildirim & Green, 2023).

A recent survey in the Indian state of Rajasthan finds that 80% of teachers are victims of poor mental health (Kaur et al., 2023). The issue is a global cause of concern now. In the UK nearly 74 per cent of teachers are suffering from stress and depression (Thompson, 2023). Other renowned school systems like Singapore, Korea, and Japan are also struggling with the issue (Mukhopadhyay & Kundu, 2023). The goal of this study was to find out a solution.

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India's Right to Education Act (2009) mandates teachers to provide quality education to its 260 million students (UDISE+ 2021-22). Teachers are now responsible for teaching, developing good habits, and completing non-teaching assignments. The demands of extended school days, six-day work weeks, and high societal and parental expectations have increased stress on teachers (Kundu, 2018). The increasing competition and parental expectations have led to a growing concern for a compromise between teacher satisfaction and quality education mandates (Bansal, 2022). When teachers are constrained by rigid curriculum guidelines that do not align with students' needs and societal demands, they may feel restricted in delivering engaging and meaningful lessons. This often leads to a lack of autonomy and creativity in the classroom (Tewari, 2018). Resultant stress and mental health issues among school teachers are on the rise. UNESCO (2017) emphasises teacher autonomy as a way out of dynamic learning environments. Aiming to increase it, India's National Education Policy 2020 has put clear mandates (NPE, 2020).

The COVID-19 pandemic in India has aggravated the issue and negatively impacted school teachers' psychological health due to uncertainty, workload, job dissatisfaction, health issues, and multiple roles, according to research (Chaudhry & Chhajer, 2023; Kim et al., 2022; Maggio et al., 2022). For many Indian school teachers, the abrupt introduction of distance learning presented challenges, including the need to adapt new technologies, revise pedagogy, and change the style of evaluation to deliver online education effectively (Bhattacharya & Tandon, 2023; Dayal, 2023). The transition problem for school teachers has become more acute due to societal expectations and the historic National Education Policy 2020, which envisions a major revamp of the educational system (Kundu, Bej, & Mondal, 2023).

Researchers found different factors responsible for mental health issues including biological, sociocultural, and psychological (Seefeldt, 2014). A substantial body of research found a weak to moderately positive association between teachers' mental health and their teaching efficacy (Skaalvik & Skaalvik, 2017; Rabani, Towhidi, & Rahmati, 2011). According to Bandura, those who have low self-efficacy often fixate on their flaws and exaggerate potential issues and risks (Skaalvik & Skaalvik, 2016). The present study explores the intricacy of this relationship with the mediation of emotional intelligence and the moderation of teacher autonomy. It assumed the importance of these intermediary factors based on a strong theoretical ground discussed in the next section.

## **Literature Review**

### **Mental Health Matters**

Mental health is a state of well-being that allows individuals to thrive and be productive in daily life, including relationships, work, and community (WHO, 2022). It involves a holistic approach that considers social, psychological, environmental, poverty, education, and physical health (Keyes, 2005; Jovanovic, 2015). In today's stressful world, one in every four persons is affected by various mental health issues, ranging from uncommon conditions like schizophrenia to everyday issues like depression and anxiety (MHPSS worldwide: facts and figures, 2023; Yildirim & Maltby, 2022).

Teaching is a highly stressed profession and according to a recent survey, teachers are more than twice as likely to be stressed as other working adults (Steiner, 2022). Therefore, securing sound mental health is crucial for teachers to contribute to societal transformation and train progressive citizens (Peng, Wu, & Guo, 2022). Overall, teachers must create a supportive learning environment, effectively engage with students, and sustain their well-being throughout their careers. Studies identified many factors affecting teachers' mental health including education level, job stress, family background, income, and leadership style (Alavi & Benadeki, 2005). Conversely, poor mental health is linked to ineffective teaching (Klassen & Chiu, 2011; Peng, Wu, & Guo, 2022; Kaihoi et al., 2022). The present study will contribute to the existing literature.

### **Mental Health Affects Teaching Efficacy**

Teaching efficacy is a psychological concept that relates to teachers' perceptions of their ability to influence students' behaviour and academic achievement (Pajares & Urdan, 2006). Student learning is greatly impacted by teaching

efficacy, which is heavily influenced by both subjective and professional practices (Gibson & Dembo, 1984; Tschannen-Moran et al., 1998; Kundu, Bej, & Dey, 2021; Woodcock & Jones, 2020; Zakariya, 2020). According to earlier research, teachers' mental health has a major impact on how effectively they teach (Kaihoi et al., 2022; Peng, Wu, & Guo, 2022). In their German-based study, Sophia von et al. (2021) discovered that because of its many consequences, self-efficacy appears to be a desirable goal of preventive interventions for teachers and should be encouraged. Mental health can significantly affect teaching efficacy (von Muenchhausen et al., 2021). Teaching is a demanding profession that requires not only intellectual engagement but also emotional and psychological resilience (Kundu, 2022). Overall, addressing mental health concerns among teachers is essential for promoting teaching efficacy and ensuring positive outcomes for both educators and students.

### **Role of Emotional Intelligence**

Emotional intelligence (EI) is a cognitive capacity that recognises and differentiates emotional signals and information (Wang, 2022). It determines the ability to recognize, control, and express one's emotions and those of others (Salovey & Mayer, 1990). EI develops through four levels: emotional perception, emotional absorption, emotional understanding, and emotional management (Maamari & Majdalani, 2019). Low EI levels can lead to self-destructive behaviours such as substance abuse, strained friendships, and depressive symptoms (Davis & Humphrey, 2014; Curci et al. 2014; Davis & Nichols, 2016; Yıldırım & Arslan, 2023).

EI and self-efficacy play an important role in achieving academic success and emotional intelligence can explain self-efficacy (Gharetepeh et al., 2015). Teachers' EI and efficacy mingled and interacted with each other such that teachers who have higher control of emotions tend to develop stronger efficacy (Koçoğlu, 2011; Sanchez-Alvarez et al., 2015) and better relationships with students (Moafian & Ghanizadeh, 2009). The positive relationship between teachers' EI (especially the intrapersonal dimension of EI) and self-efficacy has been found across a range of samples (Green et al., 2024; Yabing & Yangyu, 2022) including pre-service and in-service teachers (Chan, 2008), math, physics, and language teachers (Rastegar & Memarpour, 2009; Mouton et al., 2013; Alrajhi et al., 2017; Miao et al., 2017). A high level of EI is crucial for teachers as it may improve their mental health, subjective well-being, life satisfaction, and psychological well-being (Martins et al., 2010; Costa & Faria, 2015; Moeller et al., 2020). It became stronger with autonomy to support it (Granero-Gallegos et al., 2023). Thus, by cultivating EI, teachers can create a positive and supportive learning environment that promotes the academic, social, and emotional growth of all students.

### **Role of Teacher Autonomy**

Autonomy refers to the ability to make free will decisions independently (Bordages, 1989). Bandura (1989) defined autonomy as the ability of an individual to function without the interference of other people or their environment. High job autonomy can mitigate occupational stress as individuals with more resources for stress management are more likely to cope with challenging work environments (Naghieh et al., 2015; Sohn et al. 2016; Dreison et al. 2018). Self-determination theory (Deci & Ryan, 2000) asserts among three human psychological needs (autonomy, relatedness, and competence), autonomy has the greatest impact on individual performance and expressiveness.

Teachers' autonomy allows them to enhance their teaching skills and choose the best educational strategy for each student (Alivernini et al., 2019). Studies found it vital for several reasons like tailoring instructions, promoting creativity, empowering decision-making, and building trust and collaboration among teachers and students (Marshik et al., 2017; Kaplan, 2018; Ekatushabe, 2021). Autonomy in teachers leads to increased feelings of understanding, respect, and encouragement (Alivernini, 2019), reducing conflict and promoting happiness, satisfaction, and love, which is believed to significantly impact their mental health (Peng, Wu, & Guo, 2022).

Deci and Ryan (1991) pointed out that when autonomy is high, individuals are more willing to integrate psychological resources to cope with stress, experience a higher level of positive emotions, and then increase their mental health. Autonomy in general is positively associated with self-efficacy in different occupational contexts (Sousa et al., 2012; Wan et al., 2020; Marques de Macedo et al., 2020; Lange & Kayser, 2022) and EI (Granero-

Gallegos et al., 2023). Overall, teacher autonomy is significant because it promotes effective teaching practices having proven links with their mental health, EI, and teaching efficacy.

### Aims and Hypotheses of the Study

The present research aimed to examine the underlying psychological mechanisms of the effect of school teachers' mental health on their teaching efficacy by investigating the mediation role of EI and the moderation role of teachers' sense of autonomy. Our objective was to suggest a mental health management plan for school teachers since mental health issues among teachers are a growing concern in India and across the globe. Additionally, it adds to the corpus of reputable research that explores the connections between these key components. This study proposes the following three assumptions to examine the Structural Equation Model (Fig. 1) based on the existing knowledge as demonstrated in the literature survey above.

- H1: Teachers' mental health has a significant predictive effect on their teaching efficacy.
- H2: EI significantly mediates the relationship between mental health and teaching efficacy.
- H3: Teacher autonomy significantly moderates the said relationship.

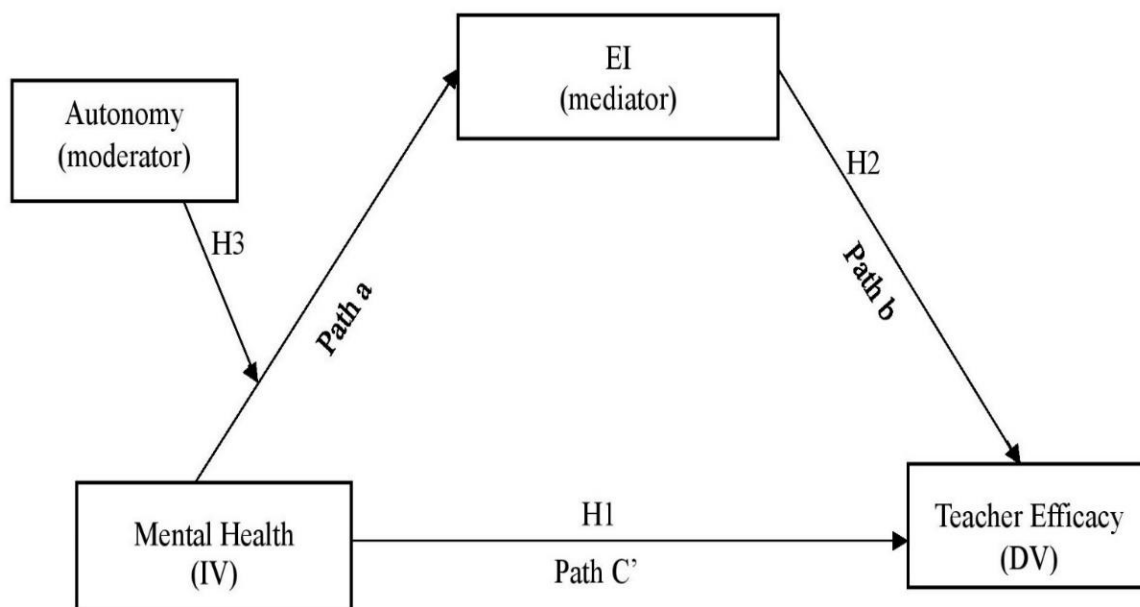


Figure 1. Proposed path for Hayes Process Macro- Model 4

### Method

In this study, the researcher used an Ex Post Facto design with a quantitative approach. Ex post facto research is a method used by researchers to “identify casual relationships without manipulation or treatment, typically without pre-testing or variable control” (Kundu, 2022, p.90). The primary independent variable (IV) of this study was teachers' mental health, the primary dependent variable (DV) was their perception of teaching efficacy, the mediator was EI, and the moderator was teacher autonomy. The specifics of the research design, sample, data collection instruments, and statistical processes are described here.

### Participants

Following a stratified random sample approach, there were initially 679 survey participants made up of 351 male and 328 female teachers (teaching in grades 1-8) chosen from 100 government-run elementary schools in India. To obtain a comprehensive image, a stratified random sampling technique was utilized representing different cultures, customs, and geographic areas. By research ethics, the actual names of the schools and study participants are not

disclosed. Of the 679 respondents, only 500 responses were possible to collect and were in order. These were ultimately chosen for decoding and higher-level analysis with a response rate of 73.6 per cent. Table 1 includes participants' demographic information for the interested readers.

Table 1. Demographic details of participants

Variables	Frequency	Percentage
<i>Gender</i>		
Male	271	54.2
Female	229	45.8
<i>Age (years)</i>		
20-29	98	19.6
30-39	209	41.8
40-49	121	24.2
50 above	72	14.4
<i>Marital status</i>		
Married	270	54
Unmarried	230	46
<i>Teaching Experience (years)</i>		
0-5	114	22.8
5-10	133	26.6
11-20	199	39.8
21 above	54	10.8
<i>Grades taught</i>		
Elementary (1-8 <sup>th</sup> grades)	500	100
<i>School location</i>		
Rural	319	63.8
Urban	181	36.2

## Measures

**Mental Health Inventory.** In this study, data on mental health were gathered using the 56-item Mental Health Inventory (MHI), developed by Jagdish and Srivastav (1983), which covers the six dimensions of good mental health: Positive self-evaluation (PSE), Perception of reality (PR), Integration of personality (IP), Autonomy (AUT), Group-oriented attitudes (GOA), and Environment mastery (EM). A 4-point Likert scale with the options "Always" to "Never" is used to score this self-report questionnaire, with higher scores indicating better mental health. Using guidance from experts, the validity and reliability of the scale were determined based on a pilot survey. Pilot test ( $n = 100$ ) assessed the validity and reliability of the scale, Confirmatory Factor Analysis (CFA) indicated a good model fit;  $\chi^2/df = 4.982$ ; RMSEA = 0.051; CFI = 0.899; TLI = 0.991; IFI = 0.970; RFI = 0.937; SRMR = 0.0292, standardized factor load ranges from 0.41 to 0.74, Cronbach's alpha indicated a high internal consistency of the Scale (=0.923), KMO = 0.918. Factor wise Cronbach's alpha was 0.82, 0.86, 0.79, 0.88, 0.84 and 0.91 respectively. This indicates that the reliability and validity of the scale are good.

**Wong and Law's Emotional Intelligence Scale.** The Wong and Law's (2002) Emotional Intelligence Scale (WLEIS) was used to measure the EI of the teachers. The 16-item self-report EI measure has four subscales: Self-emotion appraisal (SEA; four items) ("I have a good understanding of my own emotions"), Others' emotion appraisal (OEA; four items) ("I am a good observer of others' emotions"), Use of emotion (UOE; four items) ("always tell myself I'm a competent person"), and Regulation of emotion (ROE; four items) ("I am quite capable of controlling my own emotions"). A 7-point Likert-type scale was used to record the participants' responses, with 1 denoting "totally disagree" and 7 denoting "totally agree." The pilot test ( $n = 100$ ) assessed the validity and reliability of the

scale, Confirmatory Factor Analysis (CFA) indicated a good model fit,  $\chi^2/df = 3.161$ ; RMSEA = 0.031; CFI = 0.977; TLI = 0.971; IFI = 0.981; RFI = 0.9710; SRMR = 0.111. The factor load range was 0.48 to 0.78, Cronbach's alpha indicated a high internal consistency of the Scale (=0.813), KMO = 0.881. Factor wise Cronbach's alpha was 0.88, 0.81, 0.82, and 0.91 respectively. This indicates that the reliability and validity of the scale are good.

**Teacher Autonomy Scale.** The modified version of the Teacher Autonomy Scale was developed by Ulas and Aksu (2015) and was used after necessary contextualization. It has 20 items to assess the autonomy of teachers in the past. Three areas of autonomy for teachers were addressed: (1) Autonomy in instructional planning and implementation, (2) Autonomy in professional development, and (3) Autonomy in determining the framework of the curriculum. The degree to which each statement addressing teacher autonomy was agreed with was indicated on a 5-point Likert scale (1 being strongly disagreed with and 5 being strongly agreed with). The respondents' level of teacher autonomy increased with higher scores. Pilot test (n = 100) assessed the validity and reliability of the scale, Confirmatory Factor Analysis (CFA) indicated a good model Fit,  $\chi^2/df = 4.818$ ; RMSEA = 0.041; CFI = 0.981; TLI = 0.971; IFI = 0.982; RFI = 0.966; SRMR = 0.0314, with factor load ranging from 0.39 to 0.79, Cronbach's alpha indicated a high internal consistency of the Scale (=0.916), KMO = 0.925. This indicates that the reliability and validity of the scale are good. The Cronbach's Alpha coefficients for the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> factors of the instrument were calculated as 0.91, 0.80, and 0.86 respectively, and the Cronbach's Alpha coefficient for the whole scale was calculated as 0.89.

**Teachers' Sense of Efficacy Scale.** The second research tool used to gauge teachers' sense of efficacy was the long form of the Teachers' Sense of Efficacy Scale (TSES), which was created by Tschannen-Moran and Woolfolk Hoy (2001). A 24-item questionnaire was utilized to gauge the teaching efficacy in three domains: Efficacy in student involvement, Efficacy in instructional practices, and Efficacy in classroom management. An increase in score indicates more efficacious teaching. This self-report measure is assessed on a 9-point Likert Scale, with "nothing" being the lowest score and "a great deal" being the highest. Pilot test (n = 100) assessed the validity and reliability of the scale, Confirmatory Factor Analysis (CFA) indicated a good model Fit,  $\chi^2/df = 4.878$ ; RMSEA = 0.046; CFI = 0.988; TLI = 0.892; IFI = 0.993; RFI = 0.923; SRMR = 0.0314, with factor load ranging from 0.35 to 0.76, Cronbach's alpha indicated a high internal consistency of the Scale (=0.916), KMO = 0.961. Factor wise Cronbach's alpha was 0.81, 0.87, and 0.88 respectively. This indicates that the reliability and validity of the scale are good.

## Data Collection

The chosen schools' headmasters were contacted to request permission for data collection. Following the instructions in the tool's manual, data were collected by giving the tools to the study subjects respecting all ethical norms. Each school was visited for two to three days to complete the whole process of collecting data. To determine the efficacy of the tools, a pilot version of the questionnaires was initially distributed to 100 respondents. It was easier to confirm the instruments' effectiveness and validity by testing their consistency. Another method utilized to ensure the accuracy of the data collected was member checking.

## Data Analysis

Collected data were analysed mainly using inferential statistics as per research aims, although descriptive data was the basis. Multivariate correlations across all variables were computed. For data analysis, Statistical Package for the Social Sciences (SPSS-20.0) software was used. PROCESS Macro Model 4 was used to examine the simple mediation (Hayes, 2018). PROCESS Macro Model 7 was used for moderated mediation analysis (Hayes, 2018), including the main relationships and the moderation effect of teacher's autonomy on the main and the mediated relationships. Under Model 7, the full regression was divided into two sub-models (Figure 2). Model 1 entails regressing the EI (Mediator) onto Mental Health (independent variable), Autonomy (moderator), and interaction term (Mental Health X Autonomy). The regression slope for the interaction term reflects the moderating effect of Autonomy on the mental health-EI relationship (Path a).

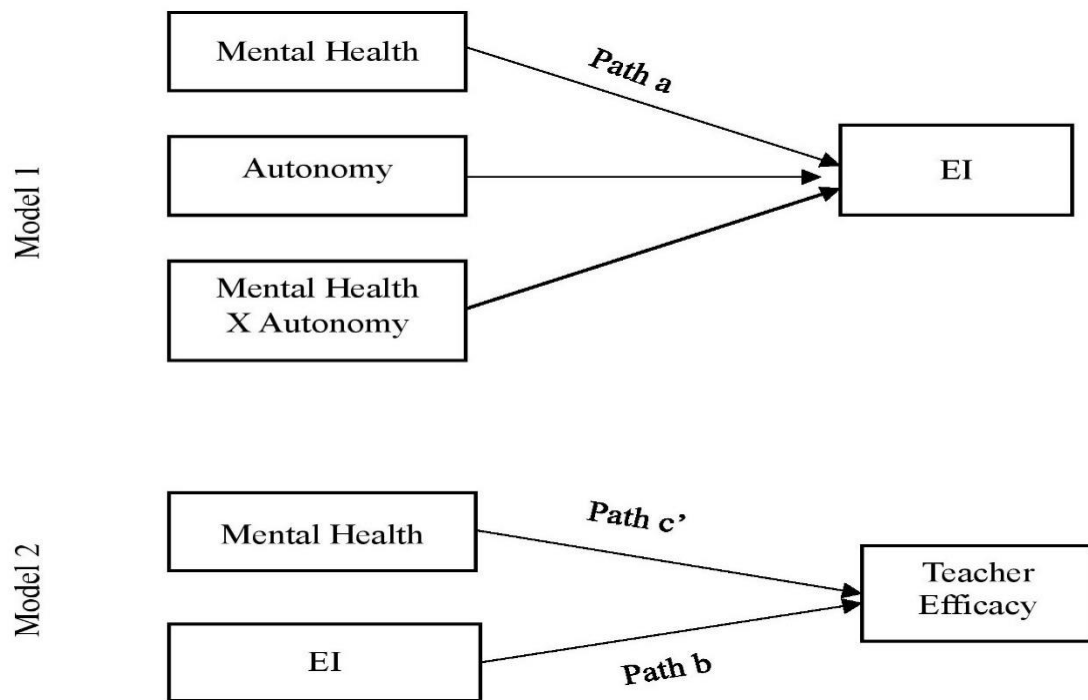


Figure 2. Proposed path for Hayes Process Macro- Model 7

‘Direct effect’ ( $c'$ ) is simply a direct relationship (Model 2) between an independent variable and a dependent variable in the presence of a Mediator (Figure 2). ‘Indirect effect’ is the relationship that flows from an independent variable to a mediator and then to a dependent variable (Path  $a \times$  Path  $b$ ). The term ‘total effect’ is the combined influence of the direct effect between two constructs and the indirect effect following through the mediator [ $c = (c' + a \times b)$ ].

## Results

### Common Method Bias

The results of Harman’s single-factor test were used to test the common method bias effect (Kock, 2021). The results show that the first principal component explained 22.13% of the total variance, which was less than 40% (Podsakoff & Organ, 1986), indicating that common method bias was not a serious problem in this study.

Table 2. Means, standard deviations, and correlations of study variables

Variables	M	Mdn	SD	1	2	3	4
1. Mental health	196.53	140	5.84				
2. Emotional Intelligence	55.21	64	4.32	0.27*	-		
3. Teacher’s Autonomy	31.41	60	5.21	0.25**	0.09*	-	
4. Teaching Efficacy	132.94	120	7.69	0.56*	0.31*	0.28*	-

M: means; Mdn: Median; SD: standards deviation.

\*\* $p < 0.01$ , \* $p < 0.05$

### Descriptive Statistics and Correlations Between Variables

The descriptive statistics shown in Table 2 indicate that the average mental health of Indian elementary school teachers is higher than the medium level (Median). Additionally, their efficacy as a teacher is above average. However, their autonomy and EI seem below average. Teachers’ mental health is positively

correlated with their sense of teaching efficacy, EI, and autonomy. A moderately strong correlation is found between teachers' mental health and teaching efficacy (0.56). EI has a positive correlation with both teaching efficacy and autonomy, albeit the relationship with autonomy is determined to be too weak. Teacher autonomy is positively correlated with efficacy.

A summary of the multiple regression analysis between mental health as the main independent variable and all three dimensions of teaching efficacy as the main dependent variable is presented in Table 3. It indicates that there is a significant individual prediction of teachers' mental health on their teaching efficacy ( $\beta = .57$ ,  $t = 6.91$ ,  $p < .05$ ) and in all three dimensions of it, supporting H1. According to the results, there is a statistically significant positive prediction between teachers' mental health and their feeling of teaching efficacy with  $R^2$  (the coefficient of determination) 0.615 which is a good fit. The two variables have a moderate positive association. ( $R=.56$ )

Table 3. Multiple regression between teachers' mental health and teaching efficacy

Teaching efficacy (DV)	Mental health (IV)				
Dimensions	R	R <sup>2</sup>	F (3, 499)	$\beta$	t
Student engagement	.571	.546	19.12	.49	6.58**
Instructional strategies	.476	.522	22.54	.41	6.32*
Classroom management	.435	.642	28.65	.52	7.01**
Overall teaching efficacy	.558	.615	29.67	.57	6.91*

Total TSES score (M= 132.94, SD= 7.96)

Total MHI Score (M=196.53, SD=5.84)

\* $p < .05$ , \*\* $p < .01$

### Testing for Mediation Effect

The study assessed the mediation role of EI on the relationship between school teachers' mental health and self-efficacy. PROCESS Macro Model 4 used for mediation analysis was calculated at 94% confidence intervals (CI) based on a 5000-bootstrap resampling. The results revealed a significant indirect effect of EI on Teaching efficacy ( $\beta=0.293$ ,  $t= 5.458$ ,  $p < 0.001$ ), supporting the H2 that EI significantly mediates the relationship between mental health and teaching efficacy. Furthermore, the direct effect of mental health on teaching efficacy in the presence of the EI (mediator) was also found significant ( $\beta=0.214$ ,  $p < 0.001$ ). The mediation was partial, meaning EI partially mediated the relationship between mental health and teaching efficacy since the effect follows directly as well or there might be some other variables which justify a moderation analysis. The mediation analysis summary is shown in Table 4.

Table 4. Mediation analysis summary

Relationship	Total effect	Direct effect	Indirect effect	Confidence level		t-statistics	Conclusion
	$\beta$	$\beta$	$\beta$	LB	UB		
Mental health>EI>Teaching efficacy	0.507*	0.293*	0.214*	0.18	0.38	12.31	Partial Mediation

\* $p < 0.001$ , LB=Lower bound, UB=Upper bound,  $\beta$  = unstandardized coefficient



### Testing for the Moderated Mediation Effect

The PROCESS Model 7 reveals that the effect of mental health and autonomy on teachers' EI was found to be positive and significant ( $\beta = 0.32$ ,  $t = 1.96$ ,  $p < 0.01$ ). Furthermore, we plotted these cross-product terms, developing separate equations that used one standard deviation above and below the means of teacher autonomy. The moderation graph in Figure 3 shows that a teacher's autonomy strengthens the relationship between mental health and EI. The indirect effect of mental health on teaching efficacy through EI weakened at a low level of teacher's autonomy whereas the slope was relatively shallow for those with higher teacher's autonomy. It indicates that a teacher's autonomy significantly moderates the indirect effect of mental health on teaching efficacy via EI. Table 5 presents the results.

Table 5. Testing the moderation mediation effects

Independent Variables	Model 1 (EI)			Model 2 (Efficacy)		
	$\beta$	SE	t	$\beta$	SE	t
Intercept	0.42	0.37	1.23*	0.12	0.31	0.79*
Mental health	0.51	0.56	2.19*	0.49	0.51	2.34*
Autonomy	0.21	0.44	1.64*	0.31	0.57	2.66*
Mental health $\times$ Autonomy	0.32	.64	1.96*	0.16	0.66	1.76*
EI	-	-	-	0.42	0.70	2.51*
R <sup>2</sup>	0.52			0.41		
F	231.65*			112.64*		

\* $p < 0.01$ ,  $\beta$  = unstandardized coefficient, SE= standard error.

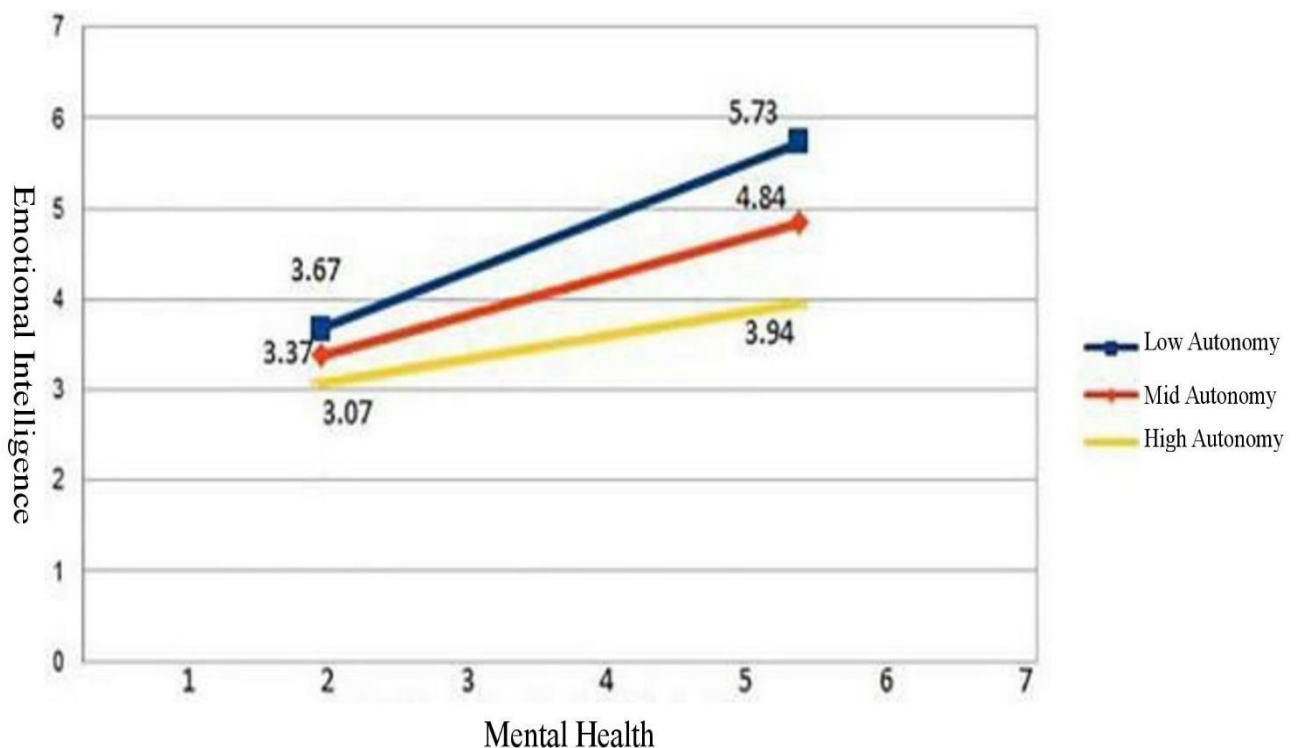


Figure 3. Moderation graph on teacher autonomy influencing mental health and EI relationship

Based on the moderated mediation analysis the proposed Structural Equation Model (SEM) stands out (Figure 4) that the direct effect of mental health on teaching efficacy ( $\beta = .29$ ) is significant, the indirect

effect ( $\beta=.21$ ) is also significant, and the total effect is .5. The moderating effect of autonomy in the said relationship is also significant ( $\beta=.21$ ). Notable is also the fact that the total effect in the presence of autonomy and emotional intelligence ( $\beta=-.5$ ) and the regression coefficient ( $\beta=.57$ ) differ, hinting at presence of other factors at work.

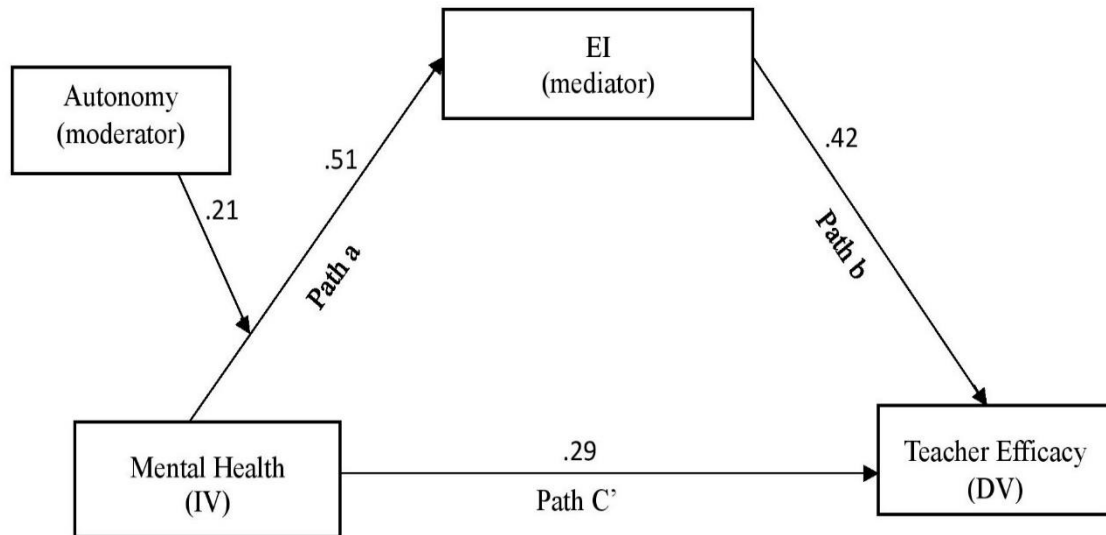


Figure 4. SEM of the Hypothesized Model with Standardized Coefficients

## Discussion

The contextual findings have unique contributions. It shows that Indian elementary school teachers possess overall good mental health (refer to Table 1), with the majority of (85%) teachers having medium to high MHI scores, which is a good indication but a lean percentage (15%) showed low score meaning low mental health that is hard to ignore. This finding is consistent with the research results of past studies (Kaur, 2008; Gorsy et al., 2015; Dagar & Mathur, 2016; Kaur, 2017; Ghosh, Adhikari & Das, 2020) which pointed out towards a decent percentage of Indian school teachers have been suffering from different mental health problems. The reasons or types were not investigated here, but they can be attributed to the structural aspects of the school system, burgeoning expectations of society (Kundu & Bej, 2020), transformational teaching (Dayal, 2023), massive changes in teachers' roles in classrooms and teaching methods (Chaudhry & Chhajer, 2023), and regularly increasing assessment pressure (Bhattacharya & Tandon, 2023), especially in the post-National Education Policy 2020 implemented era.

These teachers exhibited a good overall teaching efficacy which supports past studies (Menon & Sobha, 2017; Swarnalatha, 2019; Kundu & Bej, 2021; Kundu, Bej, & Dey, 2021; Kundu, Dey, & Bej, 2022) that Indian school teachers' overall teaching efficacy is medium to high. There are variations observed among different demographic factors such as gender, experience, and location that corroborate our past studies (Kundu & Bej, 2021; Kundu, Bej, & Dey, 2021; Kundu, Dey, & Bej, 2022; Kundu, 2022). While some teachers may feel confident and effective in their teaching, others may struggle due to challenges, as evolved in different studies like large class sizes, limited resources, and lack of professional development opportunities (Kundu & Bej, 2021; Kundu, Bej, & Dey, 2021). They need suitable support to bring their teaching level to the optimum, especially among female teachers, urban school teachers, and younger teachers where efficacy levels are found comparatively lower.

The relationship between teachers' mental health and their teaching efficacy is an important area of research within the field of education. We found that there is a moderately positive correlation between the two that supports earlier findings (Klassen & Chiu, 2011; Skaalvik & Skaalvik, 2016; Kaihoi et al., 2022). Further, the regression analysis discovered that mental health has a significantly positive prediction on teaching efficacy ( $\beta=.57$ ) which statistically

explained why the good mental health of the teachers positively affects their teaching efficacy, supporting our first hypothesis. From the regression outputs, it is evident that for every one standard unit increase in mental health, the teaching efficacy will be increased by 0.57 standard units. On the other direction it supports the theoretical proposition that in the specific context, bad mental health (with characteristics like depressive symptoms, disappointment, and pessimistic perceptions) negates self-worth and ability (Vaezi & Fallah, 2011; Qiu-yan et al., 2018) and oppose a sense of efficacy among school teachers (Wang et al., 2015).

Teachers' emotional intelligence significantly mediated the link between mental health and teaching efficacy, supporting our second hypothesis that EI can significantly boost teaching efficacy. Specifically, mental health positively predicted EI, which in turn positively predicted teaching efficacy among school teachers. Teachers with higher EI had a greater ability to perform good teaching. This finding supports the previous claims that the relationship between EI and mental health has been empirically shown to be central to one's overall well-being and is often a deciding factor in their ability to experience life deeply and beneficially (Mayer et al., 2004; Daze, 2022). Teachers who cultivate good EI are better equipped to create a supportive and engaging learning environment, build positive relationships with students, and promote academic success (Costa & Faria, 2015; Moeller et al., 2020). Therefore, investing in the development of EI among teachers can have significant benefits for both teachers and students alike. However, when it comes to this criterion, Indian elementary school teachers do poorly, and their EI is below average, which has a negative impact on their ability to teach.

Concerning our third hypothesis, the current study found that teacher autonomy significantly moderated the indirect effect of EI on the relationship between mental health and teaching efficacy. Specifically, autonomy has an overall positive impact on their mental health, EI, and efficacy. When autonomy is high, individuals believe that they can determine their behavior, which leads to the improvement of their EI, which in turn enhances their teaching efficacy (Alivernini, 2019). It supports the previous findings that autonomy is the necessary precondition for effective teaching (Sousa et al., 2012; Peng, Wu, & Guo, 2022; Granero-Gallegos et al., 2023; UNESCO, 2017). By providing teachers with the autonomy to make meaningful decisions about their teaching, schools can empower them to thrive and excel in their roles, ultimately benefiting student learning outcomes.

Unfortunately, the state of autonomy among Indian elementary school teachers, as appeared in this investigation, is lamentably low. We cannot expect our students to be independent, creative, and autonomous without providing that autonomy to our teachers. Outcomes support the issue of stifled teachers crowded in Indian schools which has been raised time and again in several media and past studies which is only adding stress to those teachers who are already experiencing issues with their mental health (UNESCO, 2021; NEP, 2020). The issue is a serious challenge to the Indian schools. To address the issue schools, require systemic changes that promote a culture of trust, collaboration, shared responsibility, and professional empowerment. This, in turn, may lead to a positive school climate and teachers' well-being (Sipahioglu et al., 2023).

### **Implications and Limitations**

The complex relationship matrix evolved in the SEM (Figure 4) will serve as a powerful tool for researchers and practitioners to examine the complex relationships between teachers' mental health and teaching efficacy in the presence of their emotional intelligence and autonomy. It validates the efficiency of existing theories and the three hypotheses upheld in this study. Practical implications of this theoretical scaffolding can positively impact teachers' confidence, resilience, and teaching effectiveness. Strategic aims cover promoting teacher self-care, stress management, and professional development for fostering a positive teaching environment and optimizing student learning outcomes. The study suggests that addressing EI skills among teachers and allowing more autonomy could improve their efficacy by addressing their mental health issues, particularly for those 15 per cent of teachers with poor mental health. However, it also warns of potential downward filtration of inefficacy. Future research should focus on developing suitable skill sets and behaviours to this end. The present study includes many limitations to consider. First, because of the nature of cross-sectional research, the data do not permit causal inference (Zhao & Qin, 2021). Therefore, to validate the research findings, more trials and long-term longitudinal studies are required. Second, it is impossible to account for every confounding variable in a quasi-experimental study, which could have

an impact on the findings. Third, only among elementary school teachers has the correlation been observed between mental health and efficacy. To further confirm this relationship, more research may be done among persons who work in other professions. Fourth, self-reported questionnaires were used in the study, which had a small sample size of five hundred and a tendency for subjective biases. Fifth, further research should evaluate the various data collection techniques (such as reports from others, and interviewing techniques), to better understand the said relationship matrix.

### Conclusion

The study concludes that teachers' mental health is a significant predictor of teaching efficacy. This link is significantly and partially mediated by their emotional intelligence. Here, teachers' autonomy plays an important role by moderating the whole relationship between mental health and teaching efficacy in both direct and indirect channels via EI. The findings have a specific contribution to Indian school teachers' personal and professional development by discovering a few vital factors significantly contributing to the policy-making for the mental health management of teachers in a time when 15 per cent of them are suffering from mental health issues and a large portion is stifling under bureaucratic decision-making, pressure to cover the syllabus, poor professional development opportunities, and inability to meet the cultural and societal expectations.

### Compliance with Ethical Standards

#### Ethical Standards

There were no human subjects involved in any form of intervention in this survey-style investigation. Nevertheless, the authors asked Bankura University's Ethics Review Board to supervise ethical issues, and the university kindly obliged. Informed consent was obtained from all individual participants included in the study.

#### Author Contributions

The research was conducted out of the authors' interest. Two authors have developed the concept for this manuscript, carried out the literature search, critically analyzed the data, wrote the manuscript, and proofread it. Every author took part in each process.

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#### Declaration of Conflicting Interests

On behalf of all authors, the corresponding author states that there is no conflict of interest concerning the research, authorship, and/or publication of this article.

#### Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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