

Interactional Effect of Social Intelligence and Emotional Intelligence on Mental Health Status of Secondary School Students

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Abstract:

The study aims to find out the main effect and interaction effect of social intelligence and emotional intelligence on the mental health status of secondary school students of Kerala. Data were collected from a stratified random sample of 628 secondary school students (289 boys and 339 girls) in the age range 13-16, studying in grades VII to X, with the help of standardized psychometric instruments. The consolidated were subjected to two way ANOVA with the help of SPSS to test the hypotheses. It was revealed from the analysis that social intelligence and emotional intelligence have significant main effect and interaction effect on mental health status of secondary school students. Such significant effects exist not only in the total sample but also in sub-samples based on gender. Though there exists a significant main effect of social intelligence and emotional intelligence on the mental health of students from joint-, and nuclear families, interactive effect of the independent variables upon the dependent variable was found limited to adolescents from nuclear families. Social intelligence and emotional intelligence have significant main effect and interaction effect on the mental health of students from all socio-economic strata and all levels of achievement.

Keywords: Mental health status, social intelligence, emotional intelligence, main effect and interaction effect

I. INTRODUCTION

Mental health is an important aspect of an individual's total health status and social functioning. Poor mental health can have significant adverse impact on the total development of children and adolescents and is associated with many undesirable outcomes such as higher substance abuse, academic failure, teenage pregnancy, cyber dependency and delinquent behaviours [1-4]. Research has now shown that half of all mental illness emerges in late childhood and early adolescence [5]. Cultivating social skills, problem-solving abilities and self-confidence in children and adolescents can help prevent mental health problems such as anxiety, depression, risk taking behaviour and the like [6]. Acquisition of the ability to understand and manage one's own as well as other's emotions are crucial in maintaining good mental health [1]. Added to this, the individual's capacity to effectively navigate and negotiate complex social relationships has also been found decisive in maintaining psychological well-being of adolescents [7]. A review of the literature convinced the investigators that there is a relative dearth of information about how these ability factors contribute to adolescents' positive mental health. It is hoped that the findings of the present study will be contributory in this direction.

II. OBJECTIVES

The major objective of the study is to find out the main effect and interaction effect of emotional intelligence and social intelligence on mental health status of secondary school students for the total sample and subgroups based on gender, type of family, socio-economic status, and levels of achievement.

III. HYPOTHESES

The following null hypotheses were tested for the study:

1. There is no significant main effect and interaction effect of emotional intelligence (EI) and social intelligence (SI) on mental health status (MHS) of secondary school students.
2. There is no significant main effect and interaction effect of social intelligence and emotional intelligence on mental health status of secondary school students with respect to gender.
3. There is no significant main effect and interaction effect of social intelligence and emotional intelligence on mental health status of secondary school students with respect to family type.
4. There is no significant main effect and interaction effect of social intelligence and emotional intelligence on mental health status of secondary school students with respect to socio-economic status.
5. There is no significant main effect and interaction effect of social intelligence and emotional intelligence on mental health status of secondary school students with respect to achievement level.

IV. METHODOLOGY

Survey method was used for collecting the data from a stratified random sample of 628 secondary school students (boys = 289 & girls = 339) in the age range 13-16, studying in grades VII to X were utilized for the study. Two standardized psychometric instruments viz., the Emotional Intelligence Scale (EIS), and the Social Intelligence Test (SIT), developed

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by the investigators, were used to collect data. The EIS is a 40 item Liker-type 5-point scale covering five dimensions of emotional intelligence viz., self-awareness, self-regulation, self-motivation, empathy and social skills. The EIS is found to have a criterion validity of 0.71 and a test-retest (four weeks) validity of 0.78. The SIT is a 50 item instrument in three segments, measuring five component abilities of social intelligence viz., social knowledge, pro-social attitude, social skills, social understanding, and social memory. The SIT is found to have a criterion validity of 0.77, and a test-retest reliability of 0.82, after four weeks interval.

V. ANALYSIS AND INTERPRETATION

To find out the main effect and interaction effect of emotional intelligence and social intelligence on mental health status of the adolescents, two-way ANOVA (3X3 factorial designs) was carried out. It was done separately for the total sample and subgroups based on gender, family type, socio-economic status, and achievement levels. The analysis carried out to test each hypothesis formulated are presented below:

Hypothesis-1: There is no significant main effect and interaction effect of emotional intelligence and social intelligence on mental health status of secondary school students.

In order to test the tenability of Hypothesis-1, two way ANOVA was carried out to find out the main effect as well as the interaction effect of social intelligence and emotional intelligence on the mental health status of secondary school students. The result of the analysis is given in Table 1.

Table 1: Summary of Two-way ANOVA (MHS X SI X EI)

Source of Variance	Type III Sum of Squares	df	Mean Square	F	α
EI	8799.616	2	4399.808	32.571	.000
SI	8332.027	2	4166.013	30.840	.000
EI X SI	2025.539	4	506.385	3.749	.005

The result of the two-way ANOVA reveals that the F-ratio obtained for the main effects of Emotional Intelligence ($F = 32.571$; $p < 0.001$) and Social Intelligence ($F = 30.840$; $p < 0.001$), and the interaction effect of these factors ($F = 3.749$; $p < 0.01$) on mental health status are significant. Hence, mental health status of secondary school students is highly dependent on their social intelligence and emotional intelligence. The ability of the adolescents to make wholesome personal and social adjustment can be attributed to their social intelligence and emotional intelligence. Hypothesis-1 is, hence, rejected.

Hypothesis-2: There is no significant main effect and interaction effect of emotional intelligence and social intelligence on mental health status of secondary school students with respect to gender.

The results of the analysis carried out to find out the main effect as well as the interaction effect of the independent variables on the mental health status of the sub-samples of boys and girls are given in Table 2.

Table 2: Summary of Two-way ANOVA for Subgroups based on Gender

Gender	Source of Variance	Type III Sum of Squares	df	Mean Square	F	α
Boys	EI	4175.136	2	2087.568	15.088	.000
	SI	2994.546	2	1497.273	10.821	.000
	EI X SI	2010.637	3	670.212	4.844	.003
Girls	EI	4452.797	2	2226.399	20.548	.000
	SI	2443.098	2	1221.549	11.274	.000
	EI X SI	1971.041	4	492.760	4.548	.001

The F-ratios obtained for boys and girls (vide Table 2) show that the independent variables have significant main effect on the mental health status of both the gender groups. Hence, mental health of secondary school students can be considered to be dependent on their social intelligence and emotional intelligence with regard to gender. It is further revealed that there is significant interaction effect of social intelligence and emotional intelligence on the mental health status of secondary school students with respect to gender. The hypothesis formulated in this context is, therefore, rejected.

Hypothesis-3: There is no significant main effect and interaction effect of social intelligence and emotional intelligence on mental health status of secondary school students with respect to family type.

A Factorial ANOVA was conducted to compare the main effects of social intelligence and emotional intelligence and interaction effect between social intelligence and emotional intelligence on mental health status of students from joint-, and nuclear families. Social intelligence included three levels (high-, average-, and low) and emotional intelligence also included three levels (high-, average-, and low). The result of the two way ANOVA carried out to test the tenability of Hypothesis-3 is given in Table 3.

Table 3: Summary of Two-way ANOVA for Subgroups based on Family Type

Family Type	Source of Variance	Type III Sum of Squares	df	Mean Square	F	α
Joint	EI	4143.539	2	2071.770	14.390	.000
	SI	2713.913	2	1356.957	9.425	.000
	EI X SI	913.831	4	228.458	1.587	.178
Nuclear	EI	4145.498	2	2072.749	15.827	.000
	SI	4487.072	2	2243.536	17.131	.000
	EI X SI	1264.769	4	316.192	2.414	.049

The results of two way ANOVA, presented in Table 3, show that the independent factors have significant main effect on the mental health status of secondary school students from joint-, and nuclear families. While the interaction effect of social intelligence and emotional intelligence on the mental health of adolescents from nuclear family is significant ($F(2,351) = 2.414$; $p < 0.05$), that for joint family is not significant ($F = 1.587$; $p > 0.05$). The hypothesis-3 is, therefore, partly retained.

Hypothesis-4: There is no significant main effect and interaction effect of social intelligence and emotional intelligence on mental health status of secondary school students with respect to socio-economic status.

The results of the two-way analysis of variance carried out to find out the main effect and the interaction effect of social intelligence and emotional intelligence on the mental health status of the secondary school students from high-, average-, and low socio-economic status (SES) are given in Table 4.

Table 4: Summary of Two-way ANOVA for Subgroups based on Socio-Economic Status

SES	Source of Variance	Type III Sum of Squares	df	Mean Square	F	α
High SES	SI	1395.971	2	697.985	11.172	.000
	EI	2804.456	2	1402.228	22.443	.000
	SI X EI	582.952	3	194.317	3.110	.031
Average SES	SI	4228.372	2	2114.186	17.653	.000
	EI	4827.855	2	2413.927	20.156	.000
	SI X EI	1648.904	4	412.226	3.442	.009
Low SES	SI	2298.391	2	1149.195	7.060	.001
	EI	4740.237	2	2370.118	14.562	.000
	SI X EI	1320.939	2	660.469	4.058	.020

The result of the two way ANOVA, given in Table 4, reveals that the main effect of the independent variables on the mental health status of secondary school students at all the three levels of socio-economic status are significant. The social intelligence and emotional intelligence have a significant interaction effect on the mental health of secondary school students in different socio-economic status. The hypothesis-4 is, hence, rejected.

Hypothesis-5: There is no significant main effect and interaction effect of social intelligence and emotional intelligence on mental health status of secondary school students with respect to achievement level.

Two way ANOVA was carried out to find out the whether the independent variables have any significant main effect and interaction effect on the mental health status of secondary school students with respect to the levels of their academic achievement. The result of the analysis made in this context is given in Table 5.

Table 5: Summary of Two-way ANOVA for Subgroups based on Achievement Level

Achievement	Source of Variance	Type III Sum of Squares	df	Mean Square	F	α
High ACH	SI	5906.139	2	2953.069	22.929	.000
	EI	154.192	2	77.096	.599	.551
	SI X EI	102.775	3	34.258	.266	.850
Average ACH	SI	3570.085	2	1785.042	14.124	.000
	EI	7920.916	2	3960.458	31.337	.000
	SI X EI	970.911	4	242.728	1.921	.106
Low ACH	SI	251.865	2	125.933	1.521	.224
	EI	4663.369	2	2331.684	28.162	.000
	SI X EI	28.978	2	14.489	.175	.840

The result of the two way ANOVA, presented in Table 5, indicates that social intelligence has significant main effect on the mental health status of high achievers ($F_{(2,121)} = 22.929$; $p < .001$) and average achievers ($F_{(2,398)} = 22.929$; $p < .001$); while no significant effect of social intelligence on mental health has been noticed in the case of low achievers ($F_{(2,85)} = 0.175$; $p > .05$). Emotional intelligence, on the other hand, has significant main effect on mental health status of average achievers ($F_{(2,398)} = 31.337$; $p < .001$) and low achievers ($F_{(2,85)} = 28.162$; $p < .001$), but not on that of high achievers ($F_{(2,121)} = 0.599$; $p > .05$). Further, none of the F-ratio obtained on testing the significance of interaction effect of independent variables on mental health status of students at different levels of achievement, is significant. It shows that the factors have no significant interaction effect on mental health status of secondary school students at high-, average-, and low levels of achievement.

VI. CONCLUSIONS

1. Social intelligence and emotional intelligence have a significant main effect and interaction effect on mental health status of secondary school students.
2. Interaction effect of social intelligence and emotional intelligence is significant for mental health status of secondary school students with respect to gender. Variations in mental health of the adolescents can be attributed to the combined effect of their emotional intelligence and social intelligence with respect to gender.
3. Social intelligence and emotional intelligence have significant main effect on mental health status of secondary school students from both joint-, and nuclear families. The factors have significant interaction effect on the mental health of adolescents from nuclear families, and not on the mental health of subjects from joint families.
4. Social intelligence and emotional intelligence have significant main effect and interaction effect on the mental health of students from all socio-economic strata.
5. Social intelligence and emotional intelligence do not have significant interaction effect on the mental health status of secondary school students in different levels of achievement.

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