

Structural Relationship among Social Support, Hope, Stress and Emotional Intelligence of Rural Elementary School Students in Korea: the Mediating Effect of Self-esteem

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Abstract

Background/Objectives: This study aimed to identify the structural relationship among social support, hope, stress, self-esteem and emotional intelligence for 240 students that attend rural small elementary schools in one city and two counties. **Methods/Statistical Analysis:** For analysis, frequency analysis, reliability analysis, correlation analysis, structural equation modeling and Sobel's test were conducted. **Findings:** First, social support had a significant positive correlation with hope, self-esteem and emotional intelligence but had a negative correlation with stress. Stress did not have a significant positive correlation with empathy and emotional regulation, the subcategories of emotional intelligence, but had a negative correlation with emotional awareness and emotional utilization. Second, hope in the rural elementary school students had a positive influence on self-esteem and self-esteem had a significant positive influence on emotional intelligence. Stress had a negative influence on self-esteem, whereas it had a positive influence on emotional intelligence. Social support had a positive influence on self-esteem and emotional intelligence. Third, in the relationship between social support and emotional intelligence and between stress and emotional intelligence, there was an indirect effect from self-esteem. **Application/Improvement:** This study will be used to increase emotional intelligence through self-esteem for elementary students.

Keywords: Emotional Intelligence, Mediating Effect, Rural Elementary School Students, Self-Esteem, Social Support

1. Introduction

Korean elementary school students experience emotional conflicts and anxiety due to changes in the social structure such as materialism, a uniform education system and a competitive atmosphere¹. In these circumstances, emotional intelligence, which is a kind of emotional ability to recognize and distinguish one's feelings and those of others and based on this, to direct one's thinking and acting², works as an important factor that has a positive influence on adaptation to school and the improvement of peer relationships³. Emotional intelligence also has a highly positive correlation with interpersonal skills⁴ and in terms of being developed and learned⁵, what it makes the interest in elementary school students' emotional intelligence is needed.

One of the variables that affect emotional intelligence is social support, which refers to positive resources that are gained from other people in social relationships⁶ and is made up of parent's support, teachers' support and friends' support. That is, social support was found to be the factors that serve as positive assistance provided by social relationships when in trouble and that help to relieve stress⁷.

In children and adolescents, social support affects stress⁸ and close interaction with friends is effective in lowering stress and stabilizing emotions⁹. Therefore, it can be assumed that there is a close relationship between social support and stress.

For children, stress is a psychological, behavioural and physiological response that arises from the awareness that one cannot properly cope with inner or outer

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demands with the resources at hand and it is a factor that causes conflict, tension and pressure⁸. In the social structure centering on adults, stress in elementary school students is often neglected, but children, as well as adults, live in stressful environments¹⁰. Furthermore, agricultural, mountain and fishing villages have been neglected areas during the Korean society's development toward urbanization and globalization. This is also reflected in education¹¹. Elementary school students in rural areas experience as much stress as students in large, medium and small cities¹⁰, so there is a growing need to address stress in rural elementary school students.

Meanwhile, the representative variables that are negatively related to stress are hope and self-esteem. Hope reflects spiritual energy focused on continuous effort to achieve a goal and finding alternatives¹². Regarding studies on the relationship between hope and other variables, hope has a negative correlation with stress¹³ and a positive correlation with self-esteem¹⁴. A previous study found that a hope training program improved self-esteem¹⁵. Therefore, a causal relationship can be presumed between hope and self-esteem which requires further research. Also, self-esteem is an indication of mental health¹⁶ alongside self-evaluation and the level of belief about one's ability, importance, success and value¹⁷. People with high self-esteem can control and keep themselves more stable than people with low self-esteem¹⁸, so it can be said that self-esteem is related to emotional awareness and the ability to control emotions. Stress was found to affect emotional and behavioural problems and in this relationship, self-esteem played a mediating role¹⁹.

As can be seen above, emotional intelligence was found to be a variable related to social support, hope, stress and self-esteem and while it can be developed through learning, there have been no studies on the structural relationship between variables targeting rural elementary school students.

So this study was conducted to determine the relationship among social support, hope, stress, self-esteem and emotional intelligence targeting elementary school students living in rural areas. To this end, the following were set as research questions: First, what is the correlation among social support, hope, stress, self-esteem and emotional intelligence? Second, what is the structural relationship among social support, hope, stress, self-esteem and emotional intelligence in rural elementary school students? Third, how does self-esteem mediate the relationship among social support, hope, stress and emotional intelligence?

2. Method

2.1 Research Model

Based on previous research results indicating that emotional intelligence has a highly positive correlation with interpersonal skills⁴, that social support has an influence on stress⁸ and that hope has a negative correlation with stress and a positive correlation with self-esteem¹⁴, a research model was developed as shown in Figure 1.

2.2 Participants and Data Collection

In this research, purposive sampling was conducted on 240 students attending small-sized schools located in rural areas in 1 city and 2 counties in Chungcheongnam province, with the convenience of the survey taken into consideration. Individual characteristics of the research subjects are as follows. Girls and boys accounted for 45.8% and 54.2%, respectively. In terms of school grade, first graders accounted for 19.2%, which was the highest, followed by third, sixth and fifth graders accounting for 18.3%, 17.5% and 16.7%, respectively. Second and fourth graders each accounted for 14.2%.

2.3 Tools

2.3.1 Social Support

For the scale of social support, Kim's scale²⁰ modified appropriately for research subjects from the Social Support Appraisal Scale (SSAS) developed by²¹ was utilized.

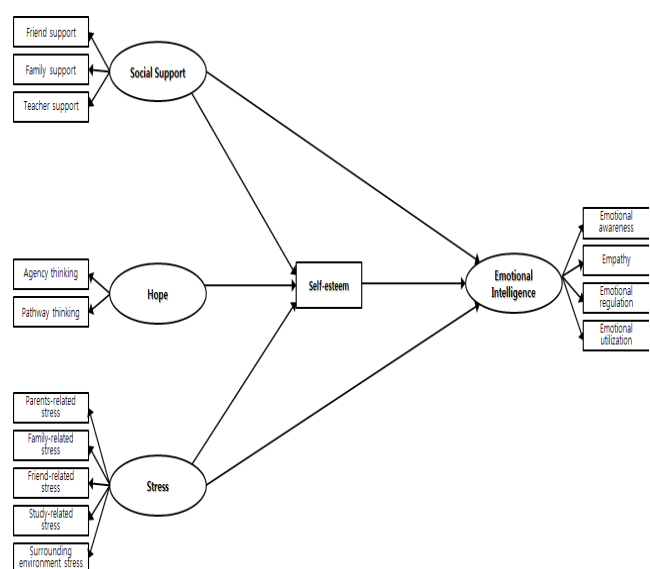


Figure 1. Research model.

The modified scale consists of 3 subdivisions that measure children's perceptions and evaluation of family support, peer support and teacher support. Each item is scored on a 4-point Likert scale from "strongly disagree (1)" to "strongly agree (4)". Regarding the reliability, the values of Cronbach's α for peer support, family support and teacher support were $\alpha = 0.789$, $\alpha = 0.883$ and $\alpha = 0.729$, respectively.

2.3.2 Hope

The K-DHS, the Korean version of Snyder's Dispositional Hope Scale developed by²² based on the hope scale from²³ was utilized. Despite the 5-point Likert scale used for the hope scale, the K-DHS is modified to a 3-point scale to be suitable for research subjects, indicating higher levels of hope with higher scores. Regarding the reliability, the values of Cronbach's α for agency thinking and pathway thinking were $\alpha = 0.710$ and $\alpha = 0.756$.

2.3.3 Stress

To measure stress, 36 question items applicable to 'family-related stress', 'peer-related stress', 'parent-related stress', 'study-related stress' and 'surrounding environment stress' out of the daily stress scale for Korean children developed by²⁴ were utilized. Stress is scored on a 4-point Likert Scale, reflecting higher levels of stress for children at higher scores. For the reliability, the values of Cronbach's α for 'parent-related stress', 'family-related stress', 'peer-related stress', 'study-related stress' and 'surrounding environment stress' were $\alpha = 0.871$, $\alpha = 0.848$, $\alpha = 0.876$, $\alpha = 0.844$ and $\alpha = 0.867$, respectively.

2.3.4 Self-Esteem

The self-esteem scale developed by²⁵ was utilized. The scale consists of 10 positive or negative question items. Each item is scored on a 4-point Likert scale and self-esteem is higher at higher scores. For the reliability, the values of Cronbach's α for positive and negative question items were $\alpha = 0.789$ and $\alpha = 0.684$, respectively.

2.3.5 Emotional Intelligence

To measure emotional intelligence, emotional awareness, empathy, emotional regulation and emotional utilization, but not emotional expression, were selected through confirmatory factor analysis from the subdivisions of the emotional intelligence test created by Moon²⁶ and based on the emotional intelligence model from². Each item is scored

on a 3-point Likert scale from disagree (1) to agree (3) with a closed end questionnaire. The Likert scale indicates higher emotional intelligence with higher scores. Regarding the reliability, the Cronbach's α of emotional awareness, empathy, emotional regulation and emotional utilization were $\alpha = 0.740$, $\alpha = .751$, $\alpha = 0.855$ and $\alpha = 0.870$, respectively.

2.4 Data Analysis

Data were analysed by using SPSS PC+ Win. 21.0 and Amos 21.0. For the statistical analysis, descriptive statistics, reliability analysis, correlation analysis, mean comparison analysis, structural equation modeling and Sobel's test were applied.

3. Results

3.1 Correlation Analysis and Descriptive Statistics

The results of Pearson's correlation analysis to identify the correlation among variables are shown in Table 1 Social support, hope, self-esteem and emotional intelligence had a significant positive correlation between them, but they had a negative correlation with stress. Specifically, the correlation coefficient between emotional intelligence and social support was 0.128 to 0.389, the correlation coefficient of hope and emotional intelligence was 0.172 to 0.365 and that of self-esteem and emotional intelligence was 0.283 to 0.445. Stress did not have a significant correlation with empathy and emotional regulation, the subcategories of emotional intelligence, but had a negative correlation with emotional awareness and emotional utilization with a correlation coefficient of -0.150 to -0.325. The averages of the variables were all above the mid-point except for stress and among the subcategories of emotional intelligence, emotional utilization was the highest. Among social support, the average of the family's support was the highest. For stress, parents-related stress was the highest. Regarding hope, agency thinking had the highest average.

Based on the criteria suggested by²⁷, if the absolute value of skewness and kurtosis is lower than 3 and 8, respectively, the variables are judged as satisfying the required conditions of normal distribution.

3.2 Validating Test of Modified Model

To identify the structural relationship for the research model, this study performed confirmatory factors analy-

Table 1. Correlation analysis and descriptive statistics

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1														
2	0.589**	1													
3	0.450**	0.623**	1												
4	0.394**	0.449**	0.328**	1											
5	0.366**	0.417**	0.351**	0.737**	1										
6	-0.175**	-0.322**	-0.185**	-0.253**	-0.183**	1									
7	-0.145*	-0.294**	-0.191**	-0.174**	-0.150*	0.710**	1								
8	-0.190**	-0.183**	-0.105	-0.186**	-0.151*	0.614**	0.656**	1							
9	-0.239**	-0.346**	-0.218**	-0.283**	-0.247**	0.680**	0.621**	0.610**	1						
10	-0.249**	-0.352**	-0.184**	-0.249**	-0.223**	0.566**	0.645**	0.574**	0.574**	1					
11	0.551**	0.547**	0.477**	0.540**	0.485**	-0.356**	-0.343**	-0.308**	-0.385**	-0.355**	1				
12	0.389**	0.332**	0.371**	0.314**	0.365**	-0.150*	-0.218**	-0.200**	-0.188**	-0.257**	0.445**	1			
13	0.220**	0.179**	0.194**	0.305**	0.329**	-0.023	-0.028	0.048	-0.032	-0.087	0.291**	0.302**	1		
14	0.303**	0.251**	0.286**	0.370**	0.404**	-0.074	-0.048	0.006	-0.064	-0.075	0.424**	0.369**	0.625**	1	
15	0.132*	0.153*	0.128*	0.204**	0.172**	-0.325**	-0.216**	-0.221**	-0.262**	-0.151*	0.283**	0.177**	0.263**	0.263**	1
M	2.730	3.131	2.866	2.184	2.165	2.101	1.700	1.944	1.982	1.621	3.042	2.451	2.178	2.214	2.691
SD	0.564	0.657	0.572	0.510	0.513	0.735	0.670	0.792	0.743	0.674	0.532	0.382	0.456	0.403	0.251
Skewness	-0.356	-0.656	-0.105	-0.213	-0.069	0.415	0.926	0.660	0.574	1.368	-0.101	-0.692	-0.308	-0.263	-1.671
Kurtosis	0.536	0.336	-0.239	-0.313	-0.286	-0.483	0.356	-0.421	-0.296	1.689	-0.584	0.034	-0.407	-0.122	7.525

1. Peer support, 2. Family support, 3. Teacher support, 4. Agency thinking, 5. Pathway thinking, 6. Parent-related stress, 7. Family-related stress, 8. Peer-related stress, 9. Study-related stress, 10. Surrounding environment-related stress, 11. Self-esteem, 12. Emotional awareness, 13. Empathy, 14. Emotional regulation, 15. Emotional utilization.

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

sis (measurement model analysis), convergent validity evaluation and research model analysis. In regard to the criteria for confirming the goodness of fit for the measurement model, χ^2 was assigned a value that did not have any statistically significant difference. Also, TLI and CFI were assigned a value of more than .9, whereas RMSEA was assigned a value of less than .1²⁸. Also, for the confirmation of the convergent validity of the measurement model, the standardized factor load was assigned a value of more than .5, whereas z value was assigned a value that was statistically significant. Moreover, Average Variance Extracted (AVE) and Concept Reliability (CR) were assigned a value of more than .5 and a value of more than .7, respectively²⁹.

In the goodness of fit index indicating the overall goodness of fit for the model resulting from the verified research model, the values of χ^2 , NFI, TLI, CFI and RMSEA were 165.687 (df = 82), 0.904, 0.934, 0.948 and 0.065, which are difficult to satisfy and lead to partial modification of the model through Modification Indices (MI). To modify the research model, out of the error variance of the value of MI exceeding 10³⁰, a covariance path is connected between errors that can theoretically be explained.

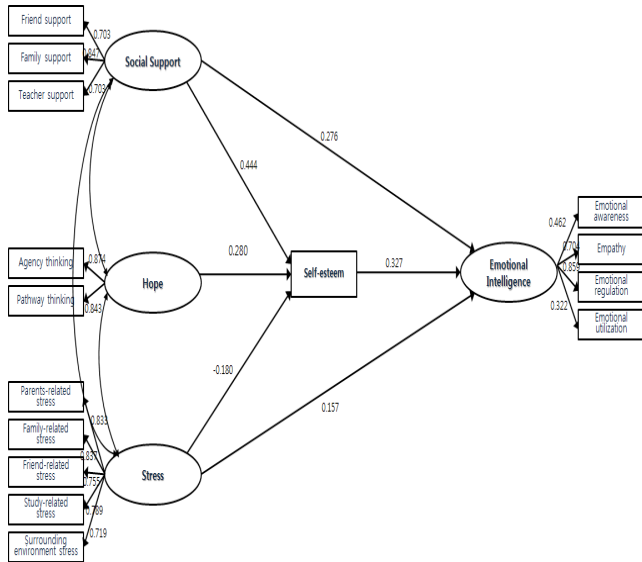
As a result of modifying the model, as seen in Table 2, the value of χ^2 in the goodness of fit index was 133.875 (df = 80), NFI was 0.922, TLI was 0.956, CFI as 0.967 and RMSEA was 0.053. The modified model was much improved in the goodness of fit index compared to the model before modification. So this study selected the modified model as the final model for analysis. The modified model and verification results for each path coefficient are presented in Figure 2 and Table 3. The verification results depending on each path are as follows. Hope in rural elementary school students had a positive influence on self-esteem ($\beta = 0.280$, $p < 0.001$) and self-esteem had a significant positive influence on emotional intelligence ($\beta = 0.327$, $p < 0.01$). Stress had a negative influence on self-esteem ($\beta = -0.180$, $p < 0.01$), whereas it had a positive influence on emotional intelligence ($\beta = -0.157$, $p < 0.05$). Social support had a statistically significant positive influence on self-esteem ($\beta = 0.444$, $p < 0.001$) and emotional intelligence ($\beta = -0.276$, $p < 0.05$).

3.3 Verification of Mediating Effect

Among the variables used to investigate whether the size of the indirect effects caused by the mediation of self-es-

Table 2. A comparison of the goodness of fit index between the research and modified models

Classification	χ^2	df	NFI	TLI	CFI	RMSEA
Research model	165.687***	82	0.904	0.934	0.948	0.065
Modified model	133.875***	80	0.922	0.956	0.967	0.053

*** $p < 0.001$ **Figure 2.** Modified model.**Table 3.** Path of the modified model

Path between variables		B	β	S.E	t-value
Hope	→ Self-esteem	0.334	0.280	0.084	3.977***
Stress	→ Self-esteem	-0.156	-0.18	0.048	-3.270**
Social support	→ Self-esteem	0.594	0.444	0.106	5.586***
Social support	→ Emotional intelligence	0.123	0.276	0.049	2.489*
Self-esteem	→ Emotional intelligence	0.109	0.327	0.036	3.070**
Stress	→ Emotional intelligence	0.045	0.157	0.023	1.965*

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

teen in rural elementary school students was statistically significant, Sobel's test was used and the results are shown in Table 4. First, in the path between social support and emotional intelligence, self-esteem ($Z = 2.6638$, $p < 0.01$) had a mediating effect and it was found to be statistically

Table 4. Mediating effects of emotional intelligence, hope and stress

Path			Z	p
Social support	→ Self-esteem →	Emotional intelligence	2.6638	0.0077
Stress	→ Self-esteem →	Emotional intelligence	-2.2154	0.0267

significant. Also, in the path between stress and emotional intelligence, self-esteem ($Z = -2.2154$, $p < 0.05$) had a significant mediating effect. That is, as the social support for rural elementary school students increased, their self-esteem increased and this had a positive influence on emotional intelligence. Also, as the stress level of rural elementary school students went up, their self-esteem went down, which had a negative impact on emotional intelligence. These results show that social support for rural elementary school students has a direct positive influence on emotional intelligence and also has an indirect influence through self-esteem. Stress has an indirect negative influence on emotional intelligence, whereas it has an indirect negative influence through self-esteem.

4. Discussion

This study was conducted to examine the structural relationship among social support, hope, stress, self-esteem and emotional intelligence for 240 students attending rural small elementary schools in S city, T county and Y county located in South Chungcheong province. Based on the research results, the following can be discussed.

First, social support, hope, self-esteem and emotional intelligence had a significant positive correlation but social support and stress had a negative correlation. Stress were not significantly correlated with empathy and emotional regulation, the subcategories of emotional intelligence, but had a negative correlation with emotional awareness and emotional utilization. These results are in line with research results suggesting that hope has a negative correlation with stress¹³, and a positive correlation with self-esteem¹⁴ and that emotional intelligence has a highly positive correlation with interpersonal skills⁴.

Second, hope in elementary school students in rural areas had a positive influence on self-esteem and self-esteem had a significant positive influence on emotional intelligence. While stress had a negative influence on self-esteem, it had a positive influence on emotional intelligence. Social support had a significant positive influence

on self-esteem and emotional intelligence. These results correspond to the results of existing studies indicating that self-esteem plays a mediating role in the relationship between stress and emotional and behavioural problems¹⁹ and that hope training program raises self-esteem¹⁵.

Third, in the relationship between social support and emotional intelligence and between stress and emotional intelligence in elementary school students in rural areas, self-esteem had an indirect effect. In other words, the amount of social support and stress perceived by rural elementary school students have a direct influence on emotional intelligence and it also has an indirect influence through self-esteem. So self-esteem was found to be an important variable that explains emotional intelligence.

Based on these results, the following suggestions can be made for follow-up studies. This study found that self-esteem in rural elementary school students was a mediating variable, consequently confirming the importance. According to another study, people with high self-esteem respect their lives in their own way and have more interest in the progress of their lives³¹, which makes it more important to study self-esteem in rural elementary school students. Also, through integrated self-esteem enhancement programs suitable for the characteristics of elementary school students in rural areas, active intervention is required to lower the students' stress levels and strengthen their emotional competence to overcome the inferiority complex stemming from a poor educational environment.

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