

Effects of Parenting Self-Efficacy, Parenting Alliance Inventory, and Social Support on the Mothers' Health and Parenting Stress

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Abstract

The purpose of this study was to understand the effects of parenting self-efficacy, parenting alliance inventory, and social support on health and parenting stress of mothers raising infant and young children. Data collection was performed for a total of 279 subjects using a structured questionnaire administered through a mobile device from August 2-30, 2018. Independent t-test, ANOVA, Scheffe's test, and hierarchical regression analysis were used for data analysis using SPSS 21.0. In this study, the effect on health and parenting stress was confirmed by classifying microsystems as parenting self-efficacy centered on an ecological point of view, the mesosystem as the parenting alliance inventory, and the exosystem as social support. In health and parenting stress, microsystem (affective efficacy, daily system organization efficacy, discipline efficacy) and parent-child dysfunctional interactions were correlated with mesosystem (affective efficacy, discipline efficacy, game efficacy, educational efficacy) and exosystem (parenting alliance inventory). For the difficult child, microsystem (game efficacy, discipline efficacy, education efficacy), mesosystem (parenting Alliance inventory), and exosystem (physical support) were found to be significant. In particular, mothers raising a difficult child were found to need help not only from the family unit but also from society. Therefore, in order to reduce the mother's health and parenting stress, it is necessary to increase the husband's alliance inventory, increase the mother's sense of discipline efficacy and education efficacy, provide emotional support rather than physical support, and at the same time build a social support network for easy access to childcare facilities. This study is meaningful in that it identified the factors that influence health and parenting stress based on ecological theory and provides basic data for further research on health and parenting stress.

Keywords: Health and Parenting, Self-efficacy, Alliance, Inventory, Social Support, Stress.

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INTRODUCTION

Korea's fertility rate has been decreasing since 2015 (1), showing the lowest fertility rate among OECD member countries. Globally, the low fertility is attracting a lot of attention because it brings various social problems; Korea is particularly attracting more attention because of the rapid rate of decline in the fertility rate. The social problem of low birthrate is related to human support. This is because the individual's welfare and quality of life may deteriorate in the future due to aging of the population with increase in the amount to be borne by the country for each individual (1).

The rapid changing of the times provides convenience of life and material abundance, but it also causes various stresses. Regarding stress in personal factors, women have higher stress level than men, and among this group of women, married women experience higher stress than unmarried women as their roles increase (2). New roles and experiences, such as pregnancy and childbirth, are difficult to overcome as these entail lack of personal time, psychological and

economic burden, social isolation, proper parenting of children, anxiety about the future, physical fatigue, and health problems. In case of managing working and parenting at the same time, they often feel having not enough time to focus on their children and feel guilty about their role as a parent, which increases health and parenting stress.

Furthermore, in the social atmosphere that expects women to take the primary responsibility for raising child, they experience difficulties whether to raise their children or performing economic activities when it comes to maintaining economy. Therefore, if the factors affecting mothers' health and parenting stress are identified and health and parenting stress is managed to improve satisfaction about their family life, self-efficacy, self-esteem, and marital conflict, it will be possible to reduced health and parenting stress of mothers in the future. Furthermore, it will lead to harmony between family life and social activities of mothers with infant and young children, allowing them to have a positive effect on subsequent childbirth (3).

Health and parenting stress refers to a psychological reaction

process in which parents negatively accept everyday parenting events that occur in the process of raising their children (4). Mothers with infant and young children experience high health and parenting stress and difficulty in controlling health and parenting stress due to the following: physical fatigue caused by breastfeeding; changes in the body change and anxiety, despair, fatigue, compulsive thoughts (5)]. In general, Health and parenting stress varies from person to person, but it can be said that most mothers experience it in the process of raising their children. Health and parenting stress can be classified into difficulties experienced by parents themselves, difficulties in the relationship between parents and children, and temperament of children. Parental distress refers to problems with personal adjustment such as parental depression, role restrictions, social isolation, and relationships with spouses. In addition, parent-child dysfunctional interaction includes the receptivity of infant and young children, strengthening relationship of infant to parents, affection for infant and young children, and parental attachment. A child's temperament includes the infant and young children adaptation, needs, mood, and activity level, and it is a characteristic of a child that appears from birth. Because Health and parenting stress is constantly experienced by mothers while raising their children, mothers raising children with negative emotionality or caregivers with difficult temperament perceive their stress level to be higher than mothers with positive emotionality (6). In addition, if a mother fails to control stress, the caregiver weakens the confidence and will of her own child-rearing, and through negative parenting behaviors such as rejection, non-affection, and coercion in interaction with her child, the child's development is hindered. The mother's health and parenting stress has an important meaning because it inhibits the child's behavior and can be linked to problematic behaviors (5).

Various studies have been conducted so far to relieve the health and parenting stress of mothers, who game many roles in the parenting process. Among the factors affecting health and parenting stress, parenting self-efficacy belongs to the microsystem and is a factor that can overcome health and parenting stress. Parenting self-efficacy refers to specific knowledge related to child rearing, a level of confidence in one's role performance, organization of parenting-related tasks, belief in performing parenting behavior as a parent, and a positive impact on child development (7). In addition, since parenting self-efficacy is closely related to the behavior of guiding children rationally or showing affectionate attitudes, mothers with high parenting self-efficacy have a warm and positive attitude toward their children, flexible and consistent behavior depending on the situation. These mothers can not only easily adapt to their role as a caregiver, but can also participate more actively in raising their children (8). Moreover, because they can overcome problems and difficult situations in raising children, they maintain a warm and stable relationship with children who have difficult personalities, and provide consistent, child-centered, appropriate child rearing. Therefore, parenting self-efficacy is defined as a

positive perception of child rearing, and it can be said to be an important influencing factor of health and parenting stress (9).

In the process of raising children, the husband is not only the most friendly being, but also has a positive effect on health and parenting stress because he can provide various aids, give practical and immediate help and parenting alliance inventory (10). During the child-rearing process, the mother can reduce the burden of child rearing by lessening physical difficulties and relieving negative emotions such as anxiety about child rearing. Not only does it increase self-esteem, but it also lowers feelings of depression, resulting in a feeling of emotional well-being. A positive Parenting Alliance Inventory increases marital satisfaction, which not only reduces marital conflict, but also increases maternal and marital satisfaction (4). As it becomes easier to recognize the role of a caregiver and at the same time to have more leisure in the process of parenting, the mother responds sensitively to the behavior of her child, and considers herself a competent parent, leading to increased confidence and satisfaction (11).

In addition to parenting alliance inventory, social support, e.g. a social network that provides practical help in crisis situations experienced in the parenting process, is a broad exosystem that alleviates health and parenting stress (12). A mother experiences physical and emotional difficulties due to her changing experiences as a caregiver, and in order to efficiently solve it, she receives support in the form of parenting information and advice from her family, friends, and neighbors, and sometimes, performance of housework (13). In general, social support includes informative support, which is non-material help provided by family members, relatives, friends, etc., and formal support, which is material help provided through social welfare systems or community programs. In this study, social support was identified with a focus on informative support, and specific forms of informative support were the following: emotional support, which includes respect, emotional, trust, interest, and experience; informative support, which provides information that can be used for personal matters; direct help, such as doing work or giving money or goods; and evaluative support, that conveys information related to self-evaluation, such as acknowledging or denying one's own actions (14). Social support can reduce the negative impact on parents' psychological adaptation while providing information about the desirable parenting role as a coping resource for health and parenting stress or providing instrumental assistance for child rearing. Positive social support makes mothers who are raising infant and young children feel recognized as valuable, thus making them feel physically and psychologically secure. Therefore, it will be possible to directly help reduce health and parenting stress by identifying the effects of various social support factors including emotional, physical, informational, and evaluative support on health and parenting stress.

In previous studies on health and parenting stress, factors such as mother's depression, emotional intelligence,

parenting anxiety, and parenting guilt were identified. Other fragmentary influencing factors such as social factors, specifically parenting alliance inventory and social support, were also identified. Most of the studies have investigated health and parenting stress. Since some studies identified health and parenting stress with a focus on changes in children's behavior, there was a limit to understanding the importance of health and parenting stress factors. In order to overcome these limitations, this study identified health and parenting stress with a focus on the ecological theory.

Bronfenbrenner's ecological theory is a model that combines an ecological perspective and explains and analyzes human development through a general system perspective. Ecological model focuses on the relationship between the two rather than the individual's conceptual understanding of the environment, thus achieving a match between the individual's coping abilities and environmental needs. In addition, systematic thinking from an ecosystem perspective can approach the individual's reality in that the environmental system surrounding the individual affects the individual in various ways (15, 16). The ecological theory is a meaningful model in that it considers not only individual factors but also environmental factors at the same time and places importance on the relationship between the individual and the environment. Since health and parenting stress is a result of interactions between environments rather than an individual problem, ecological theory can be said to be an appropriate model to understand health and parenting stress. Considering various levels of environmental factors such as internal, interpersonal, organizational, community, and policy on personal health, such as stress, not only predict behavior, but also make it possible to more realistically identify influencing factors (17). In particular, when considering the relationship between parents and children, the ecological theory is evaluated to be effective in research related to parenting (18). A study to identify which factors among child factors, parent factors, and environmental factors are the most important factors in health and parenting stress for children with disabilities (19). In the case of working mothers, among other factors influencing childcare support, family factors and work-family balance were identified as important factors predicting health and parenting stress in a study on general children (20).

The Kemp model, which simplified the microsystem, mesosystem, and exosystem based on Bronfenbrenner's ecological theory, is a theory that has been extended to a number of interrelated environmental theory factors that affect individual development through the application of the ecological theory. In the process of raising infant and young children, it is possible to break away from individual problems and include environmental aspects. Because the variables are singular, factors for changing parenting behavior are used as potential intervention methods and the range of options can be used widely. In addition, it can be said that it is a model suitable for understanding mother's health and parenting stress in that it considers all influences at

multiple levels (15, 16).

Based on the Kemp's theory, this study defined the system classified into microsystem, mesosystem, and exosystem as parenting self-efficacy that is a microsystem induced by health and parenting stress from the ecological perspective, while identifying the parenting alliance inventory that is directly is connected with individuals as for the mesosystem. Finally, exosystem was set as social support that can provide practical help. In addition, the study intended to identify the final remaining factors by introducing the most significant factors and to figure out the factors with significance in terms of health and parenting stressor. For this purpose, correlation analysis and hierarchical multiple regression analysis were performed, and the most influential factor was identified by comparing the absolute values of the beta values. By identifying factors that may directly help control health and parenting stress control with a focus on the subdivided influencing factors on health and parenting stress, this study further intends to utilize the findings as basic data for health and parenting stress research targeting mothers with infant and young children. In addition, it will be possible to provide implications for policy interventions in research of mothers' health and parenting stress.

Accordingly, the research objectives were the following;

1. Identify the differences in health and parenting stress according to the general characteristics of the subject.
2. Identify the relationship between parenting self-efficacy, parenting alliance inventory, and social support.
3. Identify the influencing factors of health and parenting stress.

2. CONTENTS

Method

This study is a descriptive research study that verified the microsystem, mesosystem, and exosystem affecting the health and parenting stress of mothers with infant and young children as related to Kemp's ecological theory. To this end, parenting self-efficacy, Parenting Alliance Inventory, and social support were selected based on prior research on relevant factors for each aspect, and the effects on health and parenting stress of mothers with young children were analyzed.

Subject and protocol

In consideration of the ethical aspects of the subject, this study was reviewed and approved by the Institutional Review Board of C University (approval number: MC18QCSE0061), and then data collection was carried out. Since it was distributed through the questionnaire service (URL) provided by Google, the survey area cannot be accurately confirmed due to the nature of online distribution. Instead, data were collected from a total of four regions based on the regional name specified in the distributed community. After

explaining the contents related to maintaining personal confidentiality and guaranteeing anonymity upon completing the consent form, data were collected mainly from subjects who agreed to participate in the study. The data collection period for this study was from August 2 to August 31, 2018. To prevent leakage of personal information and questionnaire contents, the collected data complied with security by using locking devices and passwords. Other additional ethical matters complied with IRB standards.

This study used the G*Power3.1 program to check the number of samples required for the study, and the appropriate number of sample sizes required for regression analysis (effect size $f^2=.25$, significance level $\alpha=.05$, power $(1 - \beta)=.95$) was 275 final samples. Questionnaires were distributed to 300 people in consideration of dropouts during data collection, and a total of 279 questionnaires were used for the final analysis; 21 questionnaires that provided insincere answers were excluded.

Measurement Tools

[Table 1] Composition of items on parenting efficacy

Subfactor	Item
Affection	My child feels that I love him/her very much.
	My child knows that I understand how he/she feels when he/she is offended.
	My child knows how much I care for him/her from my actions.
	I am sure that I am a parent who raises my children properly.
	I can sense when my child starts to feel bad.
Daily system organization	I can make my child to keep his/her day-to-day routine.
	I cannot make my child to do a regular set of daily routines
	I cannot make my child to go to bed at a regular time.
	I have no control over my child's lifestyle (sleep habits, eating habits, etc.).
Discipline	I have a hard time getting my child to listen to me.
	Despite my efforts, I find it difficult to influence my child's behavior.
	I am extremely discouraged when my child tests the limits I have set.
	Often I am so preoccupied with my own problems that I cannot even notice my child's emotional changes.
	I feel that I do not have the power to control my child's life.
Play	Playing with my child is one of the things I don't find very difficult.
	I can actively participate in play with my child.
	I am a good playmate for my child.
	I can always think of things to play with my child.
	It is not difficult for me to sit down with my child on a regular basis to read a book or do something together.
Education	When I try to explain something to my child, it is difficult to find the appropriate level of my explanation.
	I want my child to know more about his/her surroundings, but I feel this is something I am not good at.
	I feel that I am not very good at teaching my child about the world.

• **Parenting self-efficacy**

To measure parenting self-efficacy in this study, the Korean version of the parenting self-efficacy scale using Meunier and Roskam's Echelle Globale du Sentiment de Compétence Parentale (EGSCP) was used. In this scale, parenting self-efficacy and cognitive structure were measured to determine parental domains according to parenting conditions and defined as parenting self-efficacy, affection efficacy (5 items), daily system organization efficacy (4 items), discipline efficacy (5 items), game efficacy (5 items) and education (3 items). The questionnaire consists of 22 items in five areas, including [Table 1]. In the study of Sung and Baek (20), Cronbach's α were : affection efficacy.80; daily system organization efficacy.82; discipline efficacy.75; game efficacy.86; educational efficacy.83; and overall in total.91. In this study, the values of Cronbach's α were: affection efficacy.82; daily system organization efficacy.84; discipline efficacy.82; game efficacy.86; educational efficacy.88; and overall.94.

• **Parenting Alliance Inventory**

For the assessment of, the Parenting Alliance Inventory that was developed by Abidin and Brunner and translated by Choi et al (21) was implemented in this study. The parenting alliance inventory was measured using with a total of 20 [Table 2] Questions on husband's parenting cooperation

items, and the higher the score, the higher the parenting alliance inventory [Table 2]. In the study of Kwani et al (21), the Cronbach's α was.92 and Cronbach's α in this study was.96.

Item
My husband likes to be only with our child.
When I was pregnant, my husband was convinced that I could be a good mother.
When my child has a problem, my husband and I come up with a good solution together.
My husband is willing to sacrifice himself to help take care of our child.
My husband and I have a talk about our child.
I look forward to talking about my husband and child.
My husband pays a lot of attention to our child.
My husband and I agree on what our child should and shouldn't do.
Seeing my husband play with our child makes me feel close to my husband.
My husband knows how to handle an infant skillfully.
My husband and I are a good team as parents.
My husband believes that I am a good mother.
I believe that my husband is a good father.
My husband makes my role as a mother easier.
My husband takes care of our child the same way I do.
My husband and I evaluate our child basically alike.
When punishing my child, my husband and I usually punish him/her in the same way.
I respect my husband's decision on what is right for my child.
My husband tells me that I am a good mother.
My husband and I have the same goal as to what kind of child we want our child to grow up to.

• **Social support**

This study used the social support scale developed by Park and modified by Ryu et al (22). Which consists of a total of

25 items on emotional support (7 items), physical support (6 items), informative support (6 items), and evaluative support (6 items) [Table 3]. In the study of Ruy [(22)Ryu, K. J., Kim, Y. J., & Song, Y. S. (2009).], the values of Cronbach's α was.97

[Table 3] Composition of items of social support

Subfactor	Item
Emotional support	They make me feel loved and cared for.
	When they are with me, they make me feel close.
	They are happy to listen to my problems.
	They are the ones that I can trust and rely on with my heart.
	They always care and worry about me.
	They motivate and encourage me to make decisions when I am unable to make up my mind and hesitant.
	They try to understand and change my mood when I am offended.
Physical support	When they are not able to directly help me, they send someone else to help me.
	They do their best to help me without expecting anything in return (reward).
	They make time for me and respond whenever I have a problem to discuss.
	They lend me anything I need whenever I need it.
	They do my work for me when I am sick.
Informative support	They financially support me no matter how much money I need.
	They advise me to make rational decisions when I have to make a choice.
	They give me information to help me figure out the cause of my problem.
	They remind me and make sure things I did not know.
	They give me sound advice to help me understand reality and adapt well to social life.
Evaluative Support	They are respectable people with a lot to learn.
	They suggest ways to wisely solve problems when I am faced with a difficult situation (crisis).
	They fairly evaluate the right or wrong of the actions I took.
	They make me feel needed and valuable to them.
	They recognize my work so that I can be proud of what I am doing.
	They respect me personally.
	They praise me when I do well (when I get good results).
	They respect my opinion and generally accept it.

• **Health and Parenting stress**

For the assessment of the health and parenting stress, the Korean version of the Parenting Stress Index (PSI) developed by Abidin and modified and supplemented by Choi and Moon was used in this study (23) [Table 4]. Health and parenting stress consists of 30 items in three domains: Parenting stress (12 items), parent-child dysfunctional interaction (12 items),

and difficult child (6 items). Parenting stress was defined as stress caused by responsibilities and lifestyle changes; parent-child dysfunctional interaction was defined as stress arising from discordance between expectations and responses on children; and difficult child was defined as stress arising from child behavior. In the study of Choi et al (23), the values of Cronbach's α were: parenting stress.84, parent-child dysfunctional interaction.80, difficult child.89, overall.92.

[Table 4] Composition of items of Health and parenting stress

Subfactor	Item
Parenting stress	I sometimes feel that I can't handle certain things I seem to be caught up in my responsibilities as a parent I feel that I can hardly do the things I want to do after having my child I feel bad about the clothes I recently bought There are quite a few things that bother me in my life The fact that I have a child causes more problems in my relationship with my husband than I think I feel that I am alone and have no friends When I go to a meeting, I don't expect it to be fun I am not interested in people as much as I used to I don't enjoy my work as much as I used to
Parent-child dysfunctional interactions	My child rarely does things that please me I usually feel that my child doesn't like me and doesn't want to come close to me My child doesn't laugh at me as often as I would like him/her to be' My effort doesn't seem to be recognized much when I do something for my children My child usually doesn't laugh out loud or laugh happily when gaming It seems that my child does not learn as fast as other children in his/her age My child does not seem to be as funny as the other children'; 'My child does not do things as well as I expect It is difficult and takes a long time for my child to get used to new things' I tried to maintain a more intimate relationship with my child and treat him/her warmly, but it does not work out the way that I want.
Difficult child	My child seems to be irritating more often than other children My child usually does not feel good when he wakes up My child is very emotional and seems to get angry easily My child makes me very upset sometimes My child reacts very sensitively when there is something he doesn't like'; and 'My child is emotional and seems to get angry easily My child sometimes makes me upset much My child is very sensitive when something happens that he/she does not like My child easily explodes with emotions over small things. It uses a five-point Likert scale, and the higher the score, the higher the parental stress.

[Table 5] The values of Cronbach's α

Variable		Cronbach's α	
		Total	Subscales
Parenting Self-efficacy	Affection	.94	.82
	Daily system organization		.84
	Discipline		.82
	Game		.86
	Education		.88
Parenting Alliance Inventory		.96 -	
Social support	Emotional	.97	.93
	Physical		.91
	Informative		.90
	Evaluative		.90
Health and parenting stress	Parenting stress	.90	.84
	Parent-child dysfunctional interaction		.87
	Difficult child		.75

Method of Analysis

The collected data in this study were statistically analyzed using SPSS version 21.0. Descriptive statistics (frequency and percentage) were performed to identify the general characteristics of mothers of infant and young children, and differences in variables according to the general characteristics of subjects were analyzed using t-test, ANOVA, and Scheffe's test. The correlation between variables was analyzed by Pearson's correlation coefficient, and factors affecting health and parenting stress were analyzed by using hierarchical regression analysis.

RESULTS

Differences in the degree of Health and parenting stress according to the general characteristics of the subjects

The differences between the general characteristics of the research subjects and the health and parenting stress due to

the general characteristics are as follow [Table 6]. The largest number of participants in the study was 80.2% (223 people) in their 30s, 46.4% (130 people) with a university degree, and 16.6% (158 people) with a mother with one child. Most of the subjects 78.1% (218 people), were satisfied with the parenting environment. The employment was similar to 49.8% (139 people) and 50.2% (140 people) for full-time and irregular worker. Satisfaction with income satisfaction was 53.4% (149 people). As a result of the difference in health and parenting stress due to general characteristics, among the health and parenting stress variables, age ($F = 5.230, p = .006$) and childcare facility ($t = 2.482, p = .014$) were significant. The difference was shown. Post-mortem analysis found that parents in their 20s were more distressed than those in their 40s, and parents who did not use childcare care facilities had higher health and parenting stress. Other variables were not significant.

[Table 6]. Differences in health and parenting stress according to general characteristics

Variable	N (%)	Parental distress		Parent-child dysfunctional interaction		Difficult child		
		M(SD)	t/F	M(SD)	t/F	M(SD)	t/F	
Age (year)	20s	39 (14.0%)	3.15(.57)	5.230** (.006) a>b	1.88(.55)	1.507 (.224)	2.42(.45)	1.441 (.238)
	30s	223 (79.9%)	2.84(.60)		1.80(.51)		2.35(.43)	
	40s	17 (6.1%)	2.69(.52)		1.62(.35)		2.21(.40)	
Educational background	High school	23 (8.2%)	2.93(.65)	0.439 (.726)	1.82(.44)	0.432 (.730)	2.48(.35)	1.858 (.137)
	College	74 (26.5%)	2.86(.64)		1.77(.51)		2.39(.47)	
	University	130 (46.6%)	2.84(.54)		1.79(.53)		2.29(.43)	
	≥Postgraduate school	52 (18.6%)	2.94(.67)		1.87(.49)		2.39(.42)	
Marriage duration (year)	<1	73 (26.2%)	22.97(.55)	2.183 (.090)	1.87(.45)	1.698 (.168)	2.37(.45)	0.206 (.892)
	1~<3	83 (29.7%)	2.92(.70)		1.83(.52)		2.36(.41)	
	3~<5	64 (23.9%)	2.74(.61)		1.79(.58)		2.32(.45)	
	5≤	59 (21.1%)	2.81(.47)		1.68(.50)		2.36(.43)	
Number of children	1	158 (56.6%)	2.89(.62)	0.127 (.881)	1.82(.47)	0.403 (.668)	2.34(.45)	0.076 (.927)
	2	101 (36.2%)	2.86(.58)		1.76(.60)		2.37(.41)	
	3≤	20 (7.2%)	2.83(.54)		1.79(.37)		2.35(.41)	
Satisfaction on parenting environment	Satisfied	218 (78.1%)	2.90(.59)	-1.665 (.097)	1.81(.50)	-0.620 (.536)	2.36(.45)	-0.165 (.869)
	Dissatisfied	61 (21.9%)	2.75(.63)		1.76(.53)		2.35(.40)	
Secondary caregiver	Y	76 (27.2%)	2.92(.61)	-0.856 (.930)	2.36(.45)	-0.755 (.906)	1.84(.52)	-
	N	203 (72.8%)	2.85(.60)		2.35(.43)		1.79(.51)	
Childcare facility	Used	172 (61.6%)	2.80(.59)	2.482* (.014)	2.36(.42)	0.600 (.679)	1.79(.54)	-
	Not used	107 (38.4%)	2.98(.60)		2.34(.46)		1.82(.46)	
Occupation	Full-time	139 (49.8%)	2.89(.64)	-0.509 (.661)	2.36(.46)	0.023 (.981)	1.80(.54)	-
	Irregular worker	140 (50.2%)	2.85(.56)		2.34(.40)		1.80(.49)	
Income Satisfaction	Very satisfied	9 (3.2%)	2.89(.49)	0.242 (.889)	1.81(.29)	0.790 (.501)	2.11(.32)	1.868 (.135)
	Satisfied	149 (53.4%)	2.86(.61)		1.79(.49)		2.33(.43)	
	Dissatisfied	108 (38.7%)	2.87(.59)		1.79(.55)		2.38(.44)	
	Very dissatisfied	13 (4.7%)	3.01(.69)		2.01(.51)		2.52(.44)	

* p < .05, ** p < .01, *** p < .001

Correlation between health and parenting stress, parenting self-efficacy, parenting alliance inventory, and social support

Among them, the score for health and parenting stress was 2.87±0.60, while that of parent-child dysfunctional interaction and difficult child was 1.80±0.51 and 2.35±0.43 points respectively. The average score on parenting self-efficacy was 4.38±0.69 out of 6 points, while the average of the variables such as affection efficacy, daily system organization efficacy, discipline efficacy, game efficacy, and education efficacy was 4.57±0.72, 4.42±0.85, 4.29±0.92, 4.21±0.89, and 4.42±0.94 points respectively. The average score on parenting alliance inventory was 3.69±0.73 out of 5 points, while social support, emotional support, physical support,

informative support, and evaluative support showed 3.92±0.66, 3.87±0.73, 3.96±0.69, 3.90±0.70, and 2.93±0.66 points respectively. The results of the correlation analysis of this study are as follows [Table 7]. In parental distress, the health and parenting stress was positively correlated ($p < .001$) with parent-child dysfunctional interaction ($r = .439$) and difficult child ($r = .413$). Regarding parenting self-efficacy, parenting distress showed negative ($p < .001$). In parental distress, game efficacy showed positive correlation ($p < .001$). In parental distress, education efficacy showed a positive correlation ($p < .001$). Also, Physical support was positively correlated ($p < .001$) with informative support ($r = .892$) and evaluative support ($r = .894$). Informative support was positively correlated with evaluative support ($r = .831$).

[Table 7] Correlation and descriptive statistics of variables

Variable		M (SD)	1	2	3	4	5	6	7	8	9	10	11	12
Health and parenting stress	Parenting distress ¹	2.34 (.41)	2.87 (.60)	1										
	Parent-child dysfunctional interaction ²		1.80 (.51)	.439 ***										
	Difficult child ³		2.35 (.43)	.413 ***	.564 ***									
Parenting self - efficacy	Affection ⁴	4.38 (.69)	4.57 (.72)	-.315 ***	-.568 ***	-.379 ***								
	Daily system organization ⁵		4.42 (.85)	-.222 ***	-.256 ***	-.321 ***	.420 ***							
	Discipline ⁶		4.29 (.92)	-.434 ***	-.595 ***	-.553 ***	.594 ***	.404 ***						
	Game ⁷		4.21 (.89)	-.344 ***	-.477 ***	-.371 ***	.630 ***	.407 ***	.528 ***					
	Education ⁸		4.42 (.94)	-.372 ***	-.489 ***	-.492 ***	.578 ***	.653 ***	.643 ***	.515 ***				
Husband's alliance inventory ⁹		3.69 (.73)		-.439 ***	-.355 ***	-.296 ***	.464 ***	.244 ***	.300 ***	.313 ***	.282 ***			
Social support	Emotional ¹⁰	3.92 (.66)	3.87 (.73)	-.217 ***	-.367 ***	-.189 ***	.407 ***	.245 ***	.238 ***	.213 ***	.281 ***	.534 ***		
	Physical ¹¹		3.96 (.69)	-.297 ***	-.392 ***	-.183 ***	.394 ***	.247 ***	.265 ***	.255 ***	.308 ***	.593 ***	.887 ***	
	Information ¹²		3.90 (.70)	-.233 ***	-.402 ***	-.213 ***	.425 ***	.240 ***	.241 ***	.244 ***	.313 ***	.520 ***	.875 ***	.892 ***
	Evaluative ¹³		3.93 (.66)	-.341 ***	-.448 ***	-.250 ***	.477 ***	.270 ***	.328 ***	.302 ***	.334 ***	.620 ***	.833 ***	.894 ***

The general characteristics of the subject, parenting self-efficacy, parenting alliance inventory, and the social support on health and parenting stress

The effects of general characteristics, parenting self-efficacy, parenting alliance inventory, and social support on health and parenting stress of the subjects are the following [Table 8]. The fit in all models was found to be statistically significant ($p < .001$). In the Model 4, which was supplemented by including social support, evaluative support, parenting

alliance inventory, and general characteristics, it was confirmed that affection efficacy ($\beta = .156, p = .049$), discipline efficacy ($\beta = -.235, p < .001$), education efficacy ($\beta = -.174, p = .034$), and parenting alliance inventory ($\beta = -.340, p < .001$), and age ($\beta = -.122, p = .018$) were significant predictors. Its explanatory power was shown to be 33% ($p < .001$). In summary, the higher the discipline efficacy, education efficacy, parenting alliance inventory, and age, the lower the health and parenting stress, whereas the lower the affection efficacy, the lesser the health and parenting stress.

In the study, the factors affecting parent-child dysfunctional interaction were verified. In the Model 4 that was supplemented by introducing social support, evaluative support, parenting alliance inventory, and general characteristics, affection efficacy ($\beta = -.173, p = .015$), daily system organization efficacy ($\beta = .144, p = .015$), and discipline efficacy ($\beta = -.336, p < .001$) were confirmed to be significant predictors, and its explanatory power was shown to be 46% ($p < .001$). In other words, as affection efficacy and discipline efficacy increased, parent-child dysfunctional interaction decreased, and as daily system organization efficacy decreased, parent-child dysfunctional interaction also decreased.

It was verified that physical support had a positive effect on health and parenting stress caused by a difficult child, while

discipline efficacy, education efficacy, and parenting alliance inventory had a negative effect. Lastly, the physical support ($\beta = .386, p = .009$), disciplinary efficacy ($\beta = -.390, p < .001$), educational efficacy ($\beta = -.248, p = .002$), parenting alliance inventory ($\beta = -.184, p = .005$), and use of a childcare facility ($\beta = .109, p = .031$) were confirmed to be significant predictors in the Model 4, which was supplemented by introducing social support, evaluative support, parenting alliance inventory, and general characteristics. Its explanatory power was appeared to be 36% ($p < .001$). This can be interpreted that health and parenting stress caused by a difficult child is increased when physical support from a childcare facility is not provided. On the other hand, the higher the discipline efficacy, education efficacy, and parenting alliance inventory, the lower the health and parenting stress caused by difficult child.

[Table 8]. Social support and parenting efficacy influencing health and parenting stress

Variable		Parenting stress				Parent-child dysfunctional interaction				Difficult child			
		M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4
Social support	Emotional	.255	.196	.189	.161	.079	.030	.030	.031	.027	-.033	-.037	-.025
	Physical	-.230	-.223	-.095	-.104	.147	.056	.058	.057	.328	.322*	.390*	.386*
	Informative	.123	.132	.076	.097	-.213	-.154	-.155	-.151	-.191	-.177	-.207	-.196
	Evaluative	-.451**	-.292	-.184	-.172	-.470**	-.163	-.161	-.162	-.407**	-.173	-.115	-.119
Parenting self-efficacy	Affection		.075	.156	-.156*		-.171*	-.169*	-.173*		.074	.117	.102
	Daily system organization		.056	.069	.070		.144*	.145*	.144*		-.002	.004	.003
	Discipline		-.261**	-.257**	-.235**		-.338**	-.338**	-.336**		-.395**	-.393**	-.390**
	Game		-.128	-.119	-.112		-.118	-.117	-.111		-.076	-.071	-.049
	Education		-.150	-.173*	-.174*		-.129	-.129	-.134		-.216*	-.229*	-.248*
Parenting alliance inventory				-.335**	-.340**			-.006	-.008			-.179*	-.184*
General	Age (year)				-.122*				-.018				-.048
	Childcare facility				-.077				.023				.109*
R ²		.138	.269	.332	.356	.209	.483	.463	.460	.078	.354	.372	.384
Adj R ²		.125	.245	.307	.327	.198	.465	.463	.460	.064	.333	.349	.356
F		10.917	10.974	13.283	12.195	18.062	27.797	24.926	20.673	5.7413	16.330	15.820	13.746
p		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001

DISCUSSION

Based on Kemp's ecological theory, this study identified the factors affecting health and parenting stress of mothers with infant and young children by applying parenting self-efficacy to microsystem, parenting alliance inventory to mesosystem,

and social support to exosystem.

Among the sub-factors of parental distress, it was found that health and parenting stress was a significant factor in parenting self-efficacy and parenting alliance inventory, while parent-child dysfunctional interaction was a significant factor in parenting self-efficacy. Also, difficult child was a

significant factor in parenting self-efficacy, parenting alliance inventory, and social support. The explanatory power of each sub-factor in the parenting stress was 46.0% for parent-child dysfunctional interaction, 38.4% for a difficult child, and 35.6% for health and parenting stress.

Health and parenting stress was identified as a significant influencing factor in the parenting alliance inventory, discipline efficacy, education efficacy, affection efficacy, and age and among these, parenting alliance inventory was identified as a factor with the biggest effect. The lower the parenting alliance inventory, the higher health and parenting stress. Such results supported the findings reported in the study of Joo (4). If parenting alliance inventory is not provided, the mother's parenting time became longer, resulting in increased mother's physical and mental burden, which in turn increases health and parenting stress with negative emotional support about health and parenting stress. Also, it is necessary to create a social environment that encourages participation in childcaring besides husbands. Although the recent policies and systems intend to balance work and life in the community, there is the atmosphere that is still reluctant men from participating in family life. Thus, change in the perception of the members of the society should be given priority. Next, it was found that health and parenting stress got increased when discipline efficacy decreased. These results supported the findings of Rebecca et al (11). Discipline efficacy refers to the emotions that parents feel when they correct their children's behavior. Mothers with an infant and young child complain of difficulties in correcting their children's behavior, and their health and parenting stress may increase as they feel lack of ability as a caregiver, doubt or feel anger and guilt about their role of health and parenting stress(11). In addition, the study supported the research results of Jeong (24). Mothers provide a variety of information to their child because they want her to know a lot about the world. However, it is difficult to communicate with infant and young children, and they tend to their child's emotion only through his/her behavior. Therefore, Health and parenting stress increases in the educating process as they accept their child's behavior negatively or experience frustration about their educational method not appropriate for their child. For this reason, it is necessary to understand the communication method that can properly guide infant and young children and guide them with the correct view of health and parenting stress. Finally, as affective efficacy increased, health and parenting stress decreased as a consequence. It supported the research results of Kim (12). Affection efficacy refers to a child's feeling or perception about the love by their parents. Parents may feel pleased as a caregiver when they can express their affection or understand their child's feelings, but if the child cannot feel the love from his/her parents no matter how much effort and time the parents have devoted mothers tend to complain of difficulties in the process of parenting, which may increase health and parenting stress. Therefore, it is necessary to understand the behavior of infant and young children so that their various expressions of

affection and reactions may be easily understood. Regarding general characteristics, health and parenting stress was high when the age was low. These results supported the research results of Choi (8). Young mothers lack knowledge and experience in raising children and have a sense of restraint during child rearing due to the burden of having to raise their children well, which in turn can increase health and parenting stress. Accordingly, the mothers in their 20s had higher health and parenting stress than mothers in their 40s in this study. Compared to mothers in their 40s, mothers in their 20s may experience relatively higher health and parenting stress due to lack of parenting knowledge and direct or indirect parenting experience through relatives and acquaintances.

Parent-child dysfunctional interaction was confirmed to have a large effect in the following factors, arranged in order: discipline efficacy, affective efficacy, and daily system organization efficacy. As discipline efficacy increased, parent-child dysfunctional interaction increased, and such result supported the research results of Xu et al (25). Discipline efficacy refers to all behaviors that lead to desirable growth and development and intend to control or change the behavior of an immature child. If interaction between a mother and child is difficult, the child's emotions cannot be identified in the discipline process and conflict between parents and children gets increased, leading to health and parenting stress. Therefore, it is necessary to provide mothers with the correct discipline method to overcome the difficulties in the discipline situation. Next, parent-child dysfunctional interaction increased when affection efficacy decreased. It supports the research results of Kim (12). If a mother fails to interact well with her child, health and parenting stress may increase, thinking that she does not understand her child well and lacks the ability as a caregiver (18). As the daily system organization efficacy increased, parent-child dysfunctional interaction increased. It supported the research results of Hong (26). Daily system organization efficacy refers to the lifestyle such as sleep and eating habits. Since Infant and young children are inexperienced in their ability to sleep and eat on their own, so it can be said that this is a training process for forming parents' lifestyles. Parents provide continuous and repetitive guidance in daily life to help their child form positive lifestyles. However, it takes a long time and is not easy to form child's lifestyle, and parents may find it difficult to guide their children.

The factors affecting the health and parenting stress of mothers raising a difficult child were confirmed to have an effect on discipline efficacy, physical support, education efficacy, parenting alliance, and use of a childcare facility in order. When discipline efficacy, which had the greatest effect on health and parenting stress, got decreased, health and parenting stress of the mothers raising a difficult child increased. These results supported the research results of Lee (27). A difficult child has a sensitive temperament, so the mother experiences limitations in parenting, which reduce the motivation for parenting and increase health and parenting stress. In the process of raising a child, it may be helpful to

set disciplinary goals according to the child's temperamental characteristics and tendencies. Next, health and parenting stress of the mothers raising a difficult child decreased when physical support that had a significant effect on a difficult child increased. It supported the research results of Lee (27). Difficult children are provided with physical resources, but the child still has no change in annoying or aggressive behavior. It is possible to confirm that the target person who is meaningful to the infant and young child is the mother. Therefore, it is necessary to provide a way to reduce the stress of the mother, as it leads to emotional fluctuations of the mother and leads to stress of health and care. As educational efficacy decreased, health and parenting stress of the mother's raising a difficult child increased. It supported the research results of Ha (28). The mothers want to explain about various and new environments to their child and try to educate the child from appropriate level through various ways; however, the difficult child responds sensitively to the new environment, so caregivers complain about difficulties in education. Considering that parenting self-efficacy increases when caregivers are knowledgeable on their child's emotional support development, and they can respond sensitively and efficiently to their child's development, it is necessary to guide the mothers on the emotional development of infants and young children. As the parenting alliance inventory decreased, the health and parenting stress of the mothers raising a difficult child increased. It supported the research results of Park, Kim and Ahn (10). In the case of a child who is frequently naughty or experience emotional ups and downs, the mother and child have to be together for a long time, and it causes the mothers to experience physical burden on housework and raising the child while undergoing emotional difficulties. In this process, the mother experiences pressure on child rearing if the husband does not cooperate, and the health and parenting stress increases. The mothers raising a difficult child who did not use a childcare facility had higher health and parenting stress. It supported the research results of Lee (27). The health and parenting stress of the mothers raising a difficult child decreased when their child used a childcare facility. This result showed that caregivers can temporarily escape from the parenting environment by using a childcare facility, and it can lower health and parenting stress caused by parenting pressure and a sense of guilt about their parenting. Therefore, it is necessary to guide a childcare facility and promote emotional support to caregivers by diversifying childcare facilities, in consideration and understanding of child's temperament and tendency. In addition, it is expected to help relieve health and parenting stress of the mothers raising an infant and young child if childcare facility workers can have expertise on difficult children and form emotional rapport with parent.

This study identified health and parenting stress of the mothers of an infant and young child based on Kemp's ecological theory, and the results obtained are summarized in the following. The parental stress perceived by the mothers of infant and young children was resolved by the

microsystem, parent-child dysfunctional interaction was resolved by the microsystem and mesosystem, and difficult child was resolved through the microsystem, mesosystem, and exosystem. In other words, it is advised to implement an effective coping plan by understanding the type of health and parenting stress experienced among the mothers and applying an appropriate solution accordingly.

Although this study has identified specific factors affecting health and parenting stress in the mothers with infant and young children as microsystem, mesosystem, and exosystem, the health and parenting stress of the mothers was identified only in the specific age of the children. In addition, it did not reflect the different types of family such as single-parent families. Therefore, it is necessary to understand the health and parenting stress of the mothers with children from various age groups in future and is also recommended to conduct a study on health and parenting stress with a focus on caregivers from various family types.

CONCLUSIONS

This study examined health and parenting stress of the mothers with an infants and young children from the Kemp's model and the results are as follows. Age, childcare facility were significant in parental distress among health and parenting stress according to general characteristics.

In parenting distress, the parental self-efficacy, husband's alliance inventory and social support was negatively correlated. The parenting distress with an infants or young children can be relieved through the microsystem whereas the parent-child dysfunctional interaction can be relieved through the microsystem and mesosystem. Also, the health and parenting stress caused by raising a demanding infant and young children can be relieved through the microsystem, mesosystem, and exosystem. It seems that health and parenting stress relieving methods depending on the types of health and parenting stress of mothers would be an effective coping method. This study has the advantage of identifying specific factors affecting health and parenting stress of the mothers with an infants and young children from microsystem, mesosystem, and exosystem, it is limited as the health and parenting stress was assessed only targeting specific ages of the child and diverse types of families such as single-parent family were not reflected. Therefore, it is necessary to identify the health and parenting stress with a focus on caregivers of various family types.

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