

[Japan] CRNA Collaborative Research for Exploring Factors Nurturing Happy and Resilient Children among Asian Countries: Country report of Japan

Introduction

The impact of the COVID-19 pandemic has spread worldwide, and it has affected the lives of people of all ages to a considerable extent. The COVID-19 pandemic has presented a huge challenge for us who are aiming for a society where each child can reach his/her full potential in a safe and secure living environment.

The purpose of this study is to identify the impact of the COVID-19 pandemic on resilience which is recently attracting attention among the attributes concerning the safety and security of children, as well as identifying the appropriate environment which is connected to improving the resilience of children, and furthermore, identifying the relationship between QOL (quality of life), an indicator of how children feel about the safety and security of their lives and their degree of happiness, and resilience.

The reason for choosing 5-year-olds and 7-year-olds as the study subjects this time is to examine the difference between childcare which is centered around play and school education which is conducted mainly in an educational environment in addition to the difference between the chronological ages by focusing on preschool children who attend daycare centers and kindergartens, and school children who attend elementary schools.

Prior to reporting the questionnaire-based survey, Part I gives an overview of ECEC and school education in Japan, followed by Part II reporting the survey results (country report) with 5-year-olds and 7-year-olds as the study subjects in Japan on the issues that were confirmed in discussion with researchers and educators in 8 Asian countries.

Part I Actual situation and issues at daycare centers, kindergartens and elementary schools during the COVID-19 pandemic in Japan

1-1. Daycare centers in COVID-19 pandemic-situations in Japan

In February 2022, Japan is undergoing the sixth wave of the pandemic with 777 facilities temporarily closed as of February 3, more than four times as that at the prior peak time. Therefore, the survey results of the sixth wave are expected to be different from previous ones. The paper gives an overview of the situation of Japan from August to November 2021 when this survey was conducted, around the peak time and before the fifth wave which hit Japan in August to September 2021 based on the topics pointed out in reports of various survey results that have been published so far (Japan Private Nursery School Association 2020; 2021, National Association Identified KODOMOEN 2020, Japan Liaison Committee for Public Health Nurses and Nurses in Daycare Centers 2020; Association for Children's Environment, 2020, etc.).

As mentioned before, numerous facilities are temporarily closed due to this sixth wave. In addition, parents are asked to voluntarily refrain from taking their children to the daycare centers/kindergartens in various places. Under the previous declaration of a state of emergency, requests were made asking parents for voluntary restriction by the administration in various areas. Childcare facilities came up with new procedures to accommodate the situation. The following shows some of the examples:

(1) Measures to support parents

According to the Survey by Japan Private Nursery School Association "Survey concerning COVID-19 No.2 – Looking Back on the First Wave of the Infection Period" (http://www.zenshihoren.or.jp/pdf/tyousa_20200728.pdf), support measures taken by facilities for the families who voluntarily kept their children at home from March to May 2020 included, in the order of measures most frequently taken, "checking the situation with the voluntarily refraining families by telephone calls/emails (73.3%), providing information such as "information from the facilities (paper-based)" (69.4%), "information from the facilities (website) (32.2%), "information from the facilities (app)" (32.2%), and "implementing assistance service by phone calls" (22.5%), etc.," all intending support for the mental health of parents. Various surveys indicate an increasing necessity for supporting parents and increased feeling of work burden by the early childhood care and education practitioners to accommodate such support under the COVID-19 pandemic. It can be seen that expanding such support was implemented by facilities to support the families.

In fact, various surveys state that more staff became aware of cooperation with parents under the COVID-19 pandemic, resulting in measures for common understanding and a

sense of unity. Actual cooperation became more diverse and enriched. There have been numerous reports of successful cases where the parent-caregiver relationship improved.

(2) Measures concerning childcare contents

A lot of facilities modified their education and care methods under the COVID-19 pandemic. In daily childcare, there have been modifications to group childcare scenes, seating arrangements, and increased activities in smaller groups., etc. Numerous facilities installed acrylic panels at mealtimes as well as restricting conversation. On the other hand, they were not so keen to enforce mask wearing or restrict physical contact .

As for activities and educational contents at childcare settings, most of the facilities guaranteed play and daily life activities as they always had, while almost half of the facilities suspended childcare activities outside the facility and parent-teacher meetings. Group activities commemorating children's growth such as initiation ceremony, graduation ceremony, and birthday parties were held with modifications such as reducing the events to a smaller scale, a shorter time, fewer programs and/or dividing the events. ICT use also increased. 12.3% of facilities provided video materials, 4.2% of facilities used online contact with children, and 1.7% of facilities used online contact with parents.

According to reports, teachers are revising their daily childcare, shifting to a more child-oriented childcare by reviewing and reducing events, increased opportunity of contacting individual child due to staggered attendance and activities in smaller groups, etc., under the COVID-19 pandemic. Children's well-being has surely been promoted even in the difficult times through the effort of implementing various measures in the field of childcare.

(3) Measures for improving workload

Various surveys revealed deepening workload stress in both mental and physical aspects under the COVID-19 pandemic. In fact, it is practitioners who take precautionary measures to prevent infection in addition to regular childcare. Furthermore, there was a serious problem of staff shortage when infection or close contact was found at a facility. There has been an increase in the workload of health management and hygiene management of children and practitioners, disinfection and other work. For example, in the survey by National Childcare Council and National Childcare Caregivers Council (2020) conducted in September and October 2020, it was reported "Numerous reports of increased workload on caregivers and staff shortage due to preparation for divided activities and new measures".

Under such circumstances, teachers have made efforts to improve the workload by using ICT measures, etc. use. The Japan Private Nursery School Association (2021) asked about feelings for the effect of COVID-19 infection prevention measures. For example, positive answers for "effective" and "somewhat effective" on "training through the use of e-Learning/teleworking technology", etc. scored 42.1% and 34.1% respectively, "building

information network with the administration” 27.8% and 35.2% respectively, and “information from the facilities to families using Internet” 26.3% and 31.9% respectively.

In various surveys, there have been data of decreased training opportunities. However, we can see positive evaluation stating more flexibility in training hours and individualized training, or no need for moving time to training facilities thanks to the introduction of new tele-training measures.

(4) Summary

It can be said that we are faced with ambivalent issues under the COVID-19 pandemic. That is to say, we are faced with various issues of guaranteeing social infrastructure, ensuring the safety of children (life-saving), guaranteeing child development (keeping the facility available), and so on. In addition, we are faced with the issue of “who is responsible for decision making” in response to an unprecedented situation without data to depend on. Furthermore, we need to discuss other issues of how we can reflect the response of children to such decisions or whether such decisions can be based on the viewpoint of children.

As for the issues under the COVID-19 pandemic, measures are boldly taken in response to 1) issues of mental health of practitioners and parents, 2) issues of information literacy, 3) issues of guaranteeing early childhood education as guaranteeing the human rights of children and guaranteeing its quality. For 1), issues of child abuse and poverty are becoming more serious, but there has been enrichment in individual assistance and ICT use, etc. For 2), there has been discussion on unifying compartmentalized administration and pluralistic information dispatch to one centered children, and administrative reform has just started. For 3), awareness of guaranteeing human rights of children who grow with others in human relations as well as guaranteeing experience of nature and various cultures has expanded, and the development can be seen in various implementation measures. There have been cases in the field to review the education in infancy and early childhood that should be truly respected and to review the events and expand child-oriented childcare, using the pandemic as an opportunity.

Under the COVID-19 pandemic, various measures have been taken by trial and error. In reality, there has been increased cooperation with families, more unification in the childcare system, strengthening connection among practitioners in the facility as well as in the community, and reviewing childcare method and contents from the basics of childcare. We consider that the resilience of a lot of practitioners is demonstrated in the valiant fight against the COVID-19 pandemic in Japan.

(Sachiko Kitano)

1-2. Well-being and resilience in education and childcare at preschool education and childcare facilities in Japan

There are three types of preschool education and childcare facilities in Japan; kindergarten (3- to 6-year-olds), daycare center (0- to 6-year-olds), and certified ECEC center (0- to 6-year-olds). Guidelines are established by the national government for each of these three types of preschool education and childcare facilities; "kindergarten course of study" for kindergartens, "nursery school guidelines" for daycare centers, and "kindergarten-daycare collaboration type certified ECEC center education course of study" for ECEC centers. A lot of kindergartens, daycare centers, and certified ECEC centers are private facilities, therefore they are not bound by these guidelines to the letter, though the general framework of the guidelines are observed. Accordingly, educational policies of the facilities vary. The following list of characteristics in consideration for well-being and resilience for mainly 5-year-olds, study subjects, at Japanese facilities are complied with on the premises of various exceptions.

- (1) Education and childcare for preschool children (3- to 5-year-olds) are mainly focused on educating abilities and characters whose development is optimal during early childhood. Preschool education is not a preparation for elementary school. Generally speaking, preparation for basic learning at elementary school does not begin until the children are enrolled in classes for 5-year-olds, especially in the latter half of the year, when linkage with elementary school is emphasized.
- (2) Therefore, respecting and facilitating the spontaneity and autonomy of children is an important point of early childhood education.
- (3) The key of education is education through play. In the national Kindergarten Course of Study, play is described as one of the most important points of kindergarten education. Educators construct elements of education that nurture thinking and judgement skills as well as building relationships with others in their autonomous play.
- (4) It means providing educational environment focused on play. Educational elements with which children can develop themselves are incorporated in the environment, or in all the aspects of their lives, instead of direct teaching and instruction by adults.
- (5) Peer relationships such as cooperation and mutual assistance are emphasized. In addition to cooperative and helping activities set by the educators, building a mutual trust among children is promoted through cooperation and mutual assistance in their lives.
- (6) As for education contents, activities in the nature are important. Beyond using natural materials such as water, soil, sand and wood in the educational activities, the experience of children being involved with nature with their whole body is stimulated, for instance, going out into natural surroundings (woods, fields, etc.), growing plants, taking care of

animals, etc.

- (7) It may be characteristic of Japanese facilities to have a lot of events. Sharing a friendly atmosphere with peers, children of different ages and adults in seasonal events helps in building good relationships with others, along with passing down the culture in seasonal traditional events. Field day, exhibitions, and concerts are places of sharing with peers and families the results of children's effort making in goal-oriented activities.
- (8) Food education has been recently valued especially at daycare centers, certified ECEC centers and kindergartens where meals are provided. The interest of children in health and safe eating habits is developed by means of various activities including awareness for natural and safe food, interest in ingredients, understanding the growing process of vegetables from cultivation to the table, and growing vegetables themselves.
- (9) Family support by daycare centers and certified ECEC centers is becoming an important role of early childhood education and care in recent years. In addition, more and more facilities recognize parental cooperation in education as a means of joint participation with the facilities based on the parents' further understanding of education, not becoming mere helpers at the facilities. Parent's Day and a one-day teacher experience are examples of such family participations.

(Miwako Hoshi)

2. Elementary School Education in Japan

The Japanese educational system has been systemized since the Meiji era (1868-1912). Above all, the elementary school system was set up nationwide in the early stage. The free education system in elementary schools was established in 1900, and by 1904, the elementary school enrollment rate reached 97% for both boys and girls. In 1907, the years of schooling were extended from 4 years to 6 years. As is seen here, for more than 100 years, school attendance has been fully established in Japan with regard to elementary school. Post-World War II educational reforms mandated three years of junior high school (lower secondary education) in addition to six years of elementary school. Including high school of upper secondary education, the 6-3-3 system is the basis of primary and secondary education in Japan.

The “self-contained class” has been the standard instruction mode in elementary schools in Japan from the Meiji era to the present day. While some subjects are taught by specialized teachers, such as music, elementary school teachers basically teach all subjects from first to sixth grade. Table 1 is the list of subjects stipulated in the Course of Study for Elementary Schools revised in 2017.

Table 1 Subjects in elementary schools in Japan

Lower grades (1 & 2)	Middle grades (3 & 4)	Higher grades (5 & 6)
Japanese Language	Japanese Language	Japanese Language
Arithmetic	Arithmetic	Arithmetic
Living Environment Studies	Social Studies	Social Studies
Music	Science	Science
Art and Handicraft	Music	Music
Life Studies	Art and Handicraft	Art and Handicraft
Physical Education	Physical Education	Physical Education
Moral Education	Moral Education	Home Economics
Special Activities	Foreign Language Activities	Foreign Language
	Period for Integrated Studies	Moral Education
	Special Activities	Period for Integrated Studies
		Special Activities

With the exception of some practical subjects, textbooks are used in the classroom. Only textbooks that have been authorized by the Ministry of Education are used. In addition, according to the textbook selection system, there is one textbook per subject in each district.

Therefore, teachers have very limited decision-making authority over teaching materials. In Japan, teachers are expected to do more than just teaching subjects. They are actually responsible for an extremely wide range of tasks, such as classroom management to improve the relationship of the entire class, student guidance for individuals and groups, division of school affairs within the school, dealing with parents, and cooperation with the local community.. This situation has been going on for a long time. This situation has continued for a long time, but with the Central Council for Education's report on reforming work styles in schools being issued in 2019, a review of their duties is currently under discussion.

(Toshitaka Fukami)

Part II Country Report

1. Survey subjects and method

In Japan, the survey was carried out in both paper forms and online for mothers of 5-year-olds enrolled in kindergarten/daycare center or 7-year-olds attending elementary school. The questionnaire survey forms were distributed with the cooperation of 17 kindergartens/daycare centers. For the online survey, Google Form was used to make the questionnaire survey. The URL was distributed to elementary schools and kindergartens/daycare centers, asking for cooperation.

Table 2 shows the numbers of obtained responses. When asked if their residential area was currently under lockdown due to COVID-19, over 80% of mothers of 5-year-olds and those of 7-year-olds answered “no” at the time of the survey in Japan. When asked about their COVID-19 vaccination status, over 70% of mothers of 5-year-olds and those of 7-year-olds responded “yes (vaccinated)”.

- Method of the survey: Questionnaire survey (paper/online)
For the paper survey, questionnaire survey forms were distributed to interested parties and cooperation requested in Tokyo Metropolis, Kanagawa prefecture, Saitama prefecture and Okinawa prefecture.
For the online survey, the URL was distributed to interested parties and asked cooperation requested in Aichi prefecture, Hyogo prefecture, Shimane prefecture and Okayama prefecture.
- Period: August – November 2021
- Subjects: Mothers of 5-year-olds who are enrolled in kindergarten/daycare center, or mothers of 7-year-olds who attend elementary school
- Responses: 246 mothers of 5-year-olds (Male 111, Female 135) 114 mothers of 7-year-olds (Male 58, Female 55)

Table 2 Survey respondents/basic attributes

		Five years old		Seven years old	
		246		114	
		n	%	n	%
sex	Male	111	45.1	58	50.9
	Female	135	54.9	55	48.2
	No answer	0	0.0	1	0.9
Situation of lockdown	Yes	23	9.3	22	19.3
	No	219	89.0	92	80.7
	No answer	4	1.6	0	0.0
Vaccination status	Yes	192	78.0	83	72.8
	No	52	21.1	31	27.2
	No answer	2	0.8	0	0.0

2. Conclusion and discussion

In this 8-country questionnaire survey, questions on 21 items of various factors (variables) besides attributes of the mothers and children are included (Table 2-1-1). These variables were decided after a discussion at the CRNA board meeting. QOL is the abbreviation for quality of life, almost synonymous with happiness. Various QOL indicators are developed to measure happiness, and the KINDL questionnaire developed in Germany was used to measure QOL in this survey.

Table 2-1-1

Q1 Situation of COVID-19, mothers' awareness and concerns about COVID-19

Q2 Basic data of subject child

Q3 Current facility/school attendance

Q4 Situation of childcare/education

Q5 Academic performance

Q6 Subject child's resilience

Q7 Child's happiness (QOL)

Q8 Mothers' parenting attitude

Q9 Subject child's actual usage of digital media

Q10 Parental involvement when subject child uses digital media

- Q11 Changes in mothers' discomfort in children's ICT usage from pre- to post-COVID-19
- Q12 Child's way of spending time daily: Play, digital media usage, etc.
- Q13 Child's way of spending time daily: Enrichment classes, etc.
- Q14 Changes in time length from pre- to post-COVID-19: Play, digital media usage
- Q15 Child's play situation
- Q16 Mothers' childrearing perceptions
- Q17 Mothers' emphasized aspects in childrearing
- Q18 Splitting household chores with spouse
- Q19 Spouse's relationship with subject child, marital relationship
- Q20 Mothers' level of satisfaction in daily life
- Q21 Basic information on household, childrearing support

In this section, Child's happiness (QOL) (Q7) or Subject child's resilience (Q6) are used as outcome variables, and exploratory analysis was conducted on the relationship with the following independent variables (factors) that have a high probability of a relationship with them using statistical methods of variance analysis, correlation analysis and regression analysis, etc. Subjected factors are the following, among the 21 factors in Table 2-1-1.

- Q1 Situation of COVID-19, mothers' awareness and concerns about COVID-19
- Q4 Mothers' impression of support from childcare facilities/schools
- Q5 Academic performance of subject child (7-year-olds)
- Q8 Mothers' parenting attitude
- Q16 Mothers' childrearing perceptions
- Q17 Mothers' emphasized aspects in childrearing
- Q19 Splitting household chores with spouse (childrearing support, mental support)
- Q20 Mothers' level of satisfaction in daily life

Some of the factors can be converted to synthetic variables by adding or averaging the scores of each question (Q6: Resilience), but others require exploratory factor analysis and reliability analysis (Cronbach α) for proper conversion to synthetic variables.

The following synthetic variables were produced by factor analysis and reliability analysis to be analyzed.

Q6: Resilience (CYRM-R-PMK) All are added without processing

Or personal resilience (adding or averaging items 1,2,3,7,10,12,13 and 14) and parents/guardian resilience (adding or averaging items 4,5,6,8,11,15 and 17)

Q7: QOL: Adding QOL in four fields; mental QOL, sense of self respect, QOL of friendship,

and QOL in family relations

Q8 Mothers' parenting attitude

Responsive parenting attitude (adding items 1 - 7) and punitive parenting attitude (adding items 8 - 10: reversed items)

Q16 Mothers' childrearing perceptions

Factorizing to valid factors unavailable. Each question item is used alone.

Q17 Mothers' emphasized aspects in childrearing

Socioemotional skill (adding or averaging items 3,5,6 and 7) and other diverse skills (adding or averaging items 2,8 and 10 - 15)

Q19 Splitting household chores with spouse

Childrearing support (adding or averaging items 1 - 4), mental support (adding or averaging items 5 - 9).

Besides these synthetic variables, some other synthetic variables were produced as needed for analysis. Details will be explained in each analysis section.

(1) Variance analysis (analysis of average)

First, the difference in average values depending on the attributes of the subjects and respondents for QOL and resilience. Scores were compared depending on the ages (5-year-olds, 7-year-olds) and sexes (*t*-test). 7-year-olds tended to score higher than 5-year-olds in both QOL and resilience, but without significant difference. As for difference in sexes, similarly, girls tended to score higher than boys in both QOL and resilience but without significant difference (Table 2-1-2).

Table 2-1-2

	5-year-olds	7-year-olds	Significance probability <i>p</i>	Male	Female	Significance probability <i>p</i>
QOL	65.85	65.85	.799	64.53	67.05	.523

The same analyses were conducted in 8 countries (5-year-olds) and 6 countries (7-year-olds) for reference. No significant difference was found in age comparison for QOL and resilience, while significant differences (QOL: $p=.044$, Resilience: $p=.000$) were noted as Female > Male. The difference in statistical analysis accuracy due to the difference in the numbers of subjects (Japan: 5-year-olds 246, 7-year-olds 114, 8(6) countries: 1,973 (1,372), the numbers of valid response vary depending on analysis contents) may have been reflected in the results.

Next, the average values of QOL and resilience were compared according to the household income (yearly income). The mode of household income of the subject families was from 6 million yen and above to less than 8 million yen. The average value was used to divide the household income into low group and high group, and the average values of QOL and resilience were calculated to find no significant difference in QOL and resilience depending on the household income (QOL: $p=.718$, Resilience: $p=.970$).

QOL and resilience according to the mother's educational background were analyzed. The mode was graduating from a 4-year college ($n=171$), and the median was graduating from a 2-year college. Analysis was done with graduating from a 2-year college or more as a higher group and less education as a lower group. Similar to the case of household income, no significant difference was noted in either QOL or resilience according to the mother's educational background (QOL: $p=.706$, Resilience: $p=.762$.)

In order to observe the impact on QOL and resilience on children resulting from the COVID-19 pandemic, the important viewpoint in this survey, a synthetic variable of sense of security was produced from awareness and concerns about COVID-19 (Q1-4) and the level of satisfaction to the measures the country/region has taken against the COVID-19 pandemic (Q1-3), and difference in the average values of QOL and the resilience of children in higher and lower groups was tested. As is shown in Table 2-1-3, the higher security group tended to score higher in both QOL and resilience than they did in the lower security group, but without significant statistical difference.

A significant positive correlation ($r=.190$, $p=.000$) is recognized between a sense of security and satisfaction, also a positive correlation is recognized between a sense of security and vaccination ($r=.157$, $p=.003$).

Table 2-1-3 High and low sense of security under COVID-19 pandemic, scores of QOL and resilience

	Lower security group	Higher security group	Significance probability p
QOL	65.83	67.00	.427
Resilience	69.94	70.95	.253

The same test was conducted in all 8 countries, and a significant difference was noted in resilience (Higher security group > Lower security group) ($p=.000$). Next, the impact of the numbers of siblings and birth order on QOL and resilience of children was examined using a one-way analysis of variance. A significant difference was noted in the number of siblings (Figure 2-1-1) in QOL, while no significant difference in resilience (QOL $p=.005$, Resilience $p=.248$).

No significant difference in QOL and resilience scores was noted according to birth order (QOL: $p=.285$, Resilience $p=.994$).

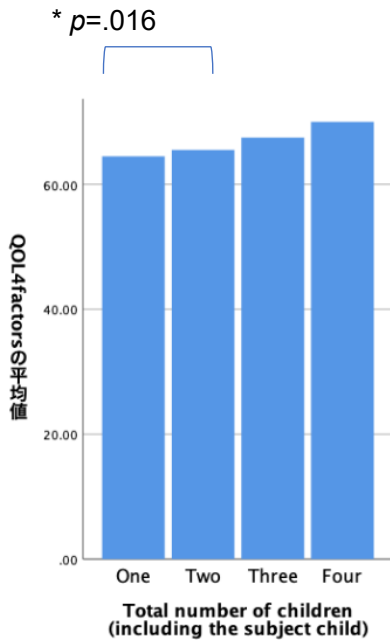


Figure 2-1-1 Number of siblings and QOL (No statistically significant difference was found in 4 due to the few number of samples. $p=.073$)

(2) Correlation

Prior to exploring factors prescribing QOL and the resilience of today's children, one of the main aims of this research, an exploratory analysis of factors correlating with QOL and resilience was conducted. In this section, correlation with mothers' parenting attitude (Q8), mothers' childrearing perceptions (Q16), mothers' emphasized aspects in childrearing (Q17), splitting household chores with spouse (Q19) as micro-environment advocated in an ecological system model of Bronfenbrenner was examined, and the correlation with situation of childcare/education (Q4) as mezzo (middle) environment was examined. A comparison of average values was used for impact of macro-environment instead of correlation, as mentioned in the previous section. Also, the correlation with ICT related variables which hold important positions in today's childrearing environment will be given in another section.

Figure 2-1-2-1(1: 5-year-olds, 2: 7-year-olds) shows the correlation between QOL, resilience and the factors of the above-mentioned child development environment or childrearing environment. A significant relationship is shown in the solid lines between the factors. The numbers on the lines indicate the correlation coefficient (r). The significance probability p was .000 in all the correlations.

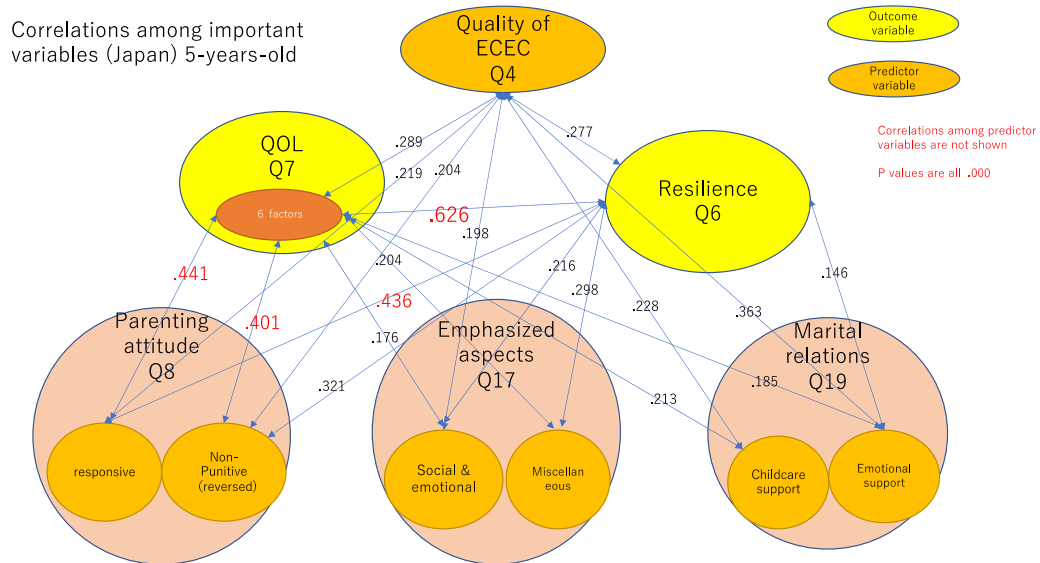


Figure 2-1-2-1 Correlation among important variables, 5-year-olds

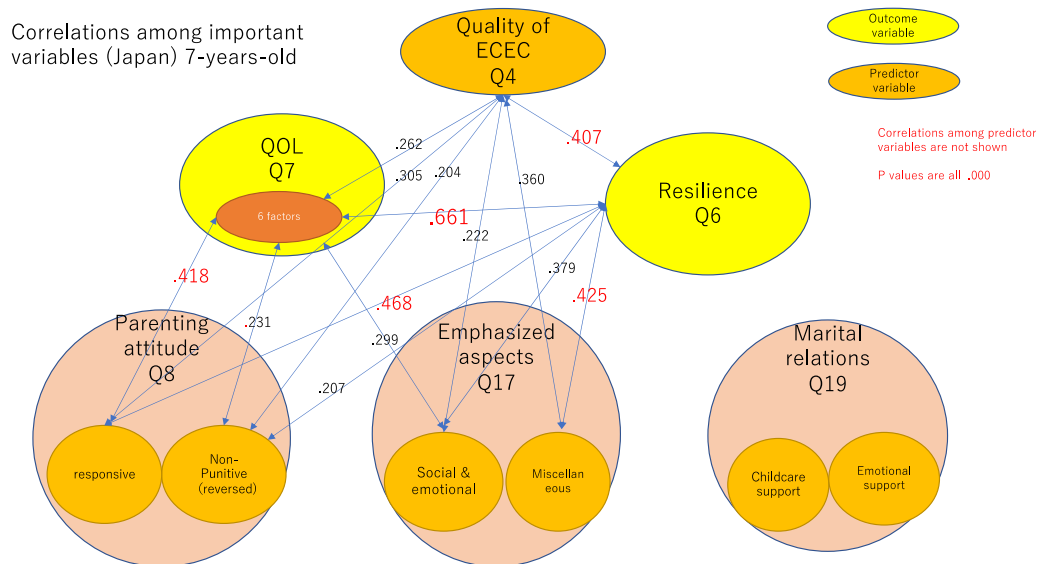


Figure 2-1-2-2 Correlation among important variables, 7-year-olds

Here are some characteristic findings, though Figure 2-1-2 is self-explanatory.

First, a middle to rather strong positive correlation was noted between QOL and resilience, regardless of ages. A middle positive correlation was noted between QOL,

resilience, and a responsive parenting attitude. A weak positive correlation was noted between factors besides childrearing assistance by spouses for 7-year olds and QOL, resilience. There was no difference besides the above-mentioned correlation of marital relations (childrearing assistance by spouses) for 5-year-olds and 7-year-olds.

The significance of each will be summarized later in discussion.

Mother’s level of satisfaction in daily life was not really the focus of this research. Therefore, the correlation with other variables was explored separately. A weak correlation with various variables was noted, as is shown in Figure 2-1-3.

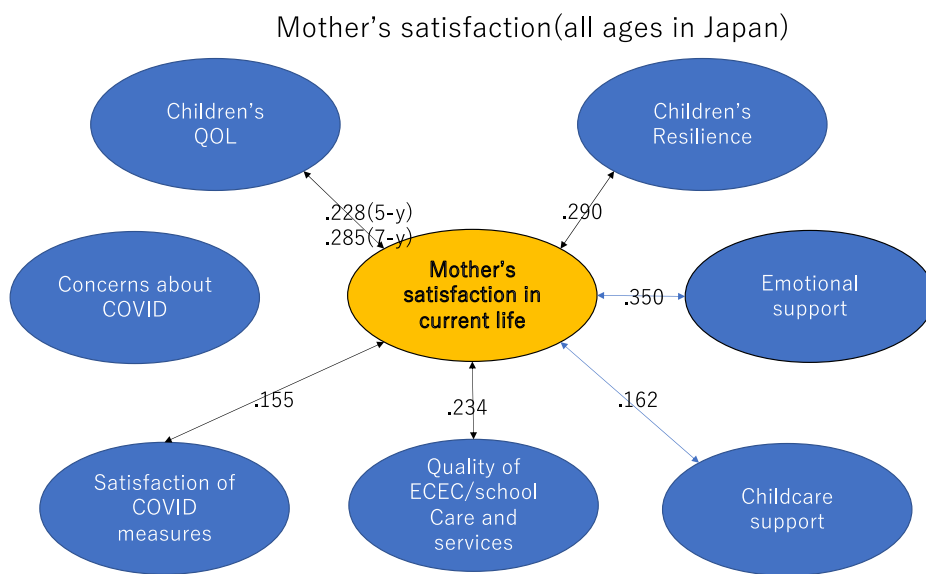


Figure 2-1-3 Childrearing environmental factors correlated with mothers’ level of satisfaction in daily life

(3) Multiple regression analysis

Multiple regression analysis was conducted with the resilience of children as outcome variables, based on the correlations in the previous section.

No major difference was found in correlations between 5-year-olds and 7-year-olds. The difference was noted in the outcome of multiple regression analysis with stepwise method, as is shown in Figure 2-1-4-1 and Figure 2-1-4-2.

Predictors for Resilience 5-years-old in Japan

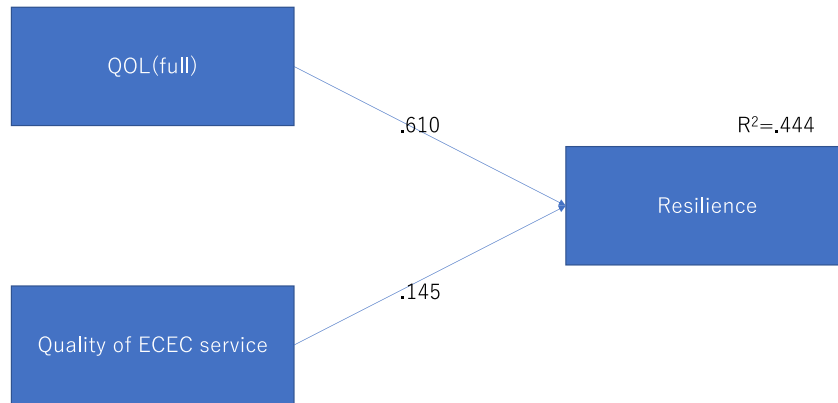


Figure 2-1-4-1 Outcome of multiple regression analysis with resilience of 5-year-olds as outcome variables

Significance was found in QOL and mother's level of satisfaction with the quality of childcare at facilities as a factor to explain resilience.

Predictors for Resilience 7-years-old in Japan



Figure 2-1-4-2 Outcome of multiple regression analysis with resilience of 7-year olds as outcome variables

This figure shows correlation with mother's evaluation for education at school and level of satisfaction in current life besides QOL as significant environmental factors for resilience for 7-year-olds.

(4) Discussion

In this section, quantitative analysis was conducted on the relation between QOL, the resilience of children under the COVID-19 pandemic and various factors concerning various attributes of children and their mothers, childrearing, childcare/education environment.

No statistically significant difference was observed in QOL and resilience of children due to mothers' concerns about COVID-19, maybe because the survey was held when the fifth wave of COVID-19 was winding down and the second vaccination for the whole nation was approaching completion. However, a significant negative correlation was observed between anxiety about COVID-19 and the resilience of children in all 8 Asian countries. It is possible that no significant impact as the one found in the analysis of the whole 8 countries was detected because the subject number was small in Japan, around 350.

Previous studies confirmed that the educational background of mothers and household income (yearly income) are essential confounding factors among factors concerning development environment of children. In this research, the educational background of mothers and household income were divided into a low group and a high group to observe the difference between the groups, but no significant difference was found.

Among the family environment, the number of siblings and birth orders are important confounding factors. The impact of the number of siblings and birth orders on QOL and resilience of children was examined with one-way analysis of variance to reveal no significant difference in birth order. A significant difference was noted in QOL between an only child and three brothers ($3 > 1$). Further examination is necessary for to reveal its significance.

No difference was noted between QOL and resilience of various attributes. Correlation analysis between childrearing environment, childcare/educational environment, and QOL, resilience found a quite strong positive correlation with such variables. A middle to strong positive correlation was noted especially between QOL, resilience, and a responsive parenting attitude. Also the indication of a middle level significant correlation between engagement and support in childcare/education at facilities and schools, and QOL and resilience of children confirms the important of childcare/educational facilities in childrearing.

Multiple regression analysis was conducted on factors showing significant correlation with resilience as explanatory variables. Slightly different models were built depending on the ages. In both ages, QOL was proved to be a significant explanatory variable for resilience. For 5-year-olds, a responsive parenting attitude and quality of ECEC were the explanatory

variables for resilience, while the important items in parental childrearing were that of children for 7-year-olds.

The analysis in this section is a quantitative analysis to find correlation among synthetic variables. It is expected to produce useful information for childrearing by revealing more concrete items to improve QOL and resilience of children through analyzing the relationship between individual items in each synthetic variable and QOL, resilience.

(Yoichi Sakakihara)

2-2. Resilience and QOL of children in Japan

(1) Comparison of average values

This section examines factors concerning the QOL and resilience of children. Table 2-2-1 and Table 2-2-2 respectively confirmed the results of the difference in the average of resilience indicators and QOL indicators in the 5-year-olds group and 7-year-olds group.

Table 2-2-1 shows that the 7-year-olds group scored significantly higher than the 5-year-olds group in the following three items of 2) [My child believes getting an education or doing well in school is important to him/her], 3) [My child knows how to behave/act in different situations (like school, home, church or mosque)], 17) [My child likes the way his/her family/caregiver(s) celebrates things (like holidays or learning about their culture)] ($p < 0.01$). Item 2) and item 17) show stronger educational aspects, which explains the higher score for 7-year-olds. As for item 3), the reason may be because children are more likely to be expected to appropriately behave/act in different situations after they start elementary school.

Table 2-2-2 shows that the 7-year-olds group scored significantly higher than the 5-year-olds group in 24) [My child made lots of mistakes when doing minor assignments or homework (5-year-olds) / My child was afraid of bad marks or grades (7-year-olds)] ($p < 0.001$), and that the 7-year-olds group scored significantly higher than the 5-year-olds group in 14) [My child felt fine at home] ($p < 0.05$). On the other hand, the 5-year-olds group scored significantly higher than the 7-year-olds group in 23) [My child looked forward to nursery school/kindergarten (5-year-olds) / My child worried about his/her future (7-year-olds)] ($p < 0.001$), 17) [My child played with friends (5-year-olds) / My child did things together with friends (7-year-olds)] ($p < 0.01$), and 2) [My child had a headache or tummy-ache] and 22) [My child enjoyed the nursery school/ kindergarten (5-year-olds) / My child enjoyed the school lessons (7-year-olds)] ($p < 0.05$). Item 23) scored quite low compared with other items, showing that kindergarten/daycare center is a place where children enjoy going to, but elementary school is not. However, the 5-year-olds group scored significantly higher in item 22), leading to the result that children enjoy the lessons themselves. The result for item 24) scoring higher than the 5-year-olds group is considered reasonable because the grade for

each subject is evaluated in elementary school unlike kindergarten/daycare center, etc. Similarly, item 17) and 22) showed higher scores because a kindergarten/daycare center is a place centered around play. In relation to that, it is considered that parents feel children live comfortably at home from the outcome of academic performances at school. As for item 2), it is considered that 5-year-olds can describe their physical condition to their parents more easily.

We can say despite the differences in the above items, the resilience indicators and QOL indicators indicate that in general there are no significant differences between the 5- and 7-year-olds. However, a more pronounced difference may be observed in the upper grades of elementary school, where more emphasis is placed on academic aspects and troubles of interpersonal relationships among children arise.

Table 2-2-1 Difference in resilience indicators between 5-year-olds and 7-year-olds

	5-year-olds (n=246)	SD	7-year-olds (n=114)	SD	t value	Degrees of freedom	p value	
[CYRM] My child cooperates/shares with people around them	3.646	0.965	3.719	0.888	-0.684	358.000	0.494	
[CYRM] My child believes getting an education or doing well in school is important to them	3.535	0.985	3.851	0.933	-2.877	357.000	0.004	**
[CYRM] My child knows how to behave/act in different situations (like school, home, church or mosque)	3.362	0.901	3.690	0.835	-3.282	357.000	0.001	**
[CYRM] My child has a parent(s)/caregiver(s) who knows where they are and what they are doing most of the time	4.527	0.733	4.649	0.479	-1.890	318.192	0.060	
[CYRM] My child has a parent(s)/caregiver(s) who knows a lot about them (for example what makes them happy, scared, sad)	4.455	0.727	4.474	0.583	-0.242	356.000	0.809	
[CYRM] My child has enough to eat at their home when they are hungry	4.694	0.614	4.781	0.436	-1.532	299.485	0.126	
[CYRM] My child is fun to be with or that others like to play with them	3.972	0.928	3.912	0.868	0.575	358.000	0.565	
[CYRM] My child talks to their family/caregiver(s) about how they feel	4.135	0.885	4.132	0.735	0.041	262.198	0.967	
[CYRM] My child feels supported by their friends	3.494	1.003	3.675	0.926	-1.636	357.000	0.103	
[CYRM] My child feels they fit in at their school	3.955	0.959	4.044	0.733	-0.964	281.797	0.336	
[CYRM] My child has a family/caregiver who cares about them when times are hard (for example if they are sick or have done something wrong)	4.657	0.625	4.711	0.528	-0.791	357.000	0.430	
[CYRM] My child has friends who care about them when times are hard (for example if they are sick or have done something wrong)	3.721	0.941	3.798	0.914	-0.727	356.000	0.467	
[CYRM] My child is treated fairly	4.209	0.727	4.158	0.748	0.614	356.000	0.539	
[CYRM] My child is given chances to show others that he/she is growing up and can do things by himself/herself	4.171	0.898	4.123	0.832	0.489	357.000	0.625	
[CYRM] My child feels safe when he/she is with his/her family/caregiver(s)	4.709	0.553	4.781	0.456	-1.292	263.677	0.198	
[CYRM] My child has chances to learn things that will be useful when he/she is older (like cooking, working, and helping others)	3.865	0.993	4.000	0.912	-1.266	238.416	0.207	
[CYRM] My child likes the way his/her family/caregiver(s) celebrates things (like holidays or learning about their culture)	4.154	0.982	4.404	0.688	-2.773	302.705	0.006	**

** $p < 0.01$

Table 2-2-2 Difference in QOL indicators between 5-year-olds and 7-year-olds

	5-year-olds (n=246)	SD	7-year-olds (n=114)	SD	t value	Degrees of freedom	P value	
[KINDL QOL]My child felt ill	4.825	0.467	4.816	0.632	0.158	358.000	0.874	
[KINDL QOL]My child had a headache or tummy-ache	4.724	0.636	4.509	0.790	2.546	183.545	0.012	**
[KINDL QOL]My child was tired and worn-out	4.541	0.661	4.491	0.682	0.653	358.000	0.514	
[KINDL QOL]My child felt strong and full of energy	4.402	0.643	4.351	0.638	0.710	358.000	0.478	
[KINDL QOL]My child had fun and laughed a lot	4.429	0.607	4.386	0.572	0.630	357.000	0.529	
[KINDL QOL]My child didn't feel much like doing anything	4.447	0.690	4.474	0.755	-0.329	358.000	0.742	
[KINDL QOL]My child felt alone	4.510	0.669	4.614	0.659	-1.376	357.000	0.170	
[KINDL QOL]My child felt scared or unsure of him-/ herself	4.581	0.688	4.596	0.688	-0.195	358.000	0.846	
[KINDL QOL]My child was proud of him-/herself	3.756	0.791	3.754	0.759	0.019	358.000	0.985	
[KINDL QOL]My child felt on top of the world	3.854	0.736	3.904	0.716	-0.603	358.000	0.547	
[KINDL QOL]My child felt pleased with him-/ herself	3.980	0.694	3.930	0.648	0.645	356.000	0.520	
[KINDL QOL]My child had lots of good ideas	4.033	0.736	3.921	0.742	1.334	356.000	0.183	
[KINDL QOL]My child got on well with us as parents	4.296	0.563	4.377	0.522	-1.295	355.000	0.196	
[KINDL QOL]My child felt fine at home	4.366	0.584	4.500	0.536	-2.071	355.000	0.039	*
[KINDL QOL]We quarrelled at home	3.514	0.845	3.614	0.782	-1.064	355.000	0.288	
[KINDL QOL]My child felt that I was bossing him/ her around	3.702	0.917	3.711	0.784	-0.085	255.742	0.932	
[KINDL QOL]My child played with friends(5 years old)/My child did things together with friends(7 years old)	3.880	0.993	3.584	1.006	2.606	353.000	0.010	**
[KINDL QOL]My child was liked by other kids	4.070	0.649	4.000	0.638	0.955	355.000	0.340	
[KINDL QOL]My child got along well with his/ her friends	4.223	0.663	4.237	0.628	-0.185	354.000	0.853	
[KINDL QOL]My child felt different from other children	4.299	0.743	4.372	0.684	-0.883	352.000	0.378	
[KINDL QOL]My child coped well with the assignments set in nursery school/ kindergarten (5 years old)/My child easily coped with schoolwork(7 years old)	3.975	0.713	4.124	0.734	-1.814	352.000	0.070	
[KINDL QOL]My child enjoyed the nursery school/ kindergarten(5 years old)/My child enjoyed the school lessons(7 years old)	4.490	0.606	4.307	0.680	2.547	353.000	0.011	*
[KINDL QOL]My child looked forward to nursery school/kindergarten(5 years old)/My child worried about his/her future(7 years old)	4.349	0.697	1.447	0.730	36.053	353.000	0.000	***
[KINDL QOL]My child made lots of mistakes when doing minor assignments or homework(5 years old)/My child was afraid of bad marks or grades(7 years old)	3.974	0.835	4.447	0.718	-5.177	342.000	0.000	***

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

2) Difference of resilience and QOL according to academic performance

As previously mentioned, we were able to confirm that learning in elementary school may have an impact on resilience and QOL, though the difference was negligible. The items of parents' response on academic performance of children were extracted, divided into two groups of below-average group (1 poor – 3 average) and high group (4 good, 5 excellent), and confirmed the difference of average of resilience and QOL. The result is shown in Table 2-2-3 and Table 2-2-4.

Table 2-2-3 shows the high group scored significantly higher than below-average group in resilience indicators in 2) [My child believes getting an education or doing well in school is important to him/her], 9) [My child feels supported by his/her friends] ($p < 0.01$). It is considered that in the high group, they value learning at school more, and the sense of support by peers is stronger because learning is at the center of school life. In general, however, it can be said that there is no significant difference between the below-average group and the high group.

On the other hand, Table 2-2-4 shows that differences were observed in several items for QOL indicators. The high group scored significantly higher than the below average group in 9) [My child was proud of him-/herself], 10) [My child felt on top of the world], 21) [My child coped well with the assignments set in nursery school/ kindergarten (5-year-olds) / My child easily coped with schoolwork (7-year-olds)] ($p < 0.01$), and 6) [My child didn't feel much like doing anything], 11) [My child felt pleased with him-/ herself], 12) [My child had lots of good ideas] ($p < 0.05$) by 5%. All of these are related to positive behavior toward learning and self-esteem, and it can be said that academic performance affects QOL in school.

Table 2-2-3 Difference in resilience indicators according to academic performance

	Below average group (n=70)	SD	High group (n=41)	SD	t value	Degrees of freedom	p value	
[CYRM]My child cooperates/shares with people around them	3.600	0.841	3.854	0.937	-1.429	76.743	0.157	
[CYRM]My child believes getting an education or doing well in school is important to them	3.686	0.941	4.122	0.872	-2.421	109.000	0.017	**
[CYRM]My child knows how to behave/act in different situations (like school, home, church or mosque)	3.657	0.832	3.750	0.870	-0.554	108.000	0.581	
[CYRM]My child has a parent(s)/caregiver(s) who knows where they are and what they are doing most of the time	4.643	0.483	4.659	0.480	-0.166	109.000	0.869	
[CYRM]My child has a parent(s)/caregiver(s) who knows a lot about them (for example what makes them happy, scared, sad)	4.400	0.575	4.610	0.586	-1.842	109.000	0.068	
[CYRM]My child has enough to eat at their home when they are hungry	4.729	0.479	4.854	0.358	-1.563	102.560	0.121	
[CYRM]My child is fun to be with or that others like to play with them	3.786	0.931	4.098	0.735	-1.951	99.532	0.054	
[CYRM]My child talks to their family/caregiver(s) about how they feel	4.057	0.740	4.195	0.715	-0.352	109.000	0.726	
[CYRM]My child feels supported by their friends	3.643	0.948	3.707	0.901	-2.317	109.000	0.022	**
[CYRM]My child feels they fit in at their school	3.914	0.775	4.244	0.624	-0.964	281.797	0.336	
[CYRM]My child has a family/caregiver who cares about them when times are hard (for example if they are sick or have done something wrong)	4.700	0.521	4.707	0.559	-0.070	109.000	0.945	
[CYRM]My child has friends who care about them when times are hard (for example if they are sick or have done something wrong)	3.771	0.935	3.805	0.901	-0.184	109.000	0.854	
[CYRM]My child is treated fairly	4.086	0.756	4.220	0.725	-0.913	109.000	0.363	
[CYRM]My child is given chances to show others that he/she is growing up and can do things by himself/herself	4.029	0.900	4.244	0.699	-1.316	109.000	0.191	
[CYRM]My child feels safe when he/she is with his/her family/caregiver(s)	4.771	0.456	4.780	0.475	-0.099	109.000	0.921	
[CYRM]My child has chances to learn things that will be useful when he/she is older (like cooking, working, and helping others)	3.914	0.959	4.146	0.823	-1.294	109.000	0.198	
[CYRM]My child likes the way his/her family/caregiver(s) celebrates things (like holidays or learning about their culture)	4.457	0.630	4.317	0.789	1.029	109.000	0.306	

****p<0.01**

Table 2-2-4 Difference in QOL indicators according to academic performance

	Below average group (n=70)	SD	High group (n=41)	SD	t value	Degrees of freedom	p value
[KINDL QOL]My child felt ill	4.757	0.770	4.902	0.300	-1.407	98.113	0.163
[KINDL QOL]My child had a headache or tummy-ache	4.457	0.863	4.585	0.670	-0.873	100.496	0.385
[KINDL QOL]My child was tired and worn-out	4.443	0.735	4.561	0.594	-0.875	109.000	0.384
[KINDL QOL]My child felt strong and full of energy	4.257	0.695	4.488	0.506	-1.854	109.000	0.066
[KINDL QOL]My child had fun and laughed a lot	4.300	0.574	4.512	0.553	-1.906	109.000	0.059
[KINDL QOL]My child didn't feel much like doing anything	4.357	0.762	4.659	0.728	-2.044	109.000	0.043 *
[KINDL QOL]My child felt alone	4.543	0.736	4.732	0.501	-1.604	106.425	0.112
[KINDL QOL]My child felt scared or unsure of him-/ herself	4.514	0.775	4.707	0.512	-1.577	107.347	0.118
[KINDL QOL]My child was proud of him-/herself	3.614	0.804	4.000	0.632	-2.799	99.740	0.006 **
[KINDL QOL]My child felt on top of the world	3.757	0.770	4.146	0.573	-2.812	109.000	0.006 **
[KINDL QOL]My child felt pleased with him-/ herself	3.829	0.659	4.098	0.625	-2.116	109.000	0.037 *
[KINDL QOL]My child had lots of good ideas	3.786	0.700	4.122	0.781	-2.340	109.000	0.021 *
[KINDL QOL]My child got on well with us as parents	4.357	0.512	4.390	0.542	-0.322	109.000	0.748
[KINDL QOL]My child felt fine at home	4.457	0.557	4.537	0.505	-0.751	109.000	0.454
[KINDL QOL]We quarrelled at home	3.571	0.809	3.683	0.756	-0.718	109.000	0.474
[KINDL QOL]My child felt that I was bossing him/ her around	3.714	0.801	3.659	0.762	0.360	109.000	0.719
[KINDL QOL]My child played with friends(5 years old)/My child did things together with friends(7 years old)	3.529	1.059	3.575	0.874	-0.235	108.000	0.815
[KINDL QOL]My child was liked by other kids	3.929	0.621	4.049	0.631	-0.978	109.000	0.330
[KINDL QOL]My child got along well with his/ her friends	4.186	0.644	4.268	0.593	-0.671	109.000	0.853
[KINDL QOL]My child felt different from other children	4.329	0.737	4.425	0.594	-0.706	108.000	0.481
[KINDL QOL]My child coped well with the assignments set in nursery school/ kindergarten (5 years old)/My child easily coped with schoolwork(7 years old)	3.957	0.695	4.366	0.733	-2.886	80.610	0.005 **
[KINDL QOL]My child enjoyed the nursery school/ kindergarten(5 years old)/My child enjoyed the school lessons(7 years old)	4.229	0.726	4.415	0.591	-1.393	109.000	0.167
[KINDL QOL]My child looked forward to nursery school/kindergarten(5 years old)/My child worried about his/her future(7 years old)	1.514	0.775	1.366	0.662	1.026	109.000	0.307
[KINDL QOL]My child made lots of mistakes when doing minor assignments or homework(5 years old)/My child was afraid of bad marks or grades(7 years old)	4.400	0.750	4.512	0.675	-0.789	109.000	0.432

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

(Toshitaka Fukami)

2-3. Relationship between the resilience of children and mothers' childrearing perceptions/parenting attitude (examination for 5-year-olds)

This survey indicates a strong correlation between the resilience of children and parenting attitude/childrearing perceptions of parents (0.436). The survey data is analyzed aiming at finding the actual condition and nature of parental childrearing in children who have low resilience. The statistical analysis will be explained in other parts of this report. This section aims for a descriptive analysis of the relationship between mothers' parenting attitude and the childrearing perceptions and resilience of children.

(1) Outline of the relationships between the resilience of children and answers for Q8, Q16, Q20s5 and Q1s4

1) Method

- 1) For the resilience of children (personal resilience: Q6s1, 2, 3, 7, 9, 10, 12, 13, 14, and 16); the total score (9-50) of these 10 sub-questions of Q6 for all the respondents (246 mothers of 5-year-olds children) were used to differentiate the high resilience group (H group, total score of 38 or more, 62 mothers) from the low group (L group, total score of 30 or less, 63 mothers).
- 2) For mothers' childrearing: Q8 questions (10 items) for parenting attitude, Q16 questions (6 items) for childrearing perceptions, and Q20s5 for level of satisfaction for overall daily life were used as subjects. Also, Q1s4, item for concerns about the further spread of COVID-19 was included. As for the answers for Q8, Q16, and Q20s5, 4 or 5 indicates most affirmative (very much so / strongly agree, for questions of positive attitude, not at all / strongly disagree, for negative questions) with 1 indicating most negative.
- 3) Examination of the relationships between L group and H group children and childrearing items of mothers: Average values of total answer scores for Q8 (mothers' parenting attitude), Q16 (mothers' childrearing perceptions), Q20s5 (mothers' level of satisfaction in daily life), Q1s4 (mothers' concerns about the further spread of COVID-19) for each of L group and H group of resilience of children were calculated (total answer values/number of respondents excluding those with no answers). The higher the average value, the better the attitude and/or more affirmative thinking is seen. The difference between the average values of each of L group and H group and the average values of all the responses (excluding "no answer") is calculated.

2) Results

As is shown in Table 1, A: average value of all the respondents, L: average value of L group, H: average value of H group. Positive values indicate above the total average value (affirmative), negative values indicate below (negative).

Table 2-3-1: Mothers' childrearing attitude/perception vs children's resilience in high and low cohorts

	L-A	H-A	Difference between L and H
Q20s5 I am satisfied with my overall life.	-0.97	0.31	1.28
Q8s1 I talk to my child in a warm and gentle manner.	-0.12	0.23	0.35
Q8s2 We have physical contact.	-0.22	0.19	0.41
Q8s3 I respond to my child's needs.	-0.13	0.16	0.29
Q8s4 I am proud when my child does something well.	-0.12	0.12	0.24
Q8s5 When my child is about to do something, I don't interfere and watch them through to the end (except when it's dangerous).	-0.20	0.12	0.32
Q8s6 I provide an environment where my child can work on what he/she wants to do.	-0.19	0.21	0.40
Q8s7 I provide opportunities for playing and experiencing things that expand my child's interests.	-0.18	0.27	0.45
Q8s8 I let my emotions get the best of me when disciplining my child.	-0.11	0.18	0.29
Q8s9 If my child makes a mistake, I become very critical of him/her.	-0.11	0.22	0.33
Q8s10 I hit my child when he/she doesn't listen to me.	-0.29	0.21	0.50
Q16s1 I feel I overstrain myself trying to be a good parent.	-0.03	0.11	0.14
Q16s2 I feel my child has grown fairly well.	-0.36	0.23	0.59
Q16s3 I think childrearing is an enjoyable and happy role.	-0.19	0.22	0.41
Q16s4 So long as my child is brought up with affection, parents do not have to be with him/her all the time.	-0.08	-0.02	-0.06
Q16s5 I will get as much support as possible when rearing my child.	-0.03	0.14	0.17
Q16s6 I am concerned whether my child is inferior to other children.	-0.18	0.08	0.26
Q1s4 Are you concerned about the further spread of COVID-19?	-0.01	-0.11	0.10

The results show that the L group scored lower than the total average values in all the questions, responding more negatively. On the contrary, the H group answered positively, higher than the average values in all the questions except Q16s4 (So long as my child is brought up with affection, parents do not have to be with him/her all the time). Among the question items, Q20 s5 (I am satisfied with my overall life) showed the biggest difference between L group and H group among positive questions (though it was not statistically significant), followed by Q16s2 (I feel my child has grown fairly well), Q8s10 (I hit my child when he/she doesn't listen to me), Q8s7 (I provide opportunities for playing and experiencing things that expand my child's interests), Q8s2 (We have physical contact), and Q16s3 (I think childrearing is enjoyable and a happy role).

(2) Further detailed examination

Further detailed examination was conducted on the answers of the L group and the H group of resilience of children to some of the questions

1) Question items with a large difference between the L group and the H group of resilience of children

(a) Q20s5 (I am satisfied with my overall life):

Though there were very few who were not at all satisfied with their current life, the difference between the L group and the H group was considerable. 80% were satisfied in the H group, while half answered "somewhat disagree" in the L group. We can see there is a relationship between the parents who are satisfied with life and the resilience of children besides satisfaction in childrearing.

Answer category	All the respondents	Respondents Low	Respondents High
5 (Strongly agree)	29	6	10
4	120	24	39
3	50	14	6
2	34	15	5
1 (Strongly disagree)	11	1	2

(b) Q16s2 (I feel my child has grown fairly well):

It is clear that the L group showed numerous responses of negative category 2, while the H group showed numerous affirmative responses of 3, 4. In the L group, there are two possibilities: one is that parents think children with low resilience are not growing well. The other is that anxiety of parents if the children are growing well affects the resilience of children. Overall, it can be assumed that there is some relationship between

the feeling of parents for the growth of children and the resilience of children.

Answer category	All the respondents	Respondents Low	Respondents High
4 (Very much so)	25	2	13
3	162	30	40
2	53	27	9
1 (Not at all)	6	4	0

(c) Q8s10 (I hit my child when he/she doesn't listen to me):

Though most respondents did not agree with hitting, the L group showed more 3 (Somewhat disagree) than 4 (Strongly disagree), indicating unstable feelings of parents who sometimes hit their children or were almost tempted to hit, etc.

Answer category	All the respondents	Respondents Low	Respondents High
4 (Strongly disagree)	141	23	45
3	84	30	16
2	18	8	1
1 (Strongly agree)	2	2	0

(d) Q8s7 (I provide opportunities for playing and experiencing things that expand my child's interests):

Both groups answered category 3 (somewhat agree) most. However, in contrast to the H group that showed numerous "strongly agree" answers, the L group showed numerous "somewhat disagree" answers, indicating a slightly strong tendency to be responsive to interests of children and to provide a suitable environment.

Answer category	All the respondents	Respondents Low	Respondents High
4 (Strongly agree)	37	2	16
3	161	45	44
2	47	16	2
1 (Strongly disagree)	0	0	0

(e) Q16s3(I think childrearing is enjoyable and a happy role):

There is a large difference between the two groups of parents who answered "very much so", feeling strong happiness in childrearing. The L group responded with "fairly so", showing their feeling that childrearing is somewhat hard work. Together with category, 2

(not so much), the situation is considered to be short of complete happiness. Together with Q16s2 (I feel my child has grown fairly well), some relationship is assumed between the resilience of children and the overall satisfaction of parents with childrearing.

Answer category	All the respondents	Respondents Low	Respondents High
4 (Very much so)	90	17	32
3	138	36	29
2	16	9	1
1 (Not at all)	1	1	0

(f) Q8s2 (We have physical contact):

There is no difference between the two groups in good amount of physical contact or intention of physical contact, but we can see more physical contact in the H group. This can be interpreted to mean that the H group has more frequent close connection regularly, or that the H group has more emotional and close interaction.

Answer category	All the respondents	Respondents Low	Respondents High
4 (Strongly agree)	110	18	39
3	130	41	22
2	4	3	1
1 (Strongly disagree)	1	1	0

2) Questions on negative aspects

The relationship between answers to negative questions and the resilience of children was examined in the following two questions:

(a) Q8s8 (I let my emotions get the best of me when disciplining my child):

A lot of the answers of all the respondents to the question were rather negative (category 2 somewhat agree), and are different from the answers to other questions of Q8. That is to say, a lot of parents may get emotional when disciplining their children, but the L group show more “strongly agree, somewhat agree (Category 1, 2)” than the H group, and fewer “strongly disagree, somewhat disagree (Category 3, 4)” than the H group. Probably the L group has more such occasions. This may be mutually related with the resilience of children.

Answer category	All the respondents	Respondents Low	Respondents High
4 (Strongly disagree)	10	1	7

3	112	27	30
2	111	31	23
1 (Strongly agree)	10	4	2

(b) Q8s9 (If my child makes a mistake, I become very critical of him/her):

The answer to this question also did not show much of a difference between the L group and the H group of resilience of children. The L group show more “somewhat agree” (Category 2), and the H group show more “strongly disagree” (Category 4). Here again, the L group show more emotional tendency of placing the blame on children.

Answer category	All the respondents	Respondents Low	Respondents High
4 (Strongly disagree)	44	8	15
3	135	35	39
2	61	17	8
1 (Strongly agree)	4	2	0

(c) On the other hand, answers to the following negative questions showed no difference between the two groups.

Q16s1(I feel I overstrain myself trying to be a good parent)

Q16s6 (I am concerned whether my child is inferior to other children)

Q1s4 (Are you concerned about the further spread of COVID-19?)

(3) Discussion

The relationship with the resilience of children was suggested in the three questions of Q20s5 (I am satisfied with my overall life), Q8 (mothers' parenting attitude), Q16s2 (I feel my child has grown fairly well), Q16s3 (I think childrearing is enjoyable and a happy role), all inferring the impact of the attitude of mothers themselves toward life and mental stability rather than how they actually deal with children. This survey is based on parental judgement on the resilience of children. Therefore, low resilience of children raises the question of resilience of children themselves, or their parents tend to look at the negative side of their children or their parents are pessimistic. In short, it is suggested that parents' stress from their daily lives and unstable feelings not only affect their children directly but also possibly affect how they regard their children. Mothers' lives outside of childrearing, for example, economic life of the family, life with spouse or other family members, or working life of mothers (which was not focused in this section) may affect the sense of fulfillment of mothers, and may possibly affect the resilience of children. Also, it was suggested that emotional

scolding or hitting when the parents were emotionally unstable negatively affect the resilience of children. Confusion or an unstable situation in the family under the COVID-19 pandemic, or higher stress for both parents and children caused by remote working may affect the resilience of children. There were no parents who were highly unstable in their mental state or children with extremely low resilience among the participants of this survey. Moreover, we should not come up with an easy conclusion with the results of this survey only. Still, there is no doubt that support is important for parents and children who are under huge stress in the current difficult and unstable social situation where we cannot foresee our future.

(Miwako Hoshi)

2-4. Examination concerning parental digital media viewing

The COVID-19 pandemic has altered the lifestyle of children. Q14 asked about changes in time length on the following items. It was found that the outside play time of children decreased, while the total viewing/use time of media at home increased. (Table 2-4-1).

- 1) Playing freely outdoors (excluding at the childcare facility, school, or enrichment classes)
- 2) Playing freely indoors (excluding at the childcare facility, school or enrichment classes)
- 3) Total time of using/watching digital devices at home (TV/DVD/tablet/smartphone, etc.)

Table 2-4-1 Changes in time length due to impact of COVID-19 pandemic

			Five years old		Seven years old	
			246		114	
			n	%	n	%
q14s1	[Changes in time length of activities]Playing freely outdoors (excluding at the childcare facility, school, or enrichment classes)	1 Increased	20	8.1	9	7.9
		2 Has not changed	112	45.5	49	43.0
		3 Decreased	114	46.3	56	49.1
q14s2	[Changes in time length of activities]Playing freely indoors (excluding at the childcare facility, school or enrichment classes)	1 Increased	125	50.8	66	57.9
		2 Has not changed	111	45.1	39	34.2
		3 Decreased	10	4.1	8	7.0
q14s3	[Changes in time length of activities]Total time of using/watching digital devices at home (TV/DVD/tablet/smartphone, etc.)	1 Increased	136	55.3	68	59.6
		2 Has not changed	109	44.3	45	39.5
		3 Decreased	1	0.4	1	0.9

(1) Categorizing subjects according to factors of parental digital media viewing

In this section, “Q10 Parental involvement when subject child uses digital media” represents the parental perception of digital media viewing. Scores of each question items (dependent variables) were compared with parental digital media viewing (cluster) as attributes (independent variables). The question items are (Q9) subject child’s actual usage of digital media, (Q6) subject child’s resilience, (Q7) child’s happiness (QOL), (Q8) mothers’ parenting attitude, (Q16) mothers’ childrearing perceptions, and (Q17) mothers’ emphasized aspects in childrearing.

First, factor analysis was conducted on question items of Q10 digital media viewing. Two factors were extracted for each of the 5-year-olds data and the 7-year-olds data (Table 2-4-2, Table 2-4-3). Factor 1 is “encouraging children to use ICT”, and Factor 2 is “active assistance when children are using ICT”.

Table 2-4-2: Factors of parental perception of digital media viewing (5-year-olds)

items		F1	F2	Commonalities
<i>rq10s4</i>	I talk to my child in line with the content my child is using/watching.	.695	.068	.549
<i>rq10s3</i>	I keep an eye on my child when he/she is using/watching it.	.550	.085	.370
<i>rq10s2</i>	Parents choose what he/she watches/uses.	.530	-.200	.183
<i>rq10s5</i>	I watch/use together with my child.	.524	.108	.360
<i>rq10s8</i>	I support my child so that he/she can do difficult activities.	-.146	.716	.398
<i>rq10s7</i>	I research together when something he/she does not know comes up.	.058	.714	.567
Factor contribution		1.798	1.636	
		<i>M</i>	<i>SD</i>	<i>α</i>
Factor1	Parental involvement when subject child uses ICT	2.86	0.53	.654
Factor2	Active assistance when children are using ICT	2.81	0.64	.630

Table 2-4-3:-Factors of parental perception of digital media viewing (7-year-olds)

items		F1	F2	Commonalities
<i>rq10s5</i>	I watch/use together with my child.	.859	-.091	.751
<i>rq10s4</i>	I talk to my child in line with the content my child is using/watching.	.760	-.065	.480
<i>rq10s2</i>	Parents choose what he/she watches/uses.	.540	.167	.439
<i>rq10s3</i>	I keep an eye on my child when he/she is using/watching it.	.493	.179	.321
<i>rq10s8</i>	I support my child so that he/she can do difficult activities.	-.038	.703	.500
<i>rq10s7</i>	I research together when something he/she does not know comes up.	.045	.664	.443
Factor contribution		2.180	1.561	
		<i>M</i>	<i>SD</i>	<i>α</i>
Factor1	Parental involvement when subject child uses ICT	2.99	0.61	.772
Factor2	Active assistance when children are using ICT	3.16	0.64	.640

Next, cluster analysis was used to divide the subjects by the type according to the characteristics of the two factors. Three clusters (groups) were derived by the analysis (Figure 2-4-1, Figure 2-4-2).

- Factor 1 Parental involvement when the subject child uses ICT : Cluster 1>2>3
- Factor 2 Active assistance when children are using ICT : Cluster 1>2>3
(standardized score)

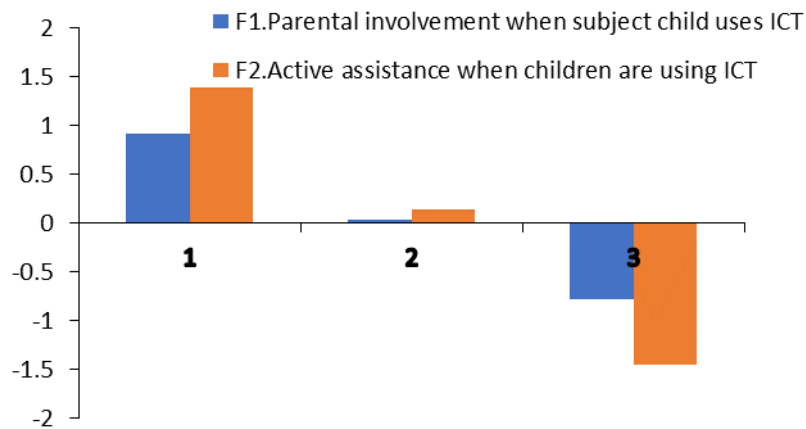


Figure 2-4-1: Division of subjects by the type using cluster analysis (5-year-olds)
(standardized score)

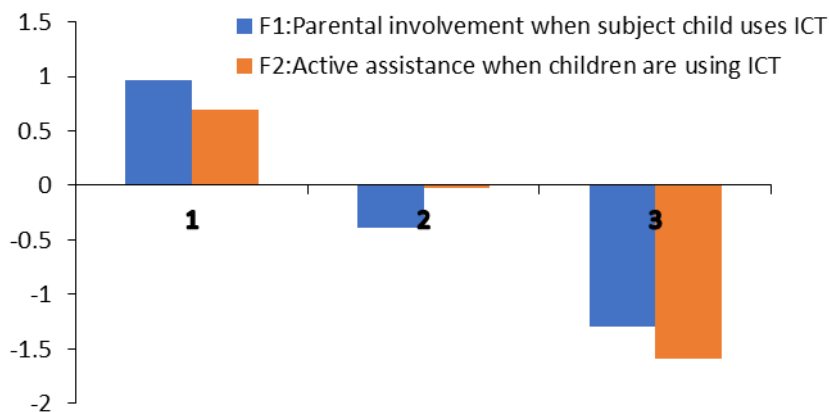


Figure 2-4-2: Division of subjects by type using cluster analysis (7-year-olds)

The following is the breakdown of number of the people in the clusters (Table 2-4-3, Table 2-4-4)

Table 2-4-3: Factors of parental digital media viewing (5-year-olds)

Cluster	N	Cluster title	Characteristics
1	36	High encouragement group	High level of awareness to encourage children to use ICT
2	155	Average group	Middle level of awareness to encourage children to use ICT
3	49	Low encouragement group	Low level of awareness to encourage children to use ICT

Table 2-4-4: Factors of parental digital media viewing (7-year-olds)

Cluster	N	Cluster title	Characteristics
1	4 5	High encouragement group	High level of awareness to encourage children to use ICT
2	4 9	Average group	Middle level of awareness to encourage children to use ICT
3	1 9	Low encouragement group	Low level of awareness to encourage children to use ICT

(2) Results of each question item in each group of digital media viewing

Cluster analysis was conducted on the awareness of engagement when children used/watched digital media to derive three groups; high awareness, average awareness, and a low awareness group of engagement. Here, analysis of variance is conducted on the average values of answers in the three groups in each of the following question items; (Q9) subject child's actual usage of digital media, (Q6) subject child's resilience, (Q7) child's happiness (QOL), (Q8) mothers' parenting attitude, (Q16) mothers' childrearing perceptions and (Q17) mothers' emphasized aspects in childrearing.

First, among the answers to (Q9) subject child's actual usage of digital media, some question items showed a significant difference in average values per group (Table 2-4-5, Table 2-4-6). There were nine items for 5-year-olds, and 10 items for 7-year-olds. In both age groups, the high awareness group of engagement scored high in items concerning studying, such as in "3) plays with letters and numbers", "4) reads books/picture books (including e-books)", "5) enjoys learning a foreign language", "13) does homework from the childcare facility or school", "14) does studying other than homework from the childcare facility or school" etc. Furthermore, such items that are not on study as "8) enjoys programs for physical exercise" and "11) watches the news" scored high. Among 5-year-olds, items related to knowledge building, "12) searches for information (including studying)" scored high. We should

note that among 7-years olds, average values were higher among the low awareness group of engagement in “1) watches video clips” and “9) plays games”.

Table 2-4-5: Q9 Average value in each cluster (standard deviation) (5-year-olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F			
	1.High level of awareness		2.Average group		3.Low level of awareness						
3 Plays with letters and numbers.	3.94	-0.21	3.6	-0.1	2.84	-0.18	3.46	-0.1	9.02	**	12>3
4 Reads books/picture books (including e-books).	3.94	-0.25	3.47	-0.1	3	-0.22	3.47	-0.1	3.95	*	1>3
5 Enjoys learning a foreign language.	3.18	-0.22	2.54	-0.1	2.2	-0.19	2.64	-0.1	5.81	**	1>2 1>3
8 Enjoys programs for physical exercise.	3.94	-0.22	3.22	-0.1	2.76	-0.19	3.3	-0.1	8.41	**	1>23 2>3
10 Talks on the phone, sends emails, or uses SNS.	1.88	-0.16	1.7	-0.1	1.33	-0.14	1.64	-0.1	3.76	*	1>3
11 Watches the news.	2.09	-0.19	2.01	-0.1	1.36	-0.17	1.82	-0.1	6.42	**	12>3
12 Searches for information (including studying).	2	-0.18	1.8	-0.1	1.33	-0.15	1.71	-0.1	4.84	*	12>3
13 Does homework from the facility or school.	1.97	-0.19	1.7	-0.1	1.22	-0.17	1.63	-0.1	4.86	*	12>3
14 Does studying other than homework from the childcare facility or school.	3.41	-0.23	2.65	-0.1	1.96	-0.2	2.67	-0.1	11.5	**	1>2>3

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

Table 2-4-6: Q9 Average value in each cluster (standard deviation) (7-year-olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F			
	1.High level of awareness		2.Average group		3.Low level of awareness						
1 Watches video clips.	3.09	-0.17	4.06	-0.2	4.16	-0.26	3.77	-0.1	10.2	**	23>1
3 Plays with letters and numbers.	3.58	-0.2	3.47	-0.2	2.68	-0.31	3.24	-0.1	3.17	*	1>3
4 Reads books/picture books (including e-books).	3.42	-0.24	3.78	-0.2	2.26	-0.36	3.15	-0.2	6.56	**	1>3 2>3
5 Enjoys learning a foreign language.	3.26	-0.19	3	-0.2	2	-0.29	2.75	-0.1	6.51	**	12>3
6 Draws pictures (including coloring books).	3.47	-0.22	3.35	-0.2	2.42	-0.34	3.08	-0.2	3.63	*	12>3
8 Enjoys programs for physical exercise.	3.28	-0.21	3.31	-0.2	2.16	-0.31	2.91	-0.1	5.5	**	12>3
9 Plays games.	2.72	-0.21	3.69	-0.2	3.58	-0.31	3.33	-0.1	6.48	*	3>1 2>1
11 Watches the news.	2.65	-0.19	2.27	-0.2	1.58	-0.28	2.17	-0.1	5.08	**	1>3
13 Does homework from the childcare facility or school.	3.93	-0.24	4.04	-0.2	2.84	-0.36	3.6	-0.2	4.28	*	12>3
14 Does studying other than homework from the childcare facility or school.	3.67	-0.21	3.41	-0.2	2.58	-0.31	3.22	-0.1	4.35	**	1>3

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

Next, among the answers to (Q6) subject child’s resilience, a significant difference was found in the average values per group in 10 items for 5-year-olds, and five items in 7-year-olds (Table 2-4-7, Table 2-4-8). In both ages, the high awareness group of engagement showed higher average values in the answers concerning personal attributes such as “3) My

child knows how to behave/act in different situations (like school, home, church or mosque)”, “14) My child is given chances to show others that he/she is growing up and can do things by himself/herself”, etc. In addition, the average values of answers concerning guardians were high such as “16) My child has chances to learn things that will be useful when he/she is older (like cooking, working, and helping others)”, “17) My child likes the way his/her family/caregiver(s) celebrates things (like holidays or learning about their culture)”, etc. In the 5-year-olds group, the average values of answers concerning personal attributes such as “1) My child cooperates/shares with people around him/her”, “13) My child is treated fairly” were high. Furthermore, in the 5-year-olds group, the average value of answers concerning a guardian such as “5) My child has a parent(s)/caregiver(s) who knows a lot about him/her (for example what makes him/her happy, scared, sad)”, “8) My child talks to his/her family/caregiver(s) about how he/she feels” were significantly high.

Table 2-4-7: Q6 Average value in each cluster (standard deviation) (5-year-olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F			
	1.High level of awareness		2.Average group		3.Low level of awareness						
1 My child cooperates/shares with people around him/her	4.11	-0.18	3.69	-0.1	3.41	-0.13	3.73	-0.1	5.04	**	1>3
3 My child knows how to behave/act in different situations (like school, home, church or mosque)	3.89	-0.17	3.36	-0.1	3.24	-0.13	3.5	-0.1	5	**	1>23
5 My child has a parent(s)/caregiver(s) who knows a lot about him/her (for example what makes him/her happy, scared, sad)	4.74	-0.14	4.44	-0.1	4.29	-0.11	4.49	-0.1	3.33	*	1>3
8 My child talks to his/her family/caregiver(s) about how he/she feels	4.59	-0.17	4.16	-0.1	3.9	-0.12	4.22	-0.1	5.61	**	1>2 1>3
11 My child has a family/caregiver who cares about him/her when times are hard (for example if he/she is sick or has done something wrong)	4.96	-0.11	4.63	-0.1	4.69	-0.08	4.76	-0.1	3.65	*	1>2
12 My child has friends who care about him/her when times are hard (for example if he/she is sick or has done something wrong)	4.37	-0.17	3.64	-0.1	3.69	-0.13	3.9	-0.1	7.75	**	1>23
13 My child is treated fairly	4.56	-0.13	4.15	-0.1	4.24	-0.1	4.32	-0.1	4.49	**	1>2
14 My child is given chances to show others that he/she is growing up and can do things by himself/herself	4.66	-0.15	4.11	-0.1	4.14	-0.12	4.3	-0.1	5.4	**	1>2 1>3
16 My child has chances to learn things that will be useful when he/she is older (like cooking, working, and helping others)	4.41	-0.17	3.9	-0.1	3.55	-0.14	3.95	-0.1	7.73	**	1>2>3 1>3
17 My child likes the way his/her family/caregiver(s) celebrates things (like holidays or learning about their culture)	4.53	-0.17	4.22	-0.1	3.86	-0.14	4.2	-0.1	5.19	**	1>3 2>3

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

Table 2-4-8: Q6 Average value in each cluster (standard deviation) (7-year-olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F		
	1.High level of awareness		2.Average group		3.Low level of awareness					
3 My child knows how to behave/act in different situations (like school, home, church or mosque)	4.02	-0.12	3.57	-0.11	3.22	-0.19	3.61	-0.08	7.68	* 1>2 ** 1>3
11 My child has a family/caregiver who cares about him/her when times are hard (for example if he/she is sick or has done something wrong)	4.78	-0.08	4.78	-0.07	4.33	-0.12	4.63	-0.05	5.73	** 12>3
14 My child is given chances to show others that he/she is growing up and can do things by himself/herself	4.29	-0.12	4.24	-0.01	3.44	-0.18	3.99	-0.08	8.36	** 12>3
16 My child has chances to learn things that will be useful when he/she is older (like cooking, working, and helping others)	4.16	-0.13	4.04	-0.13	3.5	-0.21	3.9	-0.09	3.5	* 1>3
17 My child likes the way his/her family/caregiver(s) celebrates things (like holidays or learning about their culture)	4.51	-0.1	4.48	-0.1	3.94	-0.16	4.31	-0.07	5.1	** 1>3 * 2>3

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

Next, among the answers to (Q7) child's happiness (QOL), a significant difference in average values per group was found in one item for 5-year-olds and four items for 7-year-olds (Table 2-4-9, Table 2-4-10). They did not share any common items. Among the 5-year-olds, the high awareness group scored higher in "12) My child had lots of good ideas" than other groups did. Among the 7-year-olds, in addition to the items "10) My child felt on top of the world", "14) My child felt fine at home", the high awareness group scored higher in two items concerning school; "21) My child easily coped with schoolwork" and "22) My child enjoyed the school lessons" than other groups did.

Table 2-4-9: Q7 Average value in each cluster (standard deviation) (5-year-olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F		
	1.High level of awareness		2.Average group		3.Low level of awareness					
12 My child had lots of good ideas	4.41	-0.14	4.02	-0.06	3.84	-0.1	4.09	-0.06	5.6	* 1>2 ** 1>3

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

Table 2-4-10: Q7 Average value in each cluster (standard deviation) (7-year-olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F		
	1.High level of awareness		2.Average group		3.Low level of awareness					
10 My child felt on top of the world	3.93	-0.11	4	-0.1	3.53	-0.16	3.82	-0.07	3.29	* 2>3
14 My child felt fine at home	4.62	-0.08	4.49	-0.07	4.21	-0.12	4.44	-0.05	3.99	* 1>3
21 My child easily coped with schoolwork	4.26	-0.11	4.18	-0.1	3.58	-0.16	4.01	-0.07	6.77	** 12>3
22 My child enjoyed the school lessons	4.45	-0.1	4.27	-0.09	3.95	-0.15	4.22	-0.07	3.83	* 1>3

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

Among the answers to (Q8) mothers' parenting attitude a significant difference in average values per (Table 2-4-11, Table 2-4-12) was found in five items for 5-year-olds, and three items for 7-year-olds. In both ages, the high awareness group of engagement scored high in "6) I provide an environment where my child can work on what he/she wants to do", "7) I provide opportunities for playing and experiencing things that expand my child's interests". Among the 5-year-olds groups, the high awareness group scored high in "2) We have physical contact", "4) I am proud when my child does something well" compared with other groups. In addition, the high awareness among the 5-year-olds groups responded negatively to "10) I hit my child when he/she doesn't listen to me", and the difference in the average value was significant between the high awareness group and one with low awareness. Among the 7-year-olds groups, the high awareness group scored higher in the item of "3) I respond to my child's needs" than the other groups did.

Table 2-4-11: Q8 Average value in each cluster (standard deviation) (5-years olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F			
	1.High level of awareness		2.Average group		3.Low level of awareness						
2 We have physical contact.	3.74	-0.09	3.35	-0.04	3.41	-0.08	3.5	-0.04	7.75	**	1>2
										*	1>3
4 I am proud when my child does something well.	3.83	-0.08	3.63	-0.04	3.55	-0.07	3.67	-0.04	3.41	*	1>3
6 I provide an environment where my child can work on what he/she wants to do.	3.34	-0.08	3.07	-0.04	2.92	-0.07	3.11	-0.04	8.27	**	1>23
										*	2>3
7 I provide opportunities for playing and experiencing things that expand my child's interests.	3.29	-0.1	2.93	-0.05	2.78	-0.08	3	-0.04	8.66	**	1>23
10 I hit my child when he/she doesn't listen to me.	3.71	-0.11	3.49	-0.05	3.35	-0.09	3.52	-0.05	3.27	*	1>3

(1: Strongly agree, 2: Somewhat agree, 3: Somewhat disagree, 4: Strongly disagree)

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

Table 2-4-12: Q8 Average value in each cluster (standard deviation) (7-year-olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F			
	1.High level of awareness		2.Average group		3.Low level of awareness						
3 I respond to my child's needs.	3.3	-0.07	3.08	-0.06	3	-0.1	3.13	-0.05	4.15	*	1>23
6 I provide an environment where my child can work on what he/she wants to do.	3.57	-0.08	3.27	-0.07	2.79	-0.12	3.21	-0.05	15.1	**	1>2>3
7 I provide opportunities for playing and experiencing things that expand my child's interests.	3.3	-0.09	3.29	-0.08	2.74	-0.13	3.11	-0.06	7.56	**	1>23

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

Among the answers to (Q16) mothers' childrearing perceptions a significant difference in average values per group (Table 2-4-13) was found in one item for 5-year-olds, and none for 7-year-olds. Among the 5-year-olds groups, the high awareness group scored high in the response to the item "3) I think childrearing is an enjoyable and happy role".

Table 2-4-13: Q16 Average value in each cluster (standard deviation) (5-year-olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F			
	1.High level of awareness		2.Average group		3.Low level of awareness						
3 I think childrearing is enjoyable and a happy role.	3.53	-0.1	3.26	-0.05	3.18	-0.09	3.32	-0.05	3.68	*	1>23

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

Among the answers to (Q17) mothers' emphasized aspects in childrearing a significant difference in average values per group (Table 2-4-14, Table 2-4-15) was found in 10 items for 5-year-olds, and eight items for 7-year-olds. In both ages, the high awareness group of engagement scored high in "4) To encourage the child to care about others", "8) To let the child interact with parents", "9) To broaden the child's interests", "10) To let the child spend time with parents", "11) Give the child opportunities for nature experience", "14) To foster the artistic talent of the child (music, painting etc.)", and "15) To help the child learn foreign languages". Among the 5-year-olds groups, the high awareness group scored higher in "5) To let the child express his/her feelings and thoughts", "7) To help the child learn numbers/letters", and "13) To help the child value tradition/culture" than other groups did, while the high awareness group scored higher in "3) To encourage basic daily habits" than others did among the 7-year-olds groups.

Table 2-4-14: Q17 Average value in each cluster (standard deviation) (5-year-olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F		
	1.High level of awareness		2.Average group		3.Low level of awareness					
4 To encourage the child to care about others	3.64	-0.08	3.5	-0.04	3.27	-0.07	3.47	-0.04	6.28	** 1>3 * 2>3
5 To let the child express his/her feelings and thoughts	3.44	-0.1	3.29	-0.05	3.04	-0.09	3.26	-0.05	5.17	** 1>3 * 2>3
7 To help the child learn numbers/letters	3	-0.11	2.74	-0.06	2.39	-0.1	2.71	-0.05	8.98	* 1>2 ** 12>3
8 To let the child interact with parents	3.47	-0.1	3.19	-0.05	2.94	-0.08	3.2	-0.04	8.99	* 1>2 ** 12>3
9 To broaden the child's interests	3.58	-0.1	3.14	-0.05	2.9	-0.09	3.21	-0.05	13.8	** 1>2>3 * 2>3
10 To let the child spend time with parents	3.39	-0.09	3.14	-0.04	2.88	-0.07	3.14	-0.04	10.1	* 1>2 ** 12>3
11 Give the child opportunities for nature experience	3.06	-0.12	2.99	-0.06	2.59	-0.1	2.88	-0.06	6.39	** 12>3
13 To help the child value tradition/culture	2.67	-0.11	2.42	-0.05	2.08	-0.09	2.39	-0.05	8.57	* 1>2 ** 12>3
14 To foster the artistic talent of the child (music, painting etc.)	2.69	-0.12	2.43	-0.06	2.22	-0.1	2.45	-0.06	4.4	* 1>3
15 To help the child learn foreign languages	2.44	-0.14	2.17	-0.07	1.82	-0.12	2.14	-0.07	6.02	** 1>3 * 2>3

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

Table 2-4-15: Q17 Average value in each cluster (standard deviation) (7-year-olds)

Items	Q10 Parental involvement when subject child uses digital media/awareness cluster						Total	F		
	1.High level of awareness		2.Average group		3.Low level of awareness					
3 To encourage basic daily habits	3.67	-0.07	3.51	-0.07	3.33	-0.12	3.5	-0.05	3.18	* 1>3
4 To encourage the child to care about others	3.76	-0.07	3.63	-0.07	3.28	-0.11	3.56	-0.05	6.87	** 1>3 * 2>3
8 To let the child interact with parents	3.6	-0.08	3.41	-0.08	2.83	-0.13	3.28	-0.06	13.3	** 12>3
9 To broaden the child's interests	3.53	-0.09	3.49	-0.09	3	-0.15	3.34	-0.07	5	** 1>3 * 2>3
10 To let the child spend time with parents	3.39	-0.09	3.14	-0.04	2.88	-0.07	3.14	-0.04	10.1	* 1>2 ** 12>3
11 Give the child opportunities for nature experience	3.62	-0.07	3.33	-0.07	2.89	-0.12	3.28	-0.05	14.3	** 1>2>3
14 To foster the artistic talent of the child (music, painting etc.)	2.98	-0.11	2.8	-0.11	2.22	-0.18	2.67	-0.08	6.47	** 1>3 * 2>3
15 To help the child learn foreign languages	2.78	-0.14	2.61	-0.14	1.94	-0.22	2.44	-0.1	5.03	** 1>3 * 2>3

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

(3) Discussion

In this section, parental digital media viewing was extracted as Factor 1 “encouraging children to use ICT” and Factor 2 “active assistance when children are using ICT”, and divided into three groups according to the parental awareness of engagement when children

are using/watching ICT; a high awareness group, an average and a low awareness group. The difference in awareness among the three groups was analyzed in how it was related to children's use of digital media, the resilience of children, the QOL of children, mothers' parenting attitude, mothers' childrearing perception, and mothers' emphasized aspects in childrearing.

There was difference in children's digital media use according to the high and low awareness of parental encouragement when children are using ICT. While making use of digital media, the high awareness groups were acting aggressively and gathering information such as enjoying programs with physical movement, watching news, etc., beyond the passive use for study. In particular, among the 7-year-olds groups, the low awareness group scored significantly high in items with concerns for long hours of use by children such as watching video and playing games. On the other hand, parents with high awareness tend to promote a rich experience for children using digital media.

Furthermore, the high and low of awareness of parental encouragement when children are using ICT was related to parenting attitude, childrearing perceptions, and emphasized aspects in childrearing.

Parents who have a high level of awareness of parental encouragement when children are using ICT were found to have a tendency of providing an environment where children could deal with what they wanted to do or preparing play and experience to expand the interests of children. In particular, among 5-year-olds groups, contact with parents was emphasized such as physical contact and sharing enjoyment. Parenting policy of "I think childrearing is an enjoyable and happy role" also scored high, though only among the 5-year-olds groups.

Moreover, as for emphasized aspects in childrearing, attention was paid to expanding interests and lots of nature contact, and awareness of enrichment of experience of children, in addition to the relationship between parents and child(ren) such as letting the child interact/spend time with parents, was also high.

The following conclusion can be inferred from these results. First, there is a difference in the children's ICT use and activities, and parental digital media viewing greatly affects the difference in how to use. Furthermore, parental digital media viewing does not concern digital media only but also it was found to be related to parenting attitude, childrearing perception and emphasized aspects in childrearing in the first place. Parents who cherish time with children, actively engaging with them, and who try to provide an enriched environment are aware of digital media in addition to the environment related to usual childrearing. Such

awareness is considered to be shown in how children use digital media and activities, and furthermore, ultimately affect the resilience and QOL of children.

In the future, we think the issue is to examine how parents can develop literacy including parental understanding and engagement of children's ICT use.

(Tomomi Sato)

3. Summary

In this report, child's resilience and QOL are used as outcome variables, quantitative and qualitative analyses were conducted between the basic attributes of children and mothers (respondents) and parenting attitude, emphasized aspects in childrearing, spousal assistance in childrearing, and childcare and educational service/support at day care centers/schools. Moreover, the correlation between parental attitude toward children's ICT use, and reliance/QOL of children, parenting attitude and childrearing perception was analyzed. In addition, the relationship between the academic performance of children and resilience/QOL of children was also analyzed for 7-year-olds.

Though we have yet to complete the whole picture of the relations among the numerous factors gained from the survey, it has become clear that factors related to the resilience and QOL of children exist in all levels of micro, meso and macro in the ecological model advocated by Bronfenbrenner. We have succeeded in confirming certain significant factors to explain the reliance of children in multiple regression analysis, though we have input only partial independent variables. In particular, we could confirm the QOL of children is an important explanatory factor for their resilience, regardless of age. We think we have found clues for making the model closer to completion by examining models with more variables.

It is expected that there is a relationship between the QOL/resilience of children and friends/play which occupies importance in their development environment. That will be a topic of further analysis. We would also like to find the characteristics of Japan and a common structure among factors in Asian countries by comparing analysis data with those of the other seven countries in Asia.

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