



# **THE WHITE PAPER ON CHILDREN'S MENTAL HEALTH**

**Commissioned by PCA Life Taiwan (PCALT)  
Executed by Fu Jen Catholic University**

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## I. Abstract

As indicated by the World Health Organization (WHO) in “The World Health Report 2001-Mental Health: New Understanding, New Hope,” mental health is defined as “subjective well-being, perceived self-efficacy, autonomy, competence, intergenerational dependence, and self-actualization of one’s intellectual and emotional potential, among others.”<sup>1</sup> Children are the foundation of a nation and its societal developments. In addition to being physically healthy, mental health is also an element that cannot be neglected. In recent years, strong emphasis on children’s mental wellness and aggressive initiatives to include mental wellness into children’s health policy is seen in various health schemes promoted by WHO and government from many countries. Children’s mental wellness is an issue that is prioritized by the government, as seen in “the Children Health Care and Policy Recommendations for 2030” published in 2019 by Child Health Research Center, National Health Research Center (NHRI). The research reveals different issues that children confront during their development, as well as current circumstances and possible strategic approaches. Childhood is a critical phase in the process of development. Children with good mental health lay the groundwork for a happier life as adults. Therefore, safeguarding a comprehensive, healthy development both physically and mentally for children is a rising global concern and a matter that countries are actively seeking

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<sup>1</sup>The world health report 2001 - Mental Health: New Understanding, New Hope (PDF) . WHO. [2017-03-07]. [https://www.who.int/whr/2001/en/whr01\\_en.pdf?ua=1](https://www.who.int/whr/2001/en/whr01_en.pdf?ua=1)

to improve. Childhood development is also a period of rapid physical and mental growth. Whether these developments are physical, intellectual, emotional, or social, they must simultaneously adapt to the many changes of the external environment. These interrelated elements such as family, school, peer, societal, or even as big as the global environment directly or indirectly impact children's mental health.

PCA Life Taiwan commissioned Fu Jen Catholic University to conduct the "Children's Physical and Mental Health Index" research to better comprehend children's mental health conditions in Taiwan. The research breakdowns children's well-being index into four groups. A score of 25 or below is categorized as lowest, 25 to 49 as low, 50 to 74 as moderate, 75 or above as high. Findings indicate that the physical and mental health index for 9-12 years old Taiwanese children in 2021 is 66, ranking in a moderate sector.<sup>2</sup> Further analysis of physical and mental dimensions discovered that Taiwan children's mental health score is 67, slightly higher than the physical health score at 65. In the aspect of mental health, peer interaction and relationship scored the highest at 77; it is also the highest among all categories in this research. The lowest score is pandemic lifestyle at 56. Regarding physical health, the highest score of 72 is sleeping habit while exercising habit is 53, which is the lowest in this research. It is apparent that there are many areas for improvements in the

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<sup>2</sup> The "Child Physical and Mental Health Index" is categorized into 4 groups; a score of 25 or below is the lowest, 25-49 as low, 50-74 as moderate, 75 or above as high.

physical and mental health of 9-12 years old children in Taiwan. Scholars and professionals in the discipline advise that when parents define children's wellbeing, more focus should be on a balanced lifestyle. Companionship is one of the key elements in children's development, and while adjusting to work and lifestyle modifications generated by the pandemic, parents can exercise regularly with their children. On the one hand, this will increase child and parent interaction; on the other hand, cultivate routine exercise habits.

PCA Life Taiwan echoes government policy and continues to contribute social influence as Thoughts Leader in raising awareness to the public on the importance of children's health and protection issues. "The White Paper on Children's Mental Health" accumulates viewpoints from medical specialists and scholars in Children Psychology Development, findings from Children's Mental and Physical Health Index, and references to countless local and global medical literature. All with a focus on analyzing current children's mental health issues in Taiwan and the influencing factors behind these issues. Thus, advocating more awareness on children's mental well-being, promoting to the public the concept that "healthier children are those without mental health issues, and those with mental health issues can receive treatment for a healthier well-being."

## **II. Mental Development Issues in Children**

### **A. Mental Development in Children**

Childhood development is a critical stage for rapid physical and mental growth as well as the crucial shaping and architecture of the child's mentality and personality. The aftereffect of not addressing mental health issues in children promptly could lead to severe mental and psychological disorders often extending into adulthood, interfering with academic/work performance and people relationships, consequently creating a mental and financial burden for family members and society.

As children head into elementary school, their emotional and social skills evolve due to the transformation in their surroundings. However, they have trouble expressing their feelings and emotions due to still developing language and critical thinking skills. Therefore, for some children, going to school can be quite stressful. At the age of 7, most children no longer rely solely on their primary caregiver. Through the process of interacting with friends, they learn to be more independent, enjoy activities together, acknowledge companionship and the needs of others. At the age of 10, the transition from passive learning to active learning is vital for growth in self-worth and self-esteem. Children develop their ways of thinking but are still limited in determining right vs. wrong and rely on their peers for opinions and behavior support. In addition, being valued by their family and friends during youth will provide a great sense of security as they head into adulthood.

Disruptions in mental development can be spotted when one or more abnormal behavior in temperament, emotional, behavioral, or attention span deviates from children's norms in the same age group.<sup>3</sup> In 2015-2017, the Ministry of Health and Welfare commissioned the National Taiwan University Hospital, Department of Psychiatry, professor Shur-Fen Gau to conduct the first research on psychiatric epidemiology in Taiwanese children and adolescents: 1/3 of children in Taiwan were identified with mental health issues<sup>4</sup> and needed professional evaluation and assistance. The clinical portrayal of children with mental health issues is those typically with emotional or behavioral disabilities. Family interaction acts as supporting evidence in the evaluation conducted by the nursing specialists. In Taiwan, many children suspected or already displayed mental health issues are not evaluated or diagnosed by a professional; some may even go undetected by their parents, emphasizing the importance of assessing children's mental health and taking preventive measures. Globally, researchers have developed quantitative measures to evaluate children's mental health. The most often used measurement internationally is CW-PWBS, the Psychological Well-Being Scale (PWBS) from the Children's continuous World Report (CW-Report)<sup>5</sup>, KINDLR Children Wellbeing

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<sup>3</sup> Ye, Guang Jun, Children/Adolescents and Women/Children Evetics, BeiJing: Chemical Industry Press, 2004, 1-20.

<sup>4</sup> Concluding results from 2017 psychiatric epidemiology in Taiwanese children and adolescents, research conducted by National Taiwan University Hospital, Department of Psychiatry, professor Shur-Fen Gau

<sup>5</sup> In a 2009 UNICEF meeting, researchers from the International Society for Child Indicators (ISCI) proposed and drafted a questionnaire for global research on children's subjective wellbeing. The first version was developed in 2010 and results were announced in 2012 (14 countries), 2013/14 (20 countries), 2016-2020 (35 countries). Psychological Well-Being Scale (CW-PWBS) consists of 6 questions, each question is ranked from 0-10 with a minimum score of 0 and a maximum score of 60.



Quality Chart<sup>6</sup>, and Pediatric Quality of Life (PedsQL).<sup>7</sup> CW-PWBS, Psychological Well-Being Scale evaluates children's mental well-being from 6 perspectives: Self-Acceptance, Positive Relations with Others, Purpose in Life, Environmental Mastery, Autonomy, and Personal Growth. KINDLR, Children Wellbeing Index evaluates the quality of children's well-being via Physical Well-being, Emotional Well-being, Self-esteem, Family, Friends, and Everyday Functioning. Finally, PedsQL, Pediatric Quality of Life, measures the four functioning (Physical, Emotional, Social, and School) to understand children's mental health status.

All of the evaluation measures mentioned above align with the Ecological Systems Theory proposed by American Psychologist Bronfenbrenner. The theory emphasizes the interrelated relationship between the child and the environment and how the five ecological systems influence children's development with family, school, and the society shouldering the responsibility of educating the next generation. While each ecological layer interacts with the child differently, the impacts of learning and development in children must be looked at with consideration to the interaction between elements such as the child's maturing biology, changes to his immediate family/community environment, and the interaction between family, school, society which forms the expansive environment.

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<sup>6</sup> First developed by Professor Monika Bullinger in 1994. Professor Ulrike Ravens-Sieberer and Monika Bullinger revised KINDL into KINDLR in 1998 as the generic table for assessing Health-Related Quality of Life in children

<sup>7</sup> Multi aspects health index to efficiently help healthcare professionals to comprehend children's mental health ◦

## The 5 Systems of the Ecological Systems Theory:

Table 1 The Ecological System

Microsystem	The environment with direct contact and most immediate impact on the child, including family, school, peers, and the community.
Mesosystem	The relation extended from the interaction of two or more microsystems, such as the interactions between peer groups and family or between family and school.
Exosystem	A system where the child does not have an active role but is impacted by the setting or the things that occurred within the environment such as parent's jobs, mass multi-media, educational policy, governments, community or social welfare systems.
Macrosystem	The system of the cultural elements that impact the current events in the child's societal environment, including culture, politics, economy, legal regulations, hierarchy, and traditional beliefs.
Chronosystem	Children's development is a progressing process where the shaping of the cognitive development and core value is greatly influenced by the interaction between the evolving characteristics

	of the individual and that of the surrounding environments.
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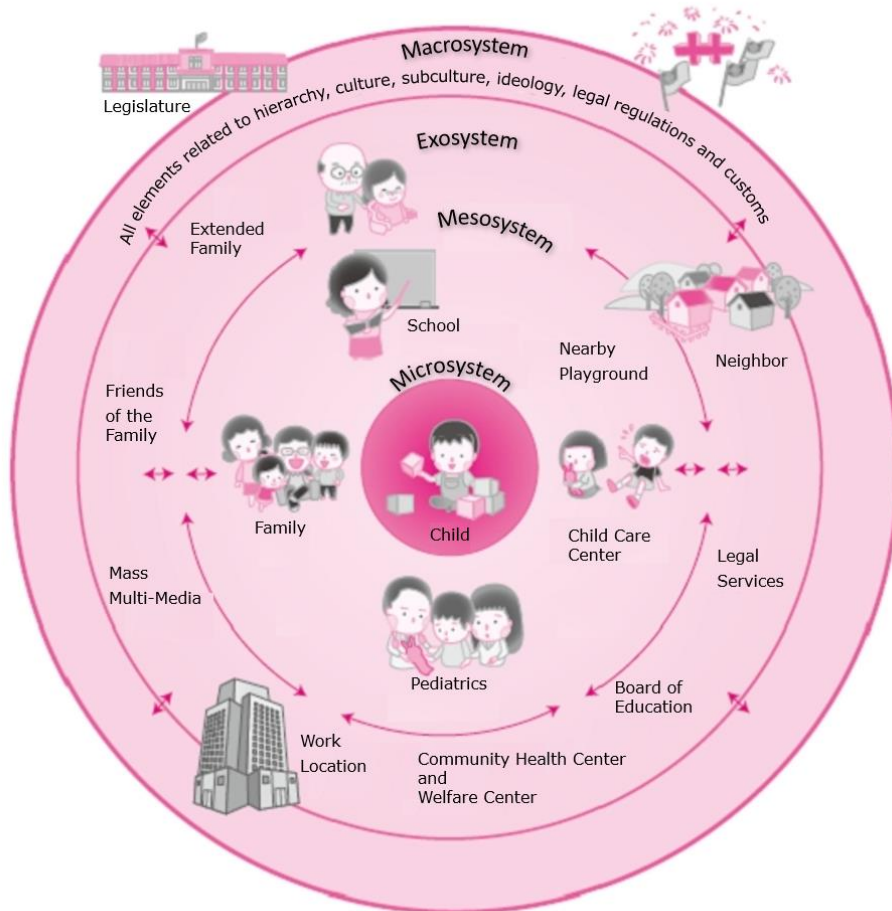


Figure 1 The Ecological Environmental System

(Source: The Butterfly Effect in a Child’s Daily Life, Commonwealth Publishing Group)

From factors as small as a family to as large as the global environment, each layer within the system, as mentioned above, impacts children’s mental health development. This white paper will analyze the influences from each layer and, with reference to other global quantitative indexes, develop the “Children’s Physical and Mental Health Index” for further analysis. Finally, based on research

and findings, present concrete next steps for a healthier wellbeing.

## B. Current Issues in Children's Mental Development

Living under the rapid progression of societal, economical, and technological advances, anxiety impacting children's well-being can be triggered by the school, friends, family tension, and other internal or external factors. Day-to-day living and learning obstacles also influence children's emotions and behaviors. Some can adapt well to these changes, while others have difficulty, but most situations are temporary. Some recognized signs of mental problems with severe adaptability conditions are anxiety, eating disorder, affective disorder, emotional disturbance, attention deficit, or feeling distressed about size and appearance.

UNICEF Innocenti Research Centre developed Child Well-being Indicators in 2006 and published comparative findings in 2007 and 2013 (UNICEF, 2007, 2013) to member countries within Organization for Economic Cooperation and Development (OECD). Taiwan also established Child Index Research Committee in 2012 to study and compare Taiwanese children's well-being with those from the OECD members; the findings were consolidated and published in Taiwan Child Well-being Index.<sup>8</sup> As seen from the report, Taiwan ranked 14th among the 21 countries in terms of Material Well-being.<sup>9</sup> In Health

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<sup>8</sup> Taiwan Child Well-Being Index : A Comprehensive Evaluation of Children's Health, Education and Welfare by Lue, Hung-Chi and others, First version, Taipei, Child Health Alliance Taiwan, 2014.06

<sup>9</sup>The Taiwan Child Well-Being Index is compared to those 35 countries from Organization for Economic Co-operation and Development (OECD), countries without data are not in the comparison.

and Safety categories, Taiwan ranked 22<sup>nd</sup> out of 24 countries. In the dimension of Family and Peer Relationships, Taiwan ranked 6<sup>th</sup> among the 22 countries. It's worth noting that children between the ages of 11, 13, and 15 described their peers as helpful friends, ranking the highest at 90.8%. In the Children Behavior and Risk category, Taiwan is ranked number 1 out of the 16 countries, where 17.3% of 11, 13, 15-year-old described experiences with bully incidents within the previous two months period. In the Subjective Wellbeing category, Taiwan is ranked 19<sup>th</sup> out of the 21 countries with 22.5% of children between the ages of 11, 13, 15, ranking enjoyments of going to school as number 10. These results reveal that in the dimensions of Health and Safety and Subjective Wellbeing for children, Taiwan falls significantly behind in comparison to other OECD countries; how to elevate in these two areas is of great importance to parents, teachers, and society.

In addition to these global publications, each country often conducts other research regarding children's mental health. For example, according to a study of mental health and education conducted by a British research center, their data showed that for children and adolescents between ages of 5-16, 10% were diagnosed with mental health issues, an equivalent of 3 children with mental health conditions in every class.<sup>10</sup> The United States Public Health Service Commissioned Corps estimates that 1/5 of American children

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<sup>10</sup> Taipei Representative Office in the UK, Education Affairs (2018a) Primary and Secondary Schools in England are offering health services to elevate students' mental health. E-paper 141, National Academy for Educational Research

and young adults are perplexed by mental health issues, and 2/3 of them have never received treatment; an estimation of 5 million children in the US suffering from a severe mental disorder, interfering significantly with their day-to-day life.<sup>11</sup> Ministry of Japan pointed out that since April 2020, all elementary, junior, and senior high school suicide rates have increased consecutively for six months compared to the same period in 2019. As the increase of suicide rates occurred during the pandemic, a period where many children feel distressed by not being able to interact with their friends due to pandemic preventative measures, therefore, whether or not the pandemic has an impact on the suicide rate of children is worthy of further investigation.<sup>12</sup> In Hong Kong, the “Children’s Happiness Index” was conducted in 2021. It showed the lowest index of happiness for children and negative impacts caused by the pandemic<sup>13</sup> where 40% of children have suffered from anxiety or great emotional disturbance, mainly regarding difficulties experienced in learning, social interacting, and family aspects.

Children Welfare League Foundation in Taiwan also conducted the “2021 Taiwanese Children’s Subjective Wellbeing Under the Pandemic” research.<sup>14</sup> The findings indicated that 1/5 of the children do not “feel happiness in life,” a decline compared to results in 2017, especially for the ten-year-old group where the item “I like myself” regressed

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<sup>11</sup> National Alliance on Mental Illness, Mental Health Issues among Asian American and Pacific Islander Children and Youth, 2011.

<sup>12</sup> Source: Storm Media (<https://www.storm.mg/article/3327929>)

<sup>13</sup> 2021 Research from Boys’ & Girls’ Clubs Association of Hong Kong

<sup>14</sup> Source: Children Welfare League Foundation ( [www.children.org.tw](http://www.children.org.tw) )

the most. A stress factor for children not only derives from school-related areas but also the changes brought on by COVID19.

Observations within the 2016-2019 clinical numbers from the National Health Insurance Database<sup>15</sup> show a gradual increase of 5-9 years old being treated for psychological, behavioral, or neurologic development (ADHD) issues (please refer to Figure 2). In addition, according to data from the Taiwanese Society of Child and Adolescent Psychiatry,<sup>16</sup> there are around 22 thousand 6-18 years old ADHD children and adolescents in Taiwan, yet only 24% seek treatments. Another data according to the National Health Insurance shows that children aged 5-9 and 10-14 who had to seek treatment for anxiety, disassociation, stress, and other mental disorder are increasing annually. The number of medical-seeking patients for 10-14 years old is twice that of the group of 5-9 years old (please refer to Figure 3).

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<sup>15</sup> Calculation of psychiatric patients (including ER cases) categorized by illness, gender and age from 2016-2019 National Health Insurance Database .

<sup>16</sup> 2015 ADHD Health Manual, Taiwanese Society of Child and Adolescent Psychiatry

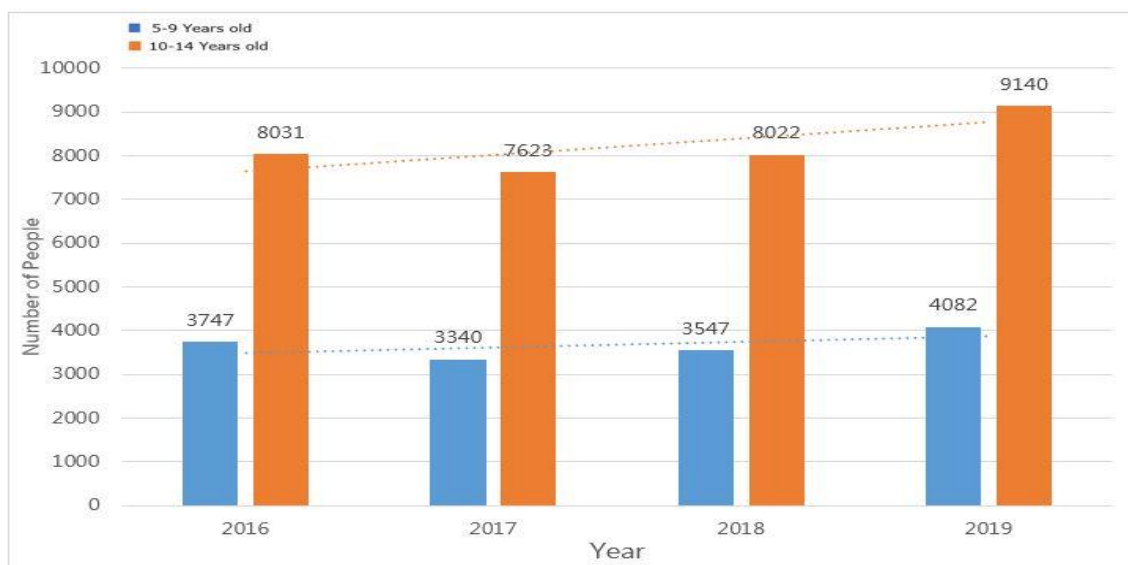


Figure 2 5-14 years old children seeking psychological, behavioral, and neurologic treatments (2016-2019)

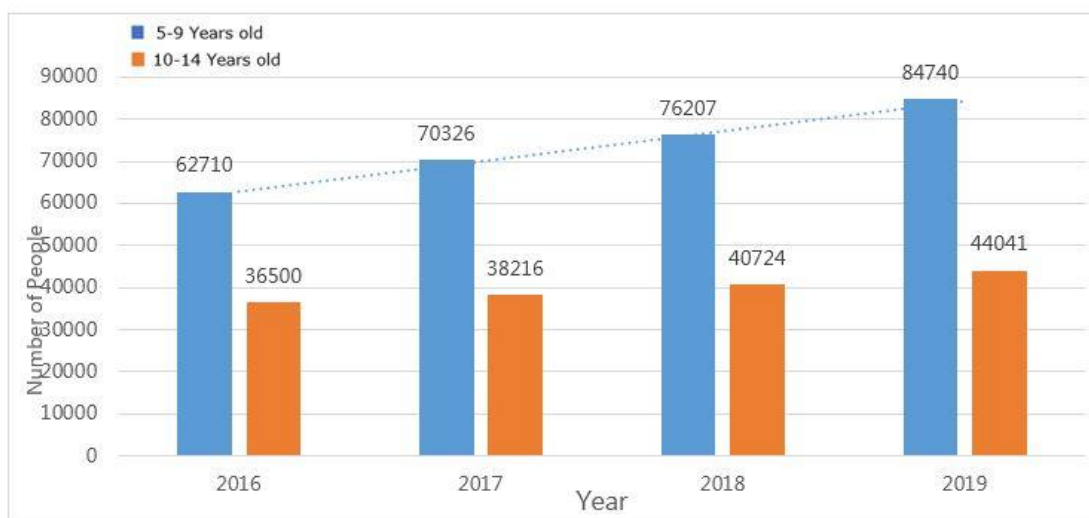


Figure 3 5-14 years old children seeking anxiety, dissociation, stress, and other mental disorders treatments (2016-2019)

Concluding from the data above, the number of children with mental disorders increases annually. Unlike physical disorders with obvious detectable symptoms such as blood urine, or a fever, on top of



parents' subconscious denial toward seeking psychiatric assistance, treatment, and support for many children with mental disorders are often delayed. Thus, constructing a happy, healthy upbringing environment with collaborations between family, school, and society is essential for positive impacts on children's emotional, temperament, and cognitive development.

### C. Summary

The term "children's well-being" is no longer just examining the physical weakness or illness of the child but also expanding to the complete status of psychological, physical, and school adaptability. Along with the evolution of time, social advancement, and the propel for education literacy, issues in children's mental health are surfacing gradually. From the dimensions of Children's Health and Safety and Subjective Well-being, Taiwan trails behind most OECD countries. Furthermore, the annual increase in children with mental disorders, as indicated from 2016-2019 statistics in the National Health Insurance Database and the two-year-long COVID-19 pandemic, all contribute to more issues in children's mental health, making it a concerning and alarming situation. According to UNICEF calculations,<sup>17</sup> since the COVID-19 pandemic and in compliance with related government policies, more than 1/7 (around 3.32 million) children around the globe have been isolated at home for periods as long as nine months, endangering children's health and wellbeing

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<sup>17</sup> <https://www.unicef.cn/press-releases/least-1-7-children-and-young-people-has-lived-under-stay-home-policies-most-last>

tremendously. In 2020, the foundation conducted research focusing on the impact of COVID-19 and the mental wellbeing of 8,444 children and adolescents across nine countries in Latin America. The study<sup>18</sup> found that 25% of the subjects were anxious, and 15% had depression tendencies. Many children feel scared, isolated, stressed, and worried about their future during the pandemic. COVID-19 and its disturbance on children's mental wellbeing require the attention of the government and relevant authorities and serve as a reminder to the public for more awareness on children's wellbeing status.

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<sup>18</sup> [https://www.unicef.org/lac/en/impact-covid-19-mental-health-adolescents-and-youth#\\_ga=2.267963081.690061156.1625813476-498467888.1625813476](https://www.unicef.org/lac/en/impact-covid-19-mental-health-adolescents-and-youth#_ga=2.267963081.690061156.1625813476-498467888.1625813476)

### **III. Children's Mental Development and Impacting Factors**

In the first chapter, we spoke of how the Microsystem, Mesosystem, Exosystem, Macrosystem, and Chronosystem significantly influence children's mental development. This chapter will focus on the Microsystem, Exosystem, Macrosystem and how these systems with immediate relation to the child such as family, school, peer, social media, and Covid 19 pandemic impact mental development.

#### **A. Family Relationships and Impacts on Children's Mental Health**

The first system in the ecological system is the Microsystem which refers to the closest relationships to the child, and family is the most significant relationship within this system. The way each family interacts with each other through emotional dependency, support system, social conflicts all reflect the relationship and authority structure within the family as well as the amount of impact it brings to the child. This section will further discuss the family environment, parenting style, parent and child relationship, marital relationship, and their effects on children's mental development.

##### **1. Family Environment**

The family environment refers to the family structure, socioeconomic status, family interactions, and so forth. Family structure specifies the number of family members and their relationships to one another, if the family is intact and whether there

are other caretakers in addition to the parents. Children's behavior and emotions will develop differently pending on different family structure environments. For example, comparing children who grew up in a nuclear family to those who live in a three-generation household, the children within the nuclear family will develop better behavior habits such as independence, self-control, and self-esteem.<sup>19</sup> The size of the family strongly correlates to child abuse, upbringing negligence; the larger the family, the higher the risk of child abuse and negative impact on the child's mental health development.<sup>20</sup>

Another observation is that grandparenting can lead to adverse effects and impacts on children's mental health. Grandparents often pamper children excessively, which results in selfish and other self-centered behaviors. In addition, in the process of growing up, grandparents are overprotective of the children, resulting in children becoming too dependent and spoiled; both characteristics restrict children in the progress of independence and self-confidence, thus creating parent and child gaps and other interpersonal skill issues.<sup>21</sup> Grandparenting and its impact on children's mental health are also reflected in social adaptability; children whom grandparents educate tend to have more social and interpersonal skills-related problems

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19 Yao, Bin Xian & He, Jun (1994). Research summary on family factors and its impact to children's social development. *Psychological and Education Development*, 10(2), 44-48.

20 Shek, D. T. (2005). Paternal and maternal influences on the psychological well-being, substance abuse, and delinquency of Chinese adolescents experiencing economic disadvantage. *Journal of Clinical psychology*, 61 (3), 219-234.

21 Sun, Yafei & Chen, Chuan feng (2016). Abstract of grandparenting and mental/behavior impacts to underachievers in middle school, 19th Annual Chinese Psychological Society Meeting Summary

than those brought up by their parents.<sup>22</sup>

Social Economic Status (SES) plays a vital role in children's mental health development<sup>23</sup>, and increasing evidence supports stronger linkage, particularly for children in financially constrained situations. McLoyd (1998) discovered that low SES is a consistent predictor for children's cognitive development, academic achievement, social skills, emotional and behavioral adaptive function.<sup>24</sup> Many researchers believe that the differences in SES are not directly related to the impacts of child development, but rather it is the contrasting difference in parenting practice, parent and child relationship, and learning environment that are the indirect components affecting the course of childhood development. In low SES families, parenting styles are more likely to be domineering, using harsh, harmful, and neglectful practices; some families might resort to punishment or abuse, compromising parent-child relationships and jeopardizing developments in children's mental health.<sup>25</sup>

## 2. Parenting Styles

Another critical component in children's mental health

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22 Lin, Cong (2016). Grandparenting and impacts to social skills for young children. *Journal of Suzhou Education Institute*, 19 (1), 94-95.

23 Conger, R. D., & Donnellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. *Annu. Rev. Psychol.*, 58, 175-199.

24 McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American psychologist*, 53 (2), 185.

25 Shek, D. T. (2005). Paternal and maternal influences on the psychological well-being, substance abuse, and delinquency of Chinese adolescents experiencing economic disadvantage. *Journal of Clinical psychology*, 61 (3), 219-234.

development is the parenting style or the methodology that parents use in upbringing and disciplining a child's way of thinking and behaving. The findings indicate that different parenting practices will correlate strongly to specific behaviors in children.<sup>26</sup> In the parenting research from Maccoby and Martin (1983),<sup>27</sup> the four parenting styles (authoritative, authoritarian, permissive, and neglectful) are categorized based on the two dimensions of demandingness and responsiveness. Authoritative parents are firm in establishing behavior guidelines and expectations but democratic in the process and responsive to the needs of their children. Even though this type of parent has personal solid goals and beliefs, they provide open discussion, respect their children's feedback, feelings and allow 'natural consequences' to take place and utilize them as opportunities to guide children in reflecting and learning. The Authoritarian parenting style is characterized by strict rules and stern discipline with frequent use of harsh punishment and one-way domineering communications. The permissive parents exhibit little or no expectations from their children, providing minimal demand or little guidance to verbal or physical behavior. Neglectful parents will satisfy requests from their children in attempts to avoid trouble and conflict, all in pursuit of "convenience." From research using 15-17 years old adolescents as the sample, those who grew up in an authoritative parenting environment are happy and content with

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26 Pettit, G. S., Bates, J. E., & Dodge, K. A. (1997). Supportive parenting, ecological context, and children's adjustment: A seven-year longitudinal study. *Child development*, 68 (5), 908-923.

27 Maccoby, E. E., & Martin, J. A. (1983). Socialization In the Context of The Family: Parent-Child Interaction. *Handbook of Child Psychology: Formerly Carmichael's Manual of Child Psychology* / Paul H. Mussen, Editor, 4, 1-101.

their life; they have high self-esteem and low level of depression.<sup>28</sup>

Children with authoritative parents tend to display unhappiness and conflicts with other people. Children under neglectful parenting lack emotional attachment to their primary caregiver and often display social withdrawal, impacting interpersonal relationship developments later in life. A permissive parenting environment tends to foster children who lack objectives and learning motivation. In the process of maturing and formation of a positive personality, parents should adopt and modify parenting methods according to the characteristics and developments of their children.

### 3. Parent-Child Relationship

A parent-child relationship is an interactive bond that parents have with their children. Being the first and longest relationship that a child develops within a lifetime, the bond is fundamental to children's mental development. A harmonious parent-child relationship facilitates positive mental development such as better subjective well-being and increased prosocial behaviors.<sup>29</sup> Passive parent and child relations discourage development and increase problematic behaviors,<sup>30</sup> destructive behaviors,<sup>31</sup> negative emotions,

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28 Milevsky, A., Schlechter, M., Netter, S., & Keehn, D. (2007). Maternal and paternal parenting styles in adolescents: Associations with self-esteem, depression, and life-satisfaction. *Journal of child and family studies*, 16 (1), 39-47.

29 Kärtner, J., Keller, H., & Chaudhary, N. (2010). Cognitive and social influences on early prosocial behavior in two sociocultural contexts. *Developmental psychology*, 46 (4), 905.

30 Jouriles, E. N., Rosenfield, D., McDonald, R., & Mueller, V. (2014). Child involvement in interparental conflict and child adjustment problems: A longitudinal study of violent families. *Journal of abnormal child psychology*, 42 (5), 693-704.

31 Buyse, E., Verschueren, K., & Doumen, S. (2011). Preschoolers' attachment to mother and risk for adjustment problems in kindergarten: Can teachers make a difference? *Social Development*, 20 (1), 33-50.

<sup>32</sup> possible criminal behaviors.<sup>33</sup> In the childhood stage, the parent and child bond or attachment lays the foundation of all future developments within the child. Attachment is a strong predictor of children's behavior and emotional problems.<sup>34</sup> A longitudinal study of adolescences in New Zealand found a strong association between quality measures of parental bonding and adulthood mental adjustments functions (mainly of depression; anxiety disorder; suicidal behavior; illicit drug abuse; crime).<sup>35</sup>

According to Zhang & Dong (2017)<sup>36</sup>, their study indicates that the amount of time parents spend with their children is an influencing factor in families with emotional disorders. Children are less likely to develop emotional impairment with longer periods of parent companionship. Research from Kuo (2021)<sup>37</sup> indicates that lack of parent companionship results in children's mental health issues.

#### 4. Marital Relationship

Marital relationship is a core factor in influencing family relationships within a family, and constructive marital relationships

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32 El-Sheikh, M., Keiley, M., Erath, S., & Dyer, W. J. (2013). Marital conflict and growth in children's internalizing symptoms: The role of autonomic nervous system activity. *Developmental psychology*, 49 (1), 92.

33 Guan, Ying (2012) Juvenile Characteristics-10 comparison across 2 National Juvenile Investigation. *China Youth Study*, 6, 47-52.

34 Moullin, S., Waldfogel, J., Washbrook, E., & Bonds, B. (2014). Parenting. Attachment and a Secure Base for Children.', The Sutton Trust.

35 Raudino, A., Fergusson, D. M., & Horwood, L. J. (2013). The quality of parent/child relationships in adolescence is associated with poor adult psychosocial adjustment. *Journal of adolescence*, 36 (2), 331-340.

36 Zhang, Haijun & Dong (2017), Xiao Lei A study of teenage children with emotional disorders and family impacts in Weifang City, *Chinese Journal of School Health*, 7,8.

37 Kuo, Li Jun (2021). Middle School "left behind" children's mental issues and strategic resolutions. 2021 Hua Nan Education Information Research and Experience Sharing Society dissertation compilation (4)



are a positive predictor of children's mental health development. According to research by McLanahan (2013), children with exposure to constructive parental relationships and a stable family environment foster better mental wellbeing.<sup>38</sup> Children exposed to destructive marital conflicts may be put at the risk of developing adjustment problems.<sup>39</sup> Destructive marital relationships displaying hostility, anger, cringe, and emotional withdraw are direct or indirect precipitators of a child's later development with internal or external disorders such as antisocial, anxiety, social withdrawal issues.<sup>40</sup> Destructive marital conflict involves behaviors such as verbal aggression and violence (threats, insults, maltreatments), which increases the likelihood of physical punishment or abuse in a parent to child relationship,<sup>41</sup> consequently leading to risks of behavior problems, psychological issues, poor social skills, and maladjustment in child development. Fathers with higher satisfaction in their marriage relationship tend to be more involved in their children's education which is a positive facilitator for children's overall wellbeing.<sup>42</sup>

In conclusion, parents, and children with higher satisfaction

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38 McLanahan, S., Tach, L., & Schneider, D. (2013). The causal effects of father absence. *Annual review of sociology*, 39, 399-427.

39 Barletta, J., & O'Mara, B. (2006). A Review of the Impact of Marital Conflict on Child Adjustment. *Australian Journal of Guidance and Counselling*, 16 (1) · 91-105 ·

40 Richmond, M. K., & Stocker, C. M. (2008). Longitudinal associations between parents' hostility and siblings' externalizing behavior in the context of marital discord. *Journal of Family Psychology*, 22 (2) · 231-240 ·

41 Lansford, J. E., Staples, A. D., Bates, J. E., Pettit, G. S., & Dodge, K. A. (2013). Trajectories of mothers' discipline strategies and interparental conflict: Interrelated change during middle childhood. *Journal of family communication*, 13 (3) , 178-195.

42 Wu, Xin Chun, Chen, Ling, Liu Chang, Xing, Xue Wei (2014). Impacting factors in Chinese fathers and their involvement in parenting. *South China Normal University Paper, social science edition* (6), 88-95.

towards family life are those with frequent family activities and interactions; more prolonged periods of companionship; a more flexible, democratic, warm, and respecting parenting style with immense love and support. On the other hand, due to the prospect of spoiling and overprotecting the child, which results in selfish and non-dependent characteristics that restricts development on growth of independence and self-esteem, the impacts of grandparenting on children's mental health are more negative than positive.

## B. Peer Relationships and Impacts on Children's Mental Health

When children transit from family to school, it is a milestone for connecting with other people, making peer relationships crucial in the Microsystem. Children learn distinguishing characteristics, competence, cooperation, and negotiation skills through interacting with peers. However, under unhealthy circumstances such as drastic changes in society, instability of the family structure, and impacts of poverty in the M-shaped society, more and more children have mental well-being and adaptability issues. This section will analyze the impacts of peer relationships and school bullying on children's mental health.

### 1. Peer Interaction and Relationships

Peer relationships are the foundation of an individual's development and interpersonal skills under a social context.<sup>43</sup> School

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43 Lair, J. (1984). Change induction groups, group psychotherapy, integrity groups, peer counseling. *Encyclopedia of psychology*, 1 (2) :493-494.

is the most familiar social environment for children; therefore, relationships between their teachers and peers will have a dominating role in the development of their mental health. From a psychological viewpoint, social skill refinement, a sense of identity, and positive peer-to-peer interaction are breakthroughs and absolute necessities for healthy wellbeing. Wentzel & Caldwell (1997)<sup>44</sup> further supports the importance of peer relationships to children and adolescents by indicating that children often imitate peer behavior and, via that behavior, express their interest and care to other people. Tseng (2007)<sup>45</sup> showed that elementary students' self-concept, peer relationships, and social interests are highly correlated. Research from Corsano, Majorano & Champretavy (2006)<sup>46</sup> indicates that students who have more substantial isolation experiences in peer relationships suffer more mentally. Conversely, children who experience positive peer relationships accelerate healthy cognitive and social development and cultivate good social habits to adapt quickly to peer groups and activities.<sup>47</sup> Some studies also discovered that children could perceive their surrounding peers with mental issues and act negatively towards them; external physical factors such as obesity can also result in peer rejection, consequently, disrupts mental wellness.<sup>48</sup>

## 2. School Bullying

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44 Wentzel, K. R. & Cadwell, K.A. (1997) . Friendships, peer acceptance and group membership: Relations to academic achievement in middle school. *Child Development*,68,1198- 1209.

45 Tseng, Wen-Chian (2007). PhD Theses on A Study on the Relationships among Self-concept, Peer Relationship, Social Interest and Life Adjustment of Only Child in Elementary Schools

46 Corsano, P., Majorano, M., & Champretavy, L. (2006) . Psychological well-being in adolescence: the contribution of interpersonal relations and experience of being alone. *Adolescence*, 41 ( 162) .

47 Parker, J. G., Rubin, K. H., Price, J. M., & DeRosier, E. M. (1995) . *Child Development and Adjustment: A developmental Psychology Perspective* dalam Cicchetti, D & Cohen, DJ. *Developmental Psychopathology Volume 2. Risk Disorder and Adaptation*, 96-161.

48 Hennessy E, Swords L, Heary C. (2008) . Children's understanding of psychological problems displayed by their peers: a review of the literature. *Child Care Health Dev*, 34 ( 1) , 4-9.

An issue deriving from peer relationships is school bullying, where victims experience social skills obstacles. The victim feels a sense of inferiority, and that rejection from peers is caused by personal reasons and develops suppressive characteristics. Related research shows bullying will drastically reduce self-esteem, deteriorate self-evaluation and self-worth of the victim.<sup>49</sup> Another study found that “bullying incidents cause the elementary school victims to suffer from social disorders resulting in social skills development obstacles.”<sup>50</sup> Suffering from lengthy periods of bully behavior, the victim accumulates negative emotions and is more likely to suffer from internalized problems such as anxiety and depression.<sup>51</sup> In the investigations made towards the bully in school incidents, it was found that many suffered from personal defects; some came from a single-parent household, some were neglected by their parents, and some were even victims of other bullying incidents in schools. Liu (2017)<sup>52</sup> suggests that when it comes to bullying or those who are more prone to become a bully, they are highly sensitive, compulsive, rejected by peers, suffer academically, and grew up in a high-pressure family environment. Fei (2017)<sup>53</sup> suggests that bullying in school is mutual damaging behavior. Guo’s (2016)<sup>54</sup> research on the

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49 Chu, Jin (2009) (2009) . Mental Analysis of school bully victim and intervention strategies. *Modern Primary and Secondary Education* (3), 48-51.

50 Zhang, En You & Chen, Sheng (2016) Psychological analysis of bullying phenomenon in elementary and junior high schools. *Journal of The Chinese Society of Education* (11), 13-17

51 Kuo, Yong Jun & Wang, Wen Jing (2017). A psychological view towards the cause and preventative measures for elementary and junior school bullying incident, (23), 15-15.

52 Liu, Jian (2017). Elementary and Junior High School Bullying and Management in China. *Journal of Nanjing Normal University, Social Science Edition*, (1), 75-84.

53 Fei, Xiu Fang (2017) . School Bullying causes and preventative strategies. *Life Science*.

54 Guo, Run (2016). Case study of junior high school bullying behavior (doctoral dissertation, LanZhou University)

consequences, danger, and impact to the individual who has experienced bullying discovered a high correlation between bullying, antisocial and high-risk behavior. Bullying will traumatize the victims physically, mentally, and continuously; a bully is also at increased risk of criminal behavior.

Summarizing from the works of literature above, there is a positive correlation between favorable peer relationships and healthy child mental development. On the other hand, when peer relationships are negative or transform into bullying incidents, both the bully, the victim, and the observers experience negative mental impacts and unhealthy social development. Many factors can generate children's negative attitudes towards their peers, including individuals' own mental well-being, physical appearance, and so on; these factors form the vicious cycle for children's mental health. Therefore, maintaining children's well-being can foster a positive peer relationship and create a healthy cycle.

### C. Social Media and Impacts on Children's Mental Health

The exosystem in the ecological system is where the child is directly or indirectly involved but is influenced by the occurring events within the environment, for example, the impacts of social media. Along with internet advancements, these new forms of socialization are integral to children's daily lives. Popular social media groups such as Facebook, Instagram, Youtube, TikTok, etc., are highly entertaining and informative, making them a critical communication

medium indispensable to children. However, they are accompanied by many adverse side effects such as cyberbullying, privacy issues, sexting, internet harassment, addiction, sleep, and exercise deprivation. A children's cognitive development is yet to mature compared to adults. The lack of self-control plus peer pressure means they are more likely to become victims of negative influence from social media when exploring or experimenting with browsing. Cyberbullying and internet addiction and their impact on children's mental development will be discussed here.

## 1. Cyberbullying

Cyberbullying is defined as deliberately using digital media to communicate misleading or embarrassing information to attain the purpose of humiliating or injuring others.<sup>55</sup> Even though there is no physical contact in cyberbullying, the harm experienced by the victim can be even more detrimental than traditional means of bullying.<sup>56</sup> In contrast to traditional bullying, the perceived anonymity characteristics of cyberbullying contribute to the freedom of the individual to discuss content or put into practice things via the use of pseudonymous email accounts that are otherwise more difficult to do in real-life scenarios. While traditional bullying occurs in school, cyberbullying has no boundaries in terms of time or location; it just

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55 Völlink, T., Bolman, C. A., Dehue, F., & Jacobs, N. C. (2013). Coping with cyberbullying: Differences between victims, bully-victims and children not involved in bullying. *Journal of community & applied social psychology*, 23 (1), 7-24.

56 Twyman, K., Saylor, C., Taylor, L. A., & Comeaux, C. (2010). Comparing children and adolescents engaged in cyberbullying to matched peers. *Cyberpsychology, Behavior, and social networking*, 13 (2), 195-199.

spreads via the internet.<sup>57</sup>

Cyberbullying is quite common and is one of the most re-occurring negative interactions in peer-to-peer relationships.<sup>58</sup> Approximately 2-14% of European children or adolescents can relate to cyberbullying or traditional bully experiences.<sup>59</sup> Mostly in younger children, sometimes the perpetrator has no awareness of the harm their actions have caused and believes it is just humorous or having some fun. The victim of cyberbullying is more likely to have symptoms of depression.<sup>60</sup> In addition, there is evidence that no matter the role, the bully or the bullied victim, both are significantly impacted negatively in the process and report signs of declining self-esteem, academic performance, withdrawal symptoms, depression, and stress escalation.<sup>61</sup>

## 2. Internet addiction

The rise of social media provides many positive benefits, but many mental illnesses are also associated with it, such as a new phenomenon called “Facebook Depression.” Facebook Depression positively correlates to the amount of time using the internet and the

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57 Mishna, F., Saini, M., & Solomon, S. (2009) . Ongoing and online: Children and youth's perceptions of cyberbullying. *Children and Youth Services Review*, 31 ( 12 ) , 1222-1228.

58 O'Keeffe, G. S., & Clarke-Pearson, K. (2011) . The impact of social media on children, adolescents, and families. *Pediatrics*, 127 ( 4 ) , 800-804.

59 Livingstone, S., Haddon, L., Gorzog, A., & Olafsson, K. (2011) . EU kids online final report. EU kids online. O'Keeffe GS, Clarke-Pearson K, Council on Communications and Media. The impact of social media on children, adolescents, and families. *Pediatrics* 2011; 127: 800-4.

60 Richards, D., Caldwell, P. H., & Go, H. (2015) . Impact of social media on the health of children and young people. *Journal of pediatrics and child health*, 51 ( 12 ) , 1152-1157.

61 Swist, T., Collin, P., McCormack, J., & Third, A. (2015) . Social media and the wellbeing of children and young people: A literature review.

degree of reliance on social media.<sup>62</sup> These children exhibit classic symptoms of mental illness such as anxiety, low self-esteem, depression, anger issues. These symptoms not only exist when under frequent usage of the internet and contact with social media, but it is also more likely to be out of control when there are internet usage restrictions; some individuals might have difficulties distinguishing reality vs. social media.

There are early warning signs to predict a child's probability with internet addiction.<sup>63</sup> Behavior changes such as social withdrawal, lack of interest, and giving up on hobbies are all symptoms of possible internet addiction. Other internet addition predictors are anxiety, sadness, ill-temper, lack of patience, and other unpleasant emotions when access to the computer, laptop, or cell phone is unavailable.

Social media is now a dominant medium for communication in modern society, and with utilization threshold lowering, so is the age of the users. Responding to the rising demand and advancement of online courses during the pandemic, a vast expansion of children are acquainted with social media. However, excessive use of social media triggers harmful interference to a child's interpersonal relationships, academic work, and well-being. There is convincing evidence that cyberbullying has a significant impact on a child's well-being; Both

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62 Richards, D., Caldwell, P. H., & Go, H. (2015). Impact of social media on the health of children and young people. *Journal of paediatrics and child health*, 51 (12), 1152-1157.

63 Leung, L. (2014). Predicting Internet risks: a longitudinal panel study of gratifications sought, Internet addiction symptoms, and social media use among children and adolescents. *Health Psychology and Behavioral Medicine: An Open Access Journal*, 2 (1), 424-439.



bully and bully victims report low self-esteem, a decline in grades, lack of interest and hobby, depression, and stress inclination. Professor Yi-Nuo Shih, from Fu Jen School of Occupational Therapy, believes that from a psychological, occupational therapy point of view, a balanced well-being is closely related to day-to-day habits and routines. Excessively investing in a single activity such as using the internet results in an “occupational imbalanced status,” which disrupts the individual’s well-being. In the age of digital technology and information bombardment, efforts to guide children in using the internet appropriately and adequately is a significant concern.

#### D. Environmental Changes and Impacts on Children’s Mental Health

The macrosystem within the ecological system refers to the current events in the child’s societal environment or changes triggered by the external environment. Environmental-related factors such as living environment, crowdedness, noises, air quality, and light intensity can directly or indirectly affect mental well-being.

Since the beginning of 2020, the outbreak of the pandemic COVID-19 and relevant stay-at-home policies interrupts learning at school and also children’s social interactive adaptability; it emerges as the most significant environmental factor impacting children’s mental health. This section will examine the impacts of physical environments and COVID-19 on children’s wellbeing.

##### 1. physical environment

Backyards, streets, schools, parks, playgrounds, and all physical architectures are within the scope of the physical environment.

Following parents and teachers, the physical environment is the third learning candidate for children, significantly influencing their cognitive development. Furthermore, Physical Environment can also act as a learning partner, with more influence on younger children's self-development and cognitive evaluations (Maxwell, 2007).<sup>64</sup>

Studies also pointed out that children who grew up in cosmopolitan areas, compared to children who live in more natural environmental surroundings, are more likely to suffer from depression, increase in stress level, obesity, and other health-related issues. The contributing factors to those outcomes are the lack of natural resources, reduced exercise opportunities, and the hustle and bustle of the city.<sup>65</sup>

## 2. COVID-19 Pandemic

According to statistics gathered by 7 Nov 2021, accumulated Coronavirus confirmed cases are over 2.49 million, with 504.7 thousand deaths,<sup>66</sup> escalating as one of the most significant scale pandemics in the history of mankind. The damages that COVID-19 triggers mentally are more long-term and less noticeable compared to the physical ones. While children infected rates are much lower than adults, but the restriction of children's cognitive and language development results in unclear expression of how they feel about the

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64 Maxwell, J. A. (2004). Causal explanation, qualitative research, and scientific inquiry in education. *Educational researcher*, 33 (2), 3-11.

65 Evans, G. W., Kliewer, W., & Martin, J. (1991). The role of the physical environment in the health and well-being of children.

66 <https://gisanddata.maps.arcgis.com/apps/dashboards/bda7594740fd40299423467b48e9ecf6>

situation<sup>67</sup>, and these impacts should not be overlooked. For example, when facing the pandemic threats and griming atmosphere created by surrounding news and media coverage, children cannot fully comprehend the reasons behind the necessary measures related to quarantine. However, they can sense the crisis via the overall social atmosphere and interaction between family members. Children's feelings and impacts experienced by the pandemic are no less than those from adults.<sup>68</sup> Children will also suffer internalized stress caused by fear, uncertainty, and panic. Due to their constraints in language and communication ability, identifying an outlet to release this mental pressure is even more challenging. One must be aware of the profound effects that could leave a lasting imprint on children's well-being. Studies show that after the terrorist attack on 911, the concentrated TV and broadcasting news coverage of the attack increased post-traumatic stress disorder (PTSD) or other related mental illnesses.<sup>69</sup> Precaution should be taken to prevent similar incidents from re-occurring to children after COVID-19.

Research has shown that children and teenagers suffer from emotional stress due to stay-at-home policies resulting in a lack of social interaction with their friends and peers.<sup>70</sup> In terrific

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67 Vallejo-Slocker, L., Fresneda, J., & Vallejo, M. A. (2020). Psychological wellbeing of vulnerable children during the COVID-19 pandemic. *Psicothema*, 32 (4), 501-507.

68 Cusinato, M., Iannattone, S., Spoto, A., Poli, M., Moretti, C., Gatta, M., & Miscioscia, M. (2020). Stress, resilience, and well-being in Italian children and their parents during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 17 (22), 8297.

69 Imran, N., Zeshan, M., & Pervaiz, Z. (2020). Mental health considerations for children & Adolescents in COVID-19 Pandemic. *Pakistan journal of medical sciences*, 36 (COVID19- S4), S67.

70 Goldman, P. S., van Ijzendoorn, M. H., Sonuga-Barke, E. J., Bakermans-Kranenburg, M. J., Bradford, B., Christopoulos, A., ... & Zeanah, C. H. (2020). The implications of COVID-19 for the care of children living in residential institutions. *The Lancet Child & Adolescent Health*, 4 (6), e12.

catastrophic incidents, children will react and handle the situation differently based on their previous encounters. Supporting evidence suggests that children who do not have any experience with COVID 19 or other disasters will be more vulnerable to anxiety, depression, sleep deprivation, social skills disabilities, and other internalizing disorders; these symptoms most likely will continue even after the termination of the pandemic.

Under social distancing conditions, many school activities have transformed into online courses, leading to increased internet usage for children. King Car Education and Cultural Foundation surveyed students in upper grades of elementary schools and middle and high/vocational schools.<sup>71</sup> From the period of 15 June to 5 July 2021, 18 thousand samples were collected, leading to a discovery of 64% of subjects wanting to return to school; 42% felt that the pandemic has led to learning decline; close to 50% did not take their study seriously during the 3rd level alert period; electronic devices and usage restriction is the most significant conflict among stay at home interactions during the quarantine period. In Sept 2021, PCA Life Taiwan also conducted an online questionnaire<sup>72</sup>. The negative impacts generated by the third alert pandemic prevention period include 59.2 % excess reliance on electronic devices, 36.3% felt isolated, 29.1 % experienced abnormal eating behavior. Although some international studies support leveraging the use of the internet

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71 <https://kingcar.org.tw/survey/501376>

72 During the period of 07/29/2021~08/15/2021, PCA Life Taiwan conducted an online questionnaire "Changes in elementary school children under the pandemic", 724 valid samples were received.

to maintain children's well-being, it is worthy of taking precautions against phishing, cyberbullying, and other hazards from the internet when undergoing long periods of internet usage. Pandemic also set off negative changes to the parent-child relationship. A study pointed out that within the research participants, approximately 27% of parents and 14% of children suffered from mental issues prompted by the pandemic quarantines.<sup>73</sup> In the cases where both parents and children are undergoing mental issues, 10% of these children demonstrated behavior deviation from the norm. When parents face a traumatic crisis such as the pandemic, how to balance in terms of family, work, and children's wellbeing is a rigorous challenge.<sup>74</sup>

Concluding from the above, elements impacting children from the environmental factors include the physical environment where children with less access to natural resources are more likely to experience depression, stress, obesity, and suffer from other health-related issues. The fear, stress, anxiety, and damages triggered from COVID-19 to children's wellbeing may have long-lasting implications. A lengthy period of internet usage is often accompanied by internet addiction and cyberbullying. All of the above conditions are big challenges for families and institutions to tackle. In occupational therapy, the "occupational model" will impact the "occupational practice." The occupational model is the space and set up in the

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73 Patrick, S. W., Henkhaus, L. E., Zickafoose, J. S., Lovell, K., Halvorson, A., Loch, S., ... & Davis, M. M. (2020). The well-being of parents and children during the COVID-19 pandemic: a national survey. *Pediatrics*, 146 (4).

74 Spinelli, M., Lionetti, F., Pastore, M., & Fasolo, M. (2020). Parents' stress and children's psychological problems in families facing the COVID-19 outbreak in Italy. *Frontiers in psychology*, 11, 1713.

physical environment, while occupational practice includes the types of physical and mental reactions; the conditions and suitability of the physical environment will impact the children's emotions or behaviors. While there are impacts from different social-economic statuses within the physical environment, COVID-19 and its movement restrictions also affect children's wellness. The cascading effects over time are worth further exploring.

#### E. Summary

There is little acknowledgment of children's mental problems in the past, but these are well recognized and existing issues in modern society. Our whitepaper focuses on the impacts of children's mental health from family relationships, peer interaction & relationships, social media, and environmental changes. Family relationships, activities, interaction frequency, length of companionship, parenting style all impacts children and their contentment towards family life. When there is little family interaction, a short period of companionship, and children are not happy with their lifestyle, it will impact their interaction with peers. When a positive relationship or self-value cannot be obtained from their peer relationships, children might turn to the internet for comfort, which increases the chances and risks of bullying others or being bullied. Due to COVID-19 and relevant movement restrictions, the reduction of peer and teacher interactions at school consequently led to lengthy periods of internet usage and possible side effects of internet addiction resulting in a negative cycle with increased risks of emotional downfall and other

emotional obstacles in the development of children's mental health. This white paper employs the social-ecological system to analyze children's mental health and its complex correlations between each other. Under the current circumstances, what can parents, schools, and the government do to accelerate children's mental wellness development? Experts from Fu Jen Departments of Clinical Psychology and Occupational Therapy propose the following:

1. Parents should reserve time in their daily schedule and temporarily put electronic devices and work aside to focus on interacting with their children to fully understand their children's mental and emotional changes.

2. Be aware of warning signals such as children dropping out of group activities or being no longer interested in previous activities; experiences of falling asleep difficulties or staying asleep, dietary changes, and so on.

3. Through positive family relationships and parent-child interaction to sustain the healthiness of children's well-being to facilitate positive peer relationships and the construction of a healthy cycle.

4. Finally, if difficulties persist after these efforts, parents could consider turning to well-being professionals and seek comprehensive evaluation, starting with local pediatrics or family doctors or scheduling an appointment with psychiatric organizations.

## **IV. Children's Mental and Physical Health Index**

Children are the foundation of a nation and its social developments. Therefore, valuing their health rights to ensure they mature into healthy adults should be of great importance to the government and the general public. Since 2020, countries across the globe have been confronted by COVID-19 with life threats, health care, political, social, and economic hardships, not to mention the uncalculatable mental and physical disruptions to children who are at their vital developing stages. This research will cover children's physical and mental health, focusing on significant factors that impact these developments. Through online surveys targeting Taiwanese 9–12-year-old children and their parents as subjects, "Children's Mental and Physical Health Index" was developed to provide quantitative data for a concrete evaluation of the existing well-being of Taiwanese children.

### **A. Structure of Children's Physical and Mental Health Index**

The "Children's Physical and Mental Health Index" is used to evaluate children's physical and mental health status, focusing on subjective indicators of how they feel and the balance between physical and mental health. "A healthy well-being" is a complex and vague concept, taking into consideration of an individual's perception of value; therefore, to be more specific about mental and physical health, a definition must be set to its scope and purpose of measurement.



There are many interpretations of physical and mental health. This research refers to the definition provided by WHO, "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." In addition to defining health, there is also a sub-health state which refers to the characterization of disturbing decline in psychological and physical behaviors caused subconsciously by excess use of the brain; lack of exercise for lengthy periods; high stress experienced at work; and accumulation of frustrations and other emotions. The first two sections of this paper begin with the ecological system theory and how each layer with factors as small as a family to larger ones such as the global society impacts the children's well-being. Components impacting the state of well-being can be divided into physical and mental health. Physical health can be split into four categories "Height & Weight, Eating Habits, Sleeping Habits, and Exercising Habits." Mental health can be categorized into six dimensions, including "Personal Life, Family Life, Peer Interaction & Relationship, School Life, Social Media and the item which impacts the most within the last two-year period, Pandemic Life." To examine the status of children's well-being, questions are formed on the foundation of the ten categories. For instance, in the category of "Peer Interaction and Relationship," four descriptions are provided: Do I hang out with friends; Do my friends like me; Do I get along with my friends; Have I ever been made fun of or bullied. For each statement, the individual is asked to rank according to the frequency scale "never," "seldom," "often," "frequent." "The Children's Physical and Mental Health Index" is

calculated for each of the ten categories by summing the score for each question and dividing it by the total number of items to formulate a category index average score. The scores are between 0~100. The questionnaire covers both positive and negative descriptions, meaning high frequency for positive questions results in higher index scores. In contrast, high frequency for negative questions will result in a lower index score. The result is that no matter positive or negative questions, a higher score represents healthier well-being. The calculation formula is as below:

$$\text{Category Index} = \frac{\text{Question1} + \text{Question2} + \dots + \text{Question N}}{\text{Total Questions}}$$

## B. Questionnaire Design and Methodology

The online structured questionnaire with quota distribution in gender, age, and regions was implemented by Fu Jen Catholic University & Eastern Media Corporation LOHAS Product Center. For a complete comprehension of feedback from children and parents, the target population was explicitly set to Taiwanese adults aged between 35-50 and their children aged between 9-12 years old. Random selection and 20 times more than the required sampling population received batches of EDM questionnaire invites. With a 95% confidence level and error rate controlled within 0.05, the response rate of 1039 parental questionnaires and 1000 children's questionnaires were received for further analysis. The children's age group was fairly distributed within the sample, with 284 (28.4%) 10-

year-old children as the largest group and 11-year-old children with 202 samples (20.2%) as the smallest sample group.

### C. Findings

Statistics indicated (Table 2) that Taiwanese children aged 9-12 scored an overall average index of 66 on mental and physical health.<sup>75</sup> The “Mental Health” score of 67 is slightly higher than the “Physical Health” score of 65. In terms of mental health subcategories, “Peer Interaction & Relationship” ranked the highest at 77, while “Pandemic Life” ranked the lowest at 56. In the dimension of physical health, the highest index score is “Sleeping Habit” at 72, while “Exercise Habit” ranked the lowest at 53. Analysis and discussions based on questions within each category will follow below.

Table 2 Children’s Physical and Mental Health Index

In ranking order	Category	Score
1	Peer Interaction & Relationships	77
2	Sleeping Habits	72
3	Family Life	70
4	Eating Habits	68
5	Personal Life	68
6	School Life	68
7	Height and Weight	65

<sup>75</sup> The research categorized into four groups; a score of 25 or below is the lowest, 25-49 as low, 50-74 as moderate, 75 or above as high

8	Social Media	60
9	Pandemic Life	56
10	Exercise Habits	53
<b>Children's Physical and Mental Health Index</b>		<b>66</b>

### 1. Physical Health Category: Improvement in Children's Exercising Habits

The average height of 138.67cm and weight of 37.49kg of subjects between 9–12-year-old is within reasonable measurements of the growth curve.<sup>76</sup> Further Analysis indicates (Table 3) that children feel average satisfaction towards their weight and appearance. In terms of eating habits, children who have daily breakfast and fruits intakes are pretty high, while daily intake of sugary drinks and high cholesterol food is lower. Children with sugary beverages and high cholesterol food intake habits are not as healthy. Most children have healthy and normal sleeping habits. In aspects of exercise habits, "Daily exercise of at least 1 hour" and "Daily TV or electronic games of 2-3 hours or more" scored the lowest, representing the lowest health index. Concluding from the above, most Taiwanese 9-12-year-old children are in good physical condition with favorable sleeping and eating habits but lack routine exercises.

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<sup>76</sup> According to the 2019 "Growth Curve" published Health Promotion Administration, Ministry of Health Affairs, the standard curve is based on data collected in 1997 from 7-18-year-old Taiwanese students scoring higher than the 25 percentiles in all four categories (800/1600-meter running, bent-knee sit-up, standing long jump, sit & reach test)

Table 3 Physical Health Index

<b>Height &amp; Weight</b>	<b>65</b>
(1) I have tried to control my weight (once or more)	67
(2) I am satisfied with my physical image	63
<b>Eating Habits</b>	<b>68</b>
(1) Daily intake of breakfast	86
(2) Daily intake of fruits	69
(3) Daily intake of vegetables	71
(4) Daily intake of soda or sugary drinks	56
(5) Daily intake of high cholesterol foods	59
<b>Sleeping Habits</b>	<b>72</b>
(1) Average of 8 hours sleep daily	78
(2) I am not asleep by 1200 frequently	66
<b>Exercise Habits</b>	<b>53</b>
(1) Daily exercise of at least 1 hour	52
(2) Daily TV or electronic games of 2-3 hours or more	53

## 2. Mental Health Category

### a. Personal Life-I like myself and enjoy life

Children's personal life can be evaluated from whether or not they can smile happily, like themselves, or feel scared and lonely. From table 4, it can be seen that the highest score is among I like myself, I feel great about myself, and I feel good and laugh

happily ranked the highest, indicating a generally healthy life.

Table 4 Personal Life Index

<b>Personal Life Index</b>	<b>68</b>
(1) I feel good and laugh happily	77
(2) I feel bored	57
(3) I feel lonely	63
(4) I feel scared	64
(5) I feel great about myself	68
(6) I like myself	74

b. Family Life-70% parental inference from time to time

As seen in Table 5, most children are very healthy in terms of parental relationships and feel comfortable at home except for “My parents will prohibit me from doing certain things,” which scored a low 46. Further analysis discovered that 70% of the children feel that their parents will frequently or often prohibit them from doing certain things, which reflects parents utilizing intervention from time to time.

Table 5 Family Life Index

<b>Family Life Index</b>	<b>70</b>
(1) I have a good relationship with my parents	82
(2) I feel comfortable at home	83
(3) There are many disputes at home	70

<b>Family Life Index</b>	<b>70</b>
(4) My parents prohibit me from doing certain things	46

c. Peer Interaction and Relationship-Having Positive Peer Relationships

Table 6 shows that children have a good relationship with their peers and enjoy peer interaction. Overall, subjects have positive relationships with their peers with rare cases of being made fun of or bullied.

Table 6 Peer Interaction and Relationships

<b>Peer Interaction and Relationship Index</b>	<b>77</b>
(1) I go out with friends	75
(2) I am liked by my friends and classmates	77
(3) I get along with friends	77
(4) I have experience with being laughed at or bullied in school	78

d. School Life-Children Worry about Their Academic Performance

As seen in Table 7, most subjects interact well with their classes and teachers; the average health index score is 70. The only exception is with the lowest item, "I worry about my academic performance," indicating that children are concerned with their

academic performance at school.

Table 7 School Life Index

<b>School Life Index</b>	<b>68</b>
(1) I can complete my homework without any difficulties	74
(2) My classes are interesting	70
(3) My teacher helps me as my friend	70
(4) I feel neglected by the teacher	69
(5) I worry about my future	66
(6) I worry about my academic performance	58

e. Social Media- My parents frequently complain about me using the internet excessively

According to table 8, “use the internet longer than anticipated” and “Parents complaining about using the internet excessively” are frequent problems encountered in the social media aspect rather than choosing the internet over outdoor activities or feeling depressed when the internet is unavailable.

Table 8 Social Media Index

<b>Social Media Index</b>	<b>60</b>
(1) I use the internet longer than anticipated	52
(2) My parents complain about me using the internet excessively	49
(3) I meet new friends online	71
(4) I feel depressed if I cannot use the internet	66



<b>Social Media Index</b>	<b>60</b>
(5) I rather use the internet than do outdoor activities	62

f. Pandemic Life-Children feel the stress caused by the pandemic in their schoolwork and lifestyle

Table 9 indicates that the index for pandemic life is relatively low and unhealthy. Whether it is worrying about family or schoolwork and routine lifestyle, it is clear that the pandemic triggers stress for children. Further analysis showed that during the pandemic period, besides schooling at home, most of the time is spent on TV, surfing the internet, and electronic games.

Table 9 Pandemic Life Index

<b>Pandemic Life Index</b>	<b>56</b>
(1) I worry about myself or my family getting COVID-19	55
(2) I am stressed about not keeping up with schoolwork	56
(3) I worry about myself or my family going into quarantine	59
(4) The pandemic has impacted my routine lifestyle	54

Lastly, questionnaires for the parents are the same as their children for consistency testing<sup>77</sup> and as an analysis to see if children and parents feel the same in all categories and aspects. The results,

<sup>77</sup> A consistency check is used in statistics to check if the population or sample is consistent

90% of the questions tested  $P\text{-Value} > 0.05$ <sup>78</sup>, suggesting the data received from the children and their parents are relative without differences and that their perceptions are the same.

#### D. Summary

To conclude, 9–12-year-old Taiwanese children’s wellbeing ranks average<sup>79</sup> with an exceptional healthy score in “Peer Interaction and Relationships” while “Pandemic Life” and “Exercise Habits” trail behind. Based on this finding, experts and professionals suggest that the definition of children’s health should expand beyond “illness” but incorporate a balanced lifestyle. Companionship is the best cure, especially in fulfilling the emotional needs of the children. The disruptions generated by the pandemic to work, lifestyle, and mental health to children and parents require further and continuous observations.

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<sup>78</sup> A p-value is an important measure in statistics, when the P-value is lower than 0.05, the greater the statistical significance.

<sup>79</sup> The research is categorized into four groups; a score of 25 or below is the lowest, 25-49 as low, 50-74 as moderate, 75 or above as high.

## V. Conclusion

Habits and behaviors developed within the childhood stages are the foundations of mental wellbeing for a lifetime. These positive behaviors and practices will contribute substantially to the healthy personality and temperament of the individual. A genuinely healthy child is not only without illness but also physically strong, equipped with stable emotions, interpersonal skills, and an active learning attitude. Even though there are abundant children's mental health-related services and agendas from the Taiwan government, there is a lack of consolidation or in-depth discussion as the information is distributed between different health and educational organizations. As a leader in child protection initiatives, PCA Life Taiwan corresponds to the government policies in children's health and protection and, through "the White Paper on Children's Mental Health," proposes four crucial factors with considerable impacts on children's mental development; they are "Family Relationships, Peer Interaction and Relationships, Social Media and Environmental Changes." Through detailed literature reviews and questionnaire implementation, the results were analyzed and transformed into a quantitative "Children's Mental and Physical Health Index." Along with feedbacks and discussions from a multidisciplinary range of professionals, scholars, and doctors, the imperative findings are as below:

### **A. Family Relationships: Family Interactions and Loving Parental Companionship Contributes to Confidence and Happiness Within Children**

Family, including environment, parenting style, marital relationship, parent-child relationship, all plays a pivotal role in children's mental health. From the research 2021 "Children's Mental and Physical Index," children within the sample have good relationships with their parents and feel comfortable at home. However, parents intervene from time to time without overindulging the child. This kind of interaction is correlated to children liking themselves, feeling good about themselves, and having the ability to laugh and feel happy. The finding corresponds to other pieces of literature indicating that children with higher satisfaction towards family life are those with frequent family activities and interactions; more prolonged periods of companionship; a more flexible, democratic, warm, and respecting parenting style with ample love and support

### **B. Peer Relationships: Teacher and Peer Interactions can Stabilize Children's Emotion when Dealing with Academic Stress**

Through interacting with peers, children learn skills such as distinguishing characteristics, competence, cooperation, and negotiation. Peer interactions and mental developments consistently demonstrate positive correlations, and if there are issues with peer relationships, various mental health and adaptability problems will surface. As children get older, peer

interaction will be the key emotional impactor when dealing with academic stress. According to the 2021 “Children’s Mental and Physical Index,” subjects like to interact with their peers, even though they worry about their academic performance, they are not too concerned about the future, have fun in class, and finish their work on time. Literature review consistently demonstrates a positive association between peer interaction relationships and children’s mental health. Positive peer relationships lead to healthier mental developments, and negative relationships might convert into bullying incidents. While only few subjects have experiences with behavior such as being laughed at or bullied, how to maintain children’s well-being to foster positive peer relationships and construct a healthy cycle remains an important topic.

### **C. Social Media: Excessive use of Social Media Impacts Interpersonal Skills, Academic Performance and other Developments Mentally and Physically**

Along with internet advancements, social media is indispensable to children’s daily lives. While it is informative, if addicted, misused, or victimized for cyberbullying, it will negatively impact interpersonal relationships, academic performance, and other mental and physical health developments. The 2021 “Children’s Mental and Physical Health Index” shows that children often use the internet longer than anticipated, and parents frequently complain about the prolonged usage. Align with literature

references, excessive dedication to a single activity such as using the internet could result in an “occupational imbalance,” which disrupts the individual’s wellbeing and relevant developments. In the future, when “social networking” and “online entertainment” are the new norms, how to help children avoid encounters of “cyberbullying” or “internet psychological damages” are important topics in the field of psychology, legal, and education.

#### **D. Environmental Changes: The Pandemic and Lasting Impacts on Children’s Mental Health Require Continuous Attention from Parents, Schools, and the Government**

Environmental-related factors such as living environment, crowdedness, noises, air quality, and light intensity can directly or indirectly impact mental well-being. When dealing with the pandemic outbreak, the disruptions children feel are no less than those of the adults; primarily from the perspective of lack of peer interaction, changes to learning, quarantine, or stress all could result in mental issues for the children. In the 2021 “Children’s Mental and Physical Health Index,” the findings are consistent that subjects sometimes or often worry about being infected or having family members infected with COVID-19, as well as worrying about keeping up with schoolwork or being separated from family due to the quarantine. This type of stress is not only harmful during the pandemic but can transform into other fear and anxiety. The “occupational imbalance” caused by the pandemic triggers not only mental health issues but also physical

disability or vision impairment due to lack of opportunity to exercise and excessive internet usage. The pandemic and its cascading effects on children's wellness deserve continuous attention from everyone.

The focus of "The White Paper on Children's Mental Health" is to foster and initiate preventative measures in children's mental health. In addition, PCA Life Taiwan actively responds to government policies, vigorously elevates public awareness, and endorse parental attention to children's mental development and well-being. As Thought Leader, PCA Life Taiwan will continue its vital social influential role to encourage public recognition and engagement towards children's mental health and protection-related matters.