Factors Affecting Children's Mental Health During the Coronavirus Disease 2019 Pandemic

To the Editor: Coronavirus disease 2019 (COVID-19) has skyrocketed to be the “eye of storm” of a broad spectrum of issues, thus far affecting not only the safety of human life but also the public mental health in the long term. Xie et al1 have been conscious of such a problem and demonstrated that during the outbreak of COVID-19, the decrease of outdoor activities and social interaction may increase the occurrence of children’s depressive symptoms. The result provided straightforward evidence that COVID-19 to some extent has a negative impact on children’s mental health, which indicates that the corresponding approach is urgent to be explored. Yet, several concerns flooded into my mind.

First, with respect to the risk factors of children’s mental health, researchers enrolled some indicators including household income, parental mental or physical health, and parent emotional support. Thereinto, compared with children without MBDDs (mental, behavioral, and developmental disorders), those with MBDDs more often lived in the lowest income category (prevalence ratio [PR], 1.4) while fewer in the highest category (PR, 0.8), which indicated that household income plays an essential role in children’s mental health.2 Additionally, among children living at less than 100% of the federal poverty level, more than 1 in 5 (22%) had MBBD. Simultaneously, children of parents with mood or substance use disorders may be at increased risk of externalizing and internalizing disorders, and the same is true of those who are affected by violence, abuse, poverty, and maltreatment.3 The influence of these factors provokes our curiosity as well. Second, Ghandour et al4 proposed that diagnoses of depression and anxiety are more common with increased age, and behavior problems are more prevalent among children aged 6 to 11 years than children younger or older. Hence, the study of Xie et al1 with a large sample might lay a foundation for further studies among different age groups. Overall, the possibility of residual confounding and more hierarchical explorations are of great interest.

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Lastly, we agree with Liang and Zeng that the income level and other risk factors may lead to children’s mental health problems. When we designed the questionnaire during the quarantine, the primary focus of the questionnaire was to understand the prevalence of anxiety and depressive symptoms among students during the outbreak of coronavirus disease 2019. Thus, we did not collect other risk factors such as income, which is one of the limitations of our study. However, the adverse childhood experiences (ie, parental substance misuse, lack of love/support, and poverty), one of the characteristics of which is chronicity, may cumulatively result in toxic stress and be associated with a greater risk of psychological health problems.5,6 We are planning to follow up this cohort for future study, where we will then have opportunity to collect additional risk factors of interest.

In Reply

We agree with Liang and Zeng, and we do not dispute that their extensive discussion of our findings would be helpful to the JAMA Pediatrics readership. However, we were not allowed for a more in-depth discussion in the Research Letter.1 Liang and Zeng raised great points, which we could respond to herein.

We agree with their argument that parents’ mental health plays an essential role in children's mental health. Additional information regarding parents’ anxiety symptoms, measured by the Self-Rating Anxiety Scale, was collected in this questionnaire. The association of children's and parents' mental health was examined and reported in the Zhu et al article.2 A total of 1264 child-parent pairs were used for analysis, and we found that children with parents who had anxiety symptoms had a greater risk of anxiety symptoms than those whose parents did not have anxiety symptoms (odds ratio, 2.96; 95% CI, 1.28-6.88). Students with a closer parent-child relationship had a decreased risk of reported anxiety symptoms (odds ratio, 0.50; 95% CI, 0.33-0.76).2

Liang and Zeng suggest that diagnoses of depression and anxiety are more common with increased age, and behavior problems are more prevalent among children aged 6 to 11 years. In China, children aged 6 years enter elementary school. The children in the spring semester of grades 2 through 6 tend to have the age range of 7 to 11 years, approximately. We analyzed the association between the grade, instead of age, with the depressive/anxiety symptoms in the Research Letter.1 The odds of depressive symptoms increased with the grade, while there was no trend in the anxiety symptoms. Taking the depressive symptoms as the continuous variable, we performed the additional regression analysis to confirm this observation.1

In addition, in our project, we evaluated the behavioral problems using the Strengths and Difficulties Questionnaire and found that the prevalence of behavioral problems in children varied from 4.7% to 10.3%. When compared with a previous study,3 the behavioral problems in children confined to home for approximately 1 month were not obviously increased. This might be explained by the hypothesis that the risk factors play a prolonged and cumulative role in affecting children’s behavior problems.4 Moreover, the resiliency factors (ie, close parent-child relationships) may protect the children from the short-term exposure to disaster.