

SHORT REPORT

# COVID-19 and mental health of primary school children: Comparison of 2019 and 2020

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**Abstract**

**Introduction:** It is believed that the COVID-19 pandemic and associated global school closures may have an adverse effect on children's mental health.

**Methods:** We performed repeated measures of the mental health of children attending one primary school in Ireland before and during the quarantine phase of the first wave of the pandemic. We used the 'My Feelings Form', which is a 14-item colourful self-report measure which was completed in the classroom in 2019 and via postal survey in 2020.

**Results:** We had an 87% response rate in 2019 and a 35% response rate via postal return in 2020. We found no evidence of a change in mean measures of mental health between 2019 and 2020, in the 35% who responded in 2020.

**Conclusion:** There is a cohort of children who were not adversely affected by the first wave of COVID-19 pandemic and associated school closures in Ireland.

**KEYWORDS**

child psychiatry, children, COVID-19, emotional well-being, mental health

## 1 | INTRODUCTION

The World Health Organization declared the COVID-19 outbreak as a pandemic on 11 March 2020. The severity of associated symptoms, as well as the speed at which it spread, led to the rapid implementation of public information campaigns and policies to reduce the speed of transmission. In Ireland, these included social distancing of 2 m, information about cough etiquette and correct hand washing technique and later the wearing of face masks in public/shopping areas. On 13 March 2020, all schools and childcare facilities in Ireland were closed, followed by a full nationwide quarantine on 27 March 2020. All educational and extracurricular activities for the remainder of the academic year (until the end of June 2020) were closed.

It is believed that the COVID-19 quarantine and social isolation may have a negative impact on the mental health of children internationally: systematic reviews reported that children and adolescents are likely to experience high rates of depression and anxiety and that there may be greater need for mental health services in the future, especially for vulnerable children (Deolmi & Pisani, 2020; Loades et al., 2020). However, a relative lack of empirical research on the topic of mental health in children in the context of COVID-19 has been noted, with methodological limitations to studies which have been published, such as a lack of pre-COVID-19 comparative baseline data (Racine et al., 2020). Some studies suggested that children may have increased psychological distress during COVID-19 restrictions based on relatively small numbers of participants in online surveys where large numbers of families were invited to report current

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symptoms, thus introducing the possibility of response pattern bias (Duan et al., 2020; Mactavish et al., 2021). Baseline data were collected using retrospective recall, introducing further bias (Mactavish et al., 2021). In contrast, our study compares pre-COVID data (June 2019) from primary school children, aged approximately 8–13 years, and data collected during the quarantine phase (June 2020) attending the same school, using a self-report measure.

## 2 | METHODS

### 2.1 | Measure

The My Feelings Form (MFF) is a 14-item colourful self-report form which was developed in conjunction with children, parents and mental health professionals to measure the emotional well-being and mental health of young children, using cartoon pictures and emoji's (Mulroy et al., 2018; Sresthaporn et al., 2019). The form uses emoji presented in a 5-point likert scale, scored 0–4, with a high score indicating more symptoms. Children are asked to rate if they feel happy, sad, angry or bored using emojis of different size and are also asked to rate statements which are supported by cartoons such as 'I hurt myself on purpose', 'I have worries', 'I feel sick', 'I'm afraid' and 'I can tell someone how I feel'. The form has been shown to have a broad range and to have good test–retest reliability (Mulroy et al., 2018; Sresthaporn et al., 2019).

### 2.2 | Procedure

The study received ethics approval from the appropriate university ethics committee. The MFF was completed by 314 children aged 5–13 years attending one mixed-gender urban primary school (total 360 children) in the classroom the last week of June 2019 as previously described (Sresthaporn et al., 2019). The MFF was distributed again along with parental consent and child assent forms to 240 children from third to sixth class inclusive (approximately ages 8–13 years old) in the same school via postal survey addressed to the parents, in the last week of June 2020, during school closure and restrictions in Ireland. Parents had prior notification of the study via the school newsletter; postal surveys were posted by the school and returned there anonymously in prepaid envelopes. Data were recorded in Microsoft Excel (2016) and analysed using SPSS 26.

The mean, range and standard deviation for the total MFF score and each item score were calculated separately for the 2019 and 2020 data for third class (year 5) to sixth class (year 8) children and compared using independent *t*-tests (see Figure 1).

## 3 | RESULTS

A total of 83 forms were returned in 2020, which is a 35% response rate and compares with an 87% response rate in 2019

### Key Messages

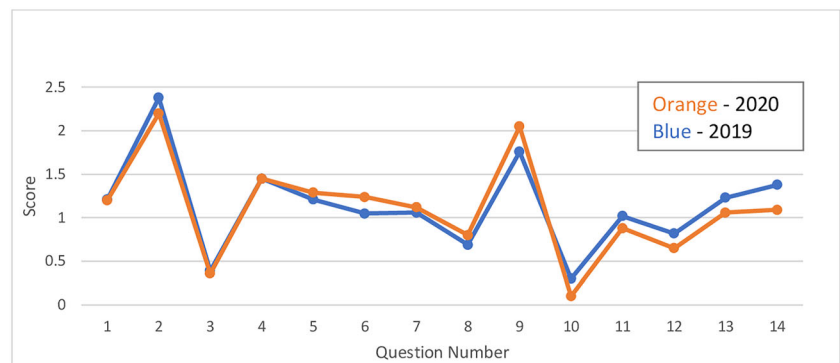
- COVID-19 restrictions may have an adverse effect on children's current and future mental health
- There are few empirical studies on the effect of COVID-19 on children's mental health
- Some existing studies lack self-report data or lack comparison pre-COVID-19 and post-COVID-19 data
- We found no difference in the average mental health of primary school children during the first quarantine, compared with 12 months previously
- Future research should look separately at the effect of the pandemic on young children and adolescents

using classroom-based assessments. These were compared with the third to sixth class 2019 data ( $N = 209$ ). There was no significant difference in the mean total MFF score in 2019 versus 2020 ( $15.84 \pm 5.97$  vs.  $15.27 \pm 5.33$ ), and the response pattern for each item in the MFF was remarkably similar in 2019 and in 2020 (Figure 1). Comparison of means of each of the 14 items using student *t*-test showed some small differences, which were not significant using Bonferroni correction. Children in 2020 reported a slight increase in feeling angry (mean =  $1.24 \pm .71$  vs.  $1.04 \pm .72$ , mean diff =  $.197$ , sig =  $.034$ ) and feeling bored (mean =  $2.05 \pm 1.09$  vs.  $1.76 \pm .97$ , mean diff =  $.29$ , sig =  $.03$ ), and they also reported that they were *less* likely to hurt themselves on purpose in 2020 (mean score of  $.12 \pm .40$  vs. score of  $.30 \pm .62$ ), with a mean difference of  $-.181$ , sig =  $.004$ ), though these findings were not statistically significant using Bonferroni correction.

## 4 | DISCUSSION

We did not find any major evidence of a change of mental health among primary school children aged approximately 8–13 years during the first period of school closure due to COVID-19 in Ireland. At the point where the survey was circulated in 2020, all educational and childcare facilities and most sporting facilities were closed; exercise within a 5-km radius was permitted. People were permitted to meet with three others outdoors, within 5 km of home, while maintaining 2-m social distancing. A limited number of shops had re-opened, but all non-essential travel off the island of Ireland was not allowed, thus cancelling many family holidays or visits to relatives abroad. A number of workplaces such as construction work had re-opened. Children who responded to our survey either were not adversely affected by the pandemic or any dis-improvements in some households were balanced by improvements in others. Children may have enjoyed increased time spent with their parents, many of whom were working from home or furloughed.

**FIGURE 1** Comparison of mental health of primary school children in June 2019 and June 2020



Our findings differ considerably from other reports internationally, where children reported considerable levels of anxiety and depression during isolation due to the coronavirus epidemic, in online surveys, which could have a response bias (Duan et al., 2020; Mactavish et al., 2021). A study performed *in schools* in China found greater mental health symptoms when children returned after school closures than before closures, with a high response rate (Zhang et al., 2020). However, we are not aware of other published ‘before and after’ data from the same school in Europe. It should be noted that while we found no significant change in children’s mental health, there are reports of increased calls to child support lines and increased police attendance at domestic abuse incidents in Ireland during the pandemic, suggesting that there may be a cohort of vulnerable children who may be at risk of developing mental health difficulties. It is possible that vulnerable children and families did not respond to our postal survey or that there were local protective factors for children in the school in Ireland. The schoolteachers in Ireland tried to maintain contact with families during the period of quarantine, and many of the families lived within walking distance of each other, which may have facilitated limited social contact for children. It is also possible that primary school children (up to age 13 years on average) may be less affected by the pandemic than adolescents. Studies which include adolescents may show greater differences in emotional well-being than studies which are limited to primary school children.

The main limitation of our study is that we performed a postal survey in 2020, though our response rate compares favourably with other postal surveys, which can have a 20% participation. However, our response rate of 35% may be greater than that of online surveys and convenience samples, where a vast number of families are invited to participate and it is not possible to calculate the response rate. It would be interesting to repeat the study in schools in various socio-economic areas and at various time-points in the pandemic. We would like to repeat the study in the classroom when children are back in school. Brief interviews with children to enquire about their experiences during the period of restrictions may help us understand their challenges. It is possible that the full impact of the pandemic on children’s mental health may occur later, when the economic and social impacts become more apparent.

In summary, our study found that there is a group of young children who were generally unaffected by the pandemic, representing 35% of those invited to respond to our postal survey, but we cannot comment about the mental health of the children who did not respond to the survey.

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#### CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

#### ETHICS STATEMENT

This study received ethics approval from the University College Dublin Human Research Ethics Committee.

#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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