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A Study of Anxiety Symptoms in Children and Adolescents during the COVID-19 Pandemic in Qatar

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Abstract: Background: There is clear evidence showing an increase in mental health symptoms along with an increased demand for mental health services since the start of the COVID-19 pandemic. Objective: This study aimed to determine the rates of elevated anxiety symptoms in children during the COVID-19 pandemic in the state of Qatar. It also explored any correlated factors. Method: A cross-sectional, questionnaire-based study with 199 participants (children aged 6–16 years) consulting a dental care center. We used the original English version as well as a previously validated Arabic version of the Parent Spence Children's Anxiety Scale to measure anxiety symptoms. Results: A total of 29.6% (n = 59) of our sample met the respective elevated cut-off score for overall anxiety disorder. The largest group among the children was elevated levels of physical injury fears 37.6% (n = 75), followed by Social Phobia 36.1% (n = 72). Younger children showed significantly higher scores for total anxiety, separation anxiety, physical injury fears, and generalized anxiety score. Among the gender groups, females reported significantly higher scores of General anxiety disorder. When comparing natives to expatriates, expatriates showed higher scores for total anxiety, physical injury fears score, social phobia score, and generalized anxiety. Conclusions: Overall, this study shows increased rates of clinically elevated anxiety symptoms in children during the COVID-19 pandemic in the state of Qatar. Younger children, females, and expatriates were more vulnerable to the psychological impact of the COVID-19 pandemic. This study highlights the specific psychological vulnerability of this population group during major health crises like the current pandemic.

Keywords: child; adolescent; anxiety disorders; COVID-19 pandemic

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1. Introduction

Anxiety disorders are one of the most common forms of psychopathology that affect children and adolescents. Unfortunately, most of them remain undiagnosed and not treated [1].

Anxiety is the body's reaction to perceived danger. Usually considered a primary and common emotion, it may be expressed in mild or severe forms throughout infancy and childhood. Anxiety is essential to protect us and promote our survival. It is considered problematic if the concerns are unreasonable and disproportionate for the child's developmental stage; frequent, severe, and persistent despite support and reassurance; and consequently considered excessive. This can lead to significant distress or dysfunction in daily life [2]. It can be particularly difficult to distinguish pathological anxiety from normal anxiety, especially in youths since there are numerous fears and anxieties that children experience throughout their childhood as part of normal development [3].

Early detection and appropriate management could decrease the effect of anxiety on academic performance and social functioning in youth and could decrease the likelihood of anxiety disorders persisting in adults.

It appears that people's mental well-being can be adversely impacted by pandemics and other health disasters, leading to an increase in rates of serious mental illness [4]. Following the announcement of COVID-19 as an international health threat, the global population clearly faced increasing distress and anxiety caused by social isolation, quarantining, and financial hardship [5,6]. As a result of these changes, personal, social, and occupational functioning was profoundly affected, and the psychological impact was therefore thought to be considerable [7].

These dramatic changes took place in children's daily routines, in particular. It is important to note that children suffer from growing isolation and missed opportunities. They also suffer from the closure of schools, increased stress at home, and a lack of interaction with their peers. These factors are all potential precipitators of mental health problems and emotional distress [8].

As a result, more mental health symptoms emerged in the context of the outbreak and were associated with rising demand for mental health services. It is believed that children and adolescents suffered the highest increase in psychological distress during this period of time [7]. Several studies have revealed a high rate of mental health issues in children and adolescents during the COVID-19 outbreak [9,10].

This study aimed to examine levels of elevated overall anxiety as well as specific anxiety symptoms during the pandemic in Qatar among children and adolescents who had no previous diagnosis or problems with anxiety and to determine any correlated factors.

2. Methods

2.1. Methods Design and Participants

The present cross-sectional study took place during the outbreak of COVID-19 infection in Qatar. Parents of children attending the pediatric dental services at Hamad Dental center and Al-Khor hospital were approached to take part in this study and assessed for eligibility. In this study, an anxiety assessment was conducted as part of a broader project for this population.

The study involved 199 children and their parents who met the eligibility criteria outlined above and gave their consent to participate.

Inclusion criteria were parents with a child between the ages of 6 and 16, fit and healthy, and with good command of Arabic or English.

Children who were formerly diagnosed with a mental disorder or neurological condition, intellectual disability of more than mild severity, critically ill children, parents with mental health issues, and non-fluent speakers of English or Arabic were excluded from this study.

2.2. Ethical Considerations and Data Collection

Prior approval was obtained from the Medical Research Center (MRC-01-20-923) and the Institutional Review Board (IRB) of Hamad Medical Corporation, Qatar.

Data collection was conducted from January to December 2021.

Parents of children attending pediatric dental services at Hamad Dental center and Al-Khor hospital were invited to participate in our research. Parents and their children participating in the study were provided with all relevant information. This includes the aim of the study and implications for clinical care, as well as confidentiality provisions through an invitation form and script designed for this study, provided in English and Arabic. We obtained informed, written consent from the parent and the child (if applicable).

Consented parents were interviewed. First, a face-to-face interview by paediatric dentists was held during their appointment time, where study participants were asked to answer questions covering demographic data: parent's age, child's age, child's BMI,

and pre-existing mental health conditions. Later, there was a telephone interview by the psychiatric team at HMC, where they asked questions covering the development of anxiety.

2.3. Measures

Parent Spence Children's Anxiety Scale (SCAS-P) was used in the original English version along with the validated Arabic version [11,12].

The SCAS-P is a commonly used tool to assess symptoms of anxiety disorders in children and adolescents. Originally developed for use in Australian communities, it has since been translated and validated across 17 countries for its use with children and adolescents [13]. It should be noted that the SCAS is not an adaptation of a tool designed for adults. Therefore, it takes into account the differences in symptoms between children and adults who suffer from anxiety disorders. A number of international studies have used the scale for both clinical and research purposes [14]. The instrument is also considered a valuable tool in cross-cultural studies [15].

The parent version of the Spence Children's anxiety scale appears to have good psychometric characteristics, which makes it highly useful for both empirical and clinical research [14]. The test is simple and quick and takes approximately 10 min to complete.

The SCAS-P was developed to assess the severity of anxiety symptoms broadly in line with the dimensions of anxiety disorder proposed by the DSM-IV [14]. The scale assesses six domains of anxiety, namely, generalized anxiety, panic/agoraphobia, social phobia, separation anxiety, obsessive–compulsive disorder, and physical injury fears. Additionally, the scale has also been used to identify groups of children who are vulnerable to developing anxiety disorders. In addition, it has been used to monitor the outcome of interventions to prevent the onset of anxiety.

The Spence Children's Anxiety Scale (SCAS) is designed to measure symptoms of anxiety, generally, in accordance with the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition [14]. Six types of anxiety can be measured using the scale: generalized anxiety, panic/agoraphobia, separation anxiety, social phobia, obsessive–compulsive disorder, and physical injury fears. Additionally, SCAS-P can be employed as a screening tool for children who are vulnerable to developing anxiety disorders due to elevated levels of anxiety.

The scale is composed of 38 items and one free-text item. The instrument provides an overall measure of anxiety along with a score on each of the six subscales that address different dimensions of anxiety. In regard to the 38 anxiety items, 6 represent separation anxiety, 6 represent social phobia, 6 represent obsessive–compulsive symptoms, 6 reflect panic/3 agoraphobia, 6 reflect generalized anxiety/overanxious symptoms, and 5 pertain to fear of physical injury. Items relating to each anxiety disorder are distributed randomly across the questionnaire. To complete the scale, parents must rate on a 4-point scale, from never (0), sometimes (1), often (2), and always (3)—indicating how often each item occurs. There is no specific period of time for evaluating symptoms.

The scale has shown good factor invariance of 6 factors across age groups, genders, and cultures. The test has also demonstrated a high level of discriminant validity between children with anxiety disorders and those with no clinical anxiety [16]. T-scores are used in order to determine when anxiety symptoms are beyond the levels considered normal in comparable age and gender groups in the community. These are standardized scores based on the total score distribution within the sample population. A cut-off point for elevated anxiety levels is determined using age- and gender-specific T-scores.

2.4. Statistical Analysis

Our statistical analysis was conducted using the SPSS version 25 software program (Statistical Package for Social Sciences). The significance of the statistics was determined by the p-value being less than 0.05. Descriptive statistics were reported as frequencies and percentages. A Student t-test was used for the analysis of continuous data. We presented the

results as a mean and standard deviation (SD). Analyses of categorical data were conducted using the Chi-square test. The results were presented as frequencies and percentages.

3. Results

3.1. Descriptive Statistics

3.1.1. Study Characteristics

This study examined 199 children who attended a pediatric dental center.

The results of our study, as summarized in Table 1, show that the mean age of our sample was 9.33 years (SD = 3.17), ranging from 6 to 16 years. A total of 55.7% of the participants were male (*n* = 111). The percentage of native Qataris was 75.37% (*n* = 151).

Table 1. Sociodemographic and clinical characteristics of our study sample.

	***n* or Mean**	**SD or %**
Age	9.33	3.17
Age groups		
6–9 years	120	60.3%
10–16 years	79	39.9%
Sex		
Boys	111	55.7%
Girls	88	44.3%
Residency status		
Native Qataris	151	75.8%
Expatriates	48	24.2%
Living situation		
With both parents	189	94.9%
With one parent	10	5.1%
Affected by COVID-19		
Child himself/herself	28	14.1%
One family member	49	24.6%
No one	122	61.3%
Children with mental health problems in the past		
yes	8	4%
no	191	96%
Parents with mental health problems		
Yes	5	2.5%
No	194	97.5%

Approximately 94.9% of children live with both parents (*n* = 189). COVID-19 directly affected 14.07 percent of participants (*n* = 28), 16.08% (*n* = 32) have a close family member who was affected by COVID-19, and 8,54% (*n* = 17) have a close relative who has been affected by COVID-19.

The proportion of children who sought help for mental health issues in the past was 4% (*n* = 8), and the percentage of children who had a parent seeking help or receiving treatment for mental health issues was 2% (*n* = 5).

3.1.2. Pooled Prevalence of Clinically Elevated Anxiety Symptoms in Children and Adolescents during COVID-19 Pandemic

A total of 29.6% (*n* = 59) of our sample met the respective elevated cut-off score for overall anxiety disorder. Physical injury fears (PIF) were the prevalent symptoms among our participants 37.6% (*n* = 75), followed by social phobia (SP) 36.1% (*n* = 72), separation anxiety (SA) 35.1% (*n* = 70), generalized anxiety disorder (GAD) 33.1% (*n* = 66), panic/agoraphobia (PA) 22.6% (*n* = 45), and obsessive–compulsive disorder (OCD) 21.6%

(*n* = 43). The prevalence of overall and sub-scales anxiety among gender and age groups are outlined in Table 2.

Table 2. Prevalence of overall and sub-scale anxiety among gender and age groups.

	Male 6–9 ***n* = 71**		**Male 10–16** ***n* = 40**		**Female 6–9** ***n* = 49**		**Female 10–16** ***n* = 39**		**Total Sample** ***n* = 199**
	Cut Off Score	***n* (%)**	**Cut Off Score**	***n* (%)**	**Cut Off Score**	***n* (%)**	**Cut Off Score**	***n* (%)**	***n* (%)**
Anxiety status	≥26	23 (32.3%)	≥24	6 (15%)	≥28	21 (42.8%)	≥27	9 (23%)	59 (29.6%)
PA status	≥2	18 (25.3%)	≥2	6 (15%)	≥2	11 (22.4%)	≥2	10 (25.6%)	45 (22.6%)
SA status	≥7	29 (40.8%)	≥5	9 (22.5%)	≥7	22 (44.8%)	≥6	10 (25.6%)	70 (35.1%)
PIF	≥5	35 (49.3%)	≥5	5 (12.5%)	≥6	22 (44.8%)	≥5	13 (33.3%)	75 (37.6%)
SP	≥7	22 (30.9%)	≥6	18 (45%)	≥7	19 (38.7%)	≥7	13 (33.3%)	72 (36.1%)
OCD	≥3	15 (21.1%)	≥2	6 (15%)	≥3	8 (16.3%)	≥2	14 (35.8%)	43 (21.6%)
GAD	≥5	26 (36.6%)	≥5	5 (12.5%)	≥5	23 (46.9%)	≥5	12 (30.7%)	66 (33.1%)

The mean score for overall anxiety disorder was 20.9 ± 14.2. The mean scores for each of the subscales were as follows: generalized anxiety 3.8 ± 3.2, obsessive–compulsive 1.2 ± 2.0, physical injury fears 4.42 ± 3.8, social phobia 5.4 ± 3.8, panic/agoraphobia 1 ± 1.9, and separation anxiety 5 ± 4.2 (Table 3).

Table 3. Elevated overall anxiety and sub-scale scores on the Spence Children's Anxiety Scale.

	n	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Total Anxiety score	199	0	75	20.93	14.265
Total PA score	199	0	13	1.00	1.987
Total SA score	199	0	17	5.04	4.258
Total PIF score	199	0	14	4.42	3.802
Total SP score	199	0	16	5.44	3.851
Total OCD score	199	0	12	1.22	2.035
Total GAD score	199	0	18	3.81	3.226

3.2. Analytical Study

A comparison of anxiety scores between the two different age groups revealed a mean anxiety score of 23.87 among young children (6–9 years), compared to 16.62 among older children (10–16 years). The difference between the 2 scores was statistically significant ($p = 0.00$) (Table 4). The mean score was significantly higher among the younger children for the separation anxiety score ($p = 0.00$), physical injury fears score ($p = 0.00$), and generalized anxiety score ($p = 0.03$). The mean score of social phobia was slightly higher among the older children with no significant difference.

Within the gender groups, females demonstrated higher scores for overall anxiety disorder (23) when compared with males (19.24) (Table 5). Higher scores were also reported among females for all anxiety subscales. However, only the GAD score showed significant differences between the two groups.

When comparing native Qataris to expats, higher scores for total and subscales anxiety were reported among expats (Table 6). The difference of scores between the two groups was significant for the total anxiety score (0 = 0.008), physical injury fears score ($p = 0.01$), social phobia score ($p = 0.03$), and generalized anxiety score ($p = 0.003$).

Table 4. Total and subscales anxiety scores among the two age groups.

	6–9 Years	10–16 Years	*p*-Value
	Mean ± (SD)		
Total anxiety score	23.87 ± (14.6)	16.62 ± (12.5)	**0.00** *
Total PA score	1.09 ± (2)	0.87 ± (1.9)	0.45
Total SA score	6.25 ± (4.4)	3.27 ± (3.1)	**0.00** *
Total PIF score	5.37 ± (3.9)	2.94 ± (2.9)	**0.00** *
Total SP score	5.42 ± (3.9)	5.52 ± (3.7)	0.86
Total OCD score	1.36 ± (2.1)	1.03 ± (1.8)	0.24
Total GAD score	4.37 ± (3.3)	3 ± (2.9)	**0.003** *

* Significant value ($p < 0.05$) shown in bold.

Table 5. Total and subscales anxiety scores among gender groups.

	Male	Female	*p*-Value
	Mean ± (SD)		
Total anxiety score	19.24 ± (12.07)	23 ± (16.4)	**0.076** *
Total PA score	0.88 ± (1.7)	1.17 ± (2.2)	0.31
Total SA score	4.83 ± (3.9)	5.29 ± (4.5)	0.45
Total PIF score	4.06 ± (3.7)	4.83 ± (3.7)	0.16
Total SP score	5.05 ± (3.4)	5.93 ± (4.2)	0.11
Total OCD score	1.13 ± (1.8)	1.31 ± (2.2)	0.53
Total GAD score	3.29 ± (2.6)	4.47 ± (3.7)	**0.01** *

* Significant value ($p < 0.05$) shown in bold.

Table 6. Total and subscales anxiety scores among native Qataris vs. expatriates.

	Natives	Expatriates	*p*-Value
	Mean ± (SD)		
Total anxiety score	19.43 ± (14)	25.69 ± (14.2)	**0.008** *
Total PA score	0.97 ± (1.9)	1.06 ± (2)	0.788
Total SA score	4.77 ± (4.1)	5.85 ± (4.5)	0.125
Total PIF score	4.04 ± (3.5)	5.67 ± (4.2)	**0.010** *
Total SP score	5.11 ± (3.8)	6.48 ± (3.5)	**0.033** *
Total OCD score	1.09 ± (1.9)	1.63 ± (2.2)	0.116
Total GAD score	3.44 ± (3)	5 ± (3.4)	**0.003** *

* Significant value ($p < 0.05$) shown in bold.

4. Discussion

4.1. Prevalence of Anxiety Symptoms

In more than one-fourth of the participants, overall anxiety disorder scores were elevated. Several empirical studies have established that anxiety disorders are some of the most common mental disorders that occur during childhood and adolescence. Moreover, many fears and anxieties are considered to be a natural component of the developmental process [17,18].

It is noteworthy that our anxiety symptoms rates were higher than those observed prior to the pandemic. In 2009, Beesdo et al. found a lifetime prevalence of 15–20% in children and adolescents [3,18]. In 2011, Costello and al. reported a rate of 12.3% in childhood and 11% in adolescence [19].

It is important to note that we do not have available published data regarding the prevalence of anxiety symptoms in youths before the pandemic in Qatar in order to evaluate the true impact of the pandemic on the emergence of anxiety symptoms. However, when comparing our findings to those found in other Middle Eastern countries, our results are higher. In fact, a systematic review of the literature from the six Golf countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) showed that

the pooled prevalence of anxiety in the total sample, assessed by the Mini-International Neuropsychiatric Interview for Children and Adolescents, was 17.27% [20].

Our findings are also greater than those observed elsewhere for similar populations. Based on a systematic review of data pertaining to the period between 1 January 2020, and 29 January 2021, which examined the prevalence of major depressive and anxiety disorders during the COVID-19 pandemic, there has been a significant increase in the prevalence of anxiety disorders in 2020, which has been correlated with an increase in COVID-19 cases and a reduced level of mobility. Researchers reported an increase of 25 percent in anxiety disorders across the world [21].

In comparison to previous reports during the pandemic, our rate falls into the high range. According to a meta-analysis involving 29 studies on mental illness in youths during the COVID-19 pandemic, the prevalence of elevated anxiety symptoms was 20.5%, and those studies conducted during the pandemic showed higher levels of clinically elevated anxiety symptoms [8]. Furthermore, a systematic review and meta-analysis including 23 studies assessing anxiety disorders over the period of the COVID-19 outbreak during 2019 and 2020 revealed a prevalence of 26% for anxiety disorders in children and adolescents living in 2 countries (China and Turkey) [22].

When compared to a study exploring the psychological impact of the COVID-19 pandemic on adults and children in the United Arab Emirates, our study revealed higher rates of anxiety. In this study, it was found that a quarter of children reported having emotional problems (24.6%), and the level of anxiety was measured using the emotional symptoms subscale on the strengths and difficulties questionnaire [23].

Based on the published evidence and our findings, we believe that these rates are likely higher than usual for Qatar. The increase is most likely due to the impact of the COVID-19 pandemic.

It is also reported that countries most affected by the pandemic have seen the highest increase in the prevalence of these disorders [21]. Thus, it is possible that the high rate of anxiety observed in our sample is explained by the high number of COVID-19 cases recorded in Qatar [24].

Therefore, it seems that the COVID-19 crisis and its resulting limitations and repercussions adversely impacted the psychological well-being of youths. There is evidence that infection control measures such as lockdowns, orders to remain at home, reduced public transportation, closings of schools and businesses, lack of peer contact, social isolation, and lack of buffering agents (e.g., teachers, and coaches), played a role in this adverse impact on mental health [25].

Our study further revealed that physical injury anxiety, or fear of physical injury, often evoked by situations or things that are generally perceived to be the objects of specific phobias, represents the most common anxiety disorder. Then came social phobia and separation anxiety. In a similar finding, Silje et al. concluded that specific phobia predominates in early and middle childhood [26]. Additionally, these findings are consistent with previous research suggesting that specific phobias and separation are the most prevalent disorders among youths [3,13].

The high rate of social phobia observed could be explained by the pandemic situation. Based on a recently published systematic review, Loades et al. focused on the potential negative impact of a lack of social interaction on youths during the COVID-19 outbreak. They indicated an association between social anxiety and loneliness. Additionally, there was a stronger correlation between social anxiety and social isolation in comparison to other types of anxiety. This might be due to the fact that social anxiety may be caused by a feeling of threat to one's status or relationships [27]. The pandemic severely restricted the opportunities for children and adolescents to participate in social situations. This reinforced the behavior of people with social anxiety to avoid social situations. Additionally, avoidance leads to further avoidance through negative reinforcement, which destabilizes children and youths with social anxiety [28].

Higher scores of general anxiety, physical injury fears, separation anxiety, and generalized anxiety were observed in younger children (age range 6 to 9), while the difference in scores of social phobia, panic agoraphobia, and OCD was not significant between the 2 groups of age.

It was well-established that separation anxiety symptoms decrease with age [29]. Muris et al., showed that separation anxiety symptoms were negatively associated with age in a community sample of preadolescents and adolescents [30]. It is thought that this condition is a form of developmental fear tending to decrease with age. However, it can also be an anxiety disorder with early onset [13]. Actually, separation anxiety tends to begin early, typically before the age of twelve [31].

In line with our finding that younger participants showed higher scores of generalized anxiety, a Co-SPACE (COVID-19 Supporting Parents, Adolescents and Children in Epidemics) survey conducted among 1500 parents in the United Kingdom revealed higher levels of COVID-19-related fears and worries in young children (4–10 years old) in comparison to older children and adolescents (aged 11–16 years) [32]. Even though older children and adolescents are more conscious about the COVID pandemic and the potential risks it poses, parents may not be privy to the exact nature of their adolescents' feelings, while younger children may more freely express their fears to their parents.

4.2. Factors Correlated to Anxiety Symptoms

In our study, we found that young age is associated with general anxiety, separation anxiety, physical injury fears, and generalized anxiety. This is in contrast with the previous report from Linyan et al. who reported that among children from 8 to 16 years of age, there was a significant positive association between age and almost all factors, except separation anxiety symptoms, which decline significantly with age [33]. Other studies indicate patterns of expression of anxiety symptoms during childhood and age. Symptoms of separation anxiety appear particularly common in children between the ages of 6 and 9 years, generalized anxiety symptoms in those between the ages of 10 and 13 years, and social anxiety symptoms in adolescents between the ages of 14 and 17 years [34].

In our study, social phobia was not significantly associated with age. Similarly, Olivares et al. found no association between age and social phobia in a Spanish community sample of children and adolescents [35].

Both obsessive–compulsive symptoms and panic symptoms were not significantly associated with age. However, findings from previous studies indicate an increased vulnerability to developing panic disorder and obsessive–compulsive disorder with age [13].

The difference between our results and those of previous studies could be attributed in part to the fact that we used a self-reporting tool measuring elevated anxiety disorder symptoms rather than clinical disorders. Actually, results in community studies of preadolescents and adolescents using anxiety self-reports are variable [34].

Based on the results of our study, there was no significant correlation between gender and anxiety symptoms except for general anxiety. Contrary to that, higher rates of anxiety symptoms were reported among girls compared to boys in previous studies for all types of anxiety symptoms [8,34]. Furthermore, these differences between genders have been found in diverse cultures [34]. This may be attributed to a number of factors, such as biological vulnerability, low levels of self-esteem, an increased risk of being exposed to interpersonal violence, as well as stressful experiences due to gender discrimination [36]. The discrepancies between our result and the literature might be attributed to the fact that the sample in our study was mainly represented by young children, and research has shown that differences between genders are minor in childhood and become more evident with age [3].

Expats showed significantly higher scores for total anxiety, physical injury fears, and general anxiety. This is consistent with previous studies showing that migrant children and adolescents, compared with their native counterparts, suffer from increased levels of internalizing, depressive, and anxiety symptoms [37]. Moreover, a study among Aus-

trian adolescents in the context of the COVID-19 outbreak showed that migrant status increases the risk of developing mental health issues which highlights the importance of implementing culturally and linguistically appropriate programs for health promotion and prevention [38]. In the event of a crisis, migrant families likely will suffer from an increased degree of economic and financial hardship. This might increase levels of stress and lead to difficulties in receiving medical care. It is possible that this could exacerbate pre-existing mental problems at the time of the pandemic.

5. Conclusions

Overall, our study shows increased rates of clinically elevated anxiety symptoms in youths during the COVID-19 pandemic in the state of Qatar. Younger children and expatriates were more susceptible to suffering from the psychological effects of the COVID-19 crisis.

This study highlights the psychological vulnerability of this group of people in crisis situations, such as the current crisis. This study also offers additional support to previous research suggesting the implementation of screening and health programs specifically for children during such health crises. Furthermore, this study will serve as a reference point that can be helpful to study the long-term health outcomes of those affected by this pandemic.

Our study had a few limitations that should be considered: the study was based on the parents' accounts. In addition, we did not conduct any diagnostic interviews in our study. Rather, we based our assessment on symptoms to screen different types of anxiety disorders. In our study, candidates were not recruited from the community, but from a dental clinic. Moreover, only children ages 6–16 were included, so our conclusions cannot be generalized.

With a full understanding of its limitations, this is the first study to evaluate the pooled prevalence of general and different types of anxiety among children and adolescents during the COVID-19 pandemic in Qatar. Additionally, we conducted a subgroup analysis of anxiety based on age and gender in order to provide further evidence of potentially vulnerable groups.

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Conflicts of Interest: The authors declare no conflict of interest.

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