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A Preliminary Examination of Key Strategies, Challenges, and Benefits of Remote Learning Expressed by Parents During the COVID-19 Pandemic

Impact and Implications Statement

Parents reported that remote learning during the COVID-19 pandemic was associated with significant challenges as well as positive outcomes, and endorsed specific strategies used to support their child's learning. Such data, along with findings of individual differences associated with having a child with attention-deficit/hyperactivity disorder (ADHD), child age, and geographic location, can be used by educators to inform ongoing and future remote learning practices and develop necessary supports for parents to ensure their child's success.

Abstract

Among the many impacts of the COVID-19 pandemic, one of the most dramatic was the immediate closure of in-person schooling in March/April 2020 when parents were faced with much greater responsibility in supporting their children's learning. Despite this, few studies have examined parents' own perspectives of this experience. The aims of this preliminary study were to (1) identify challenges, benefits, and useful strategies related to remote learning and (2) examine differences in findings across two countries, between parents of youth with and without attention-deficit/hyperactivity disorder (ADHD), and between parents of children and adolescents. To address these aims, parent responses to open-ended questions on the Home Adjustment to COVID-19 Scale (HACS; Becker et al., 2020) were examined across three studies conducted in the United States and Australia ($N=606$, children: 68.5% male, ages 6-17 years). The challenges most frequently expressed by parents included the child's difficulty staying on task (23.8% of parents), lack of motivation (18.3%), remote learning factors (17.8%), and lack of social interaction (14.4%). The most frequently expressed strategy related to using routines and schedules (58.2%) and the biggest benefit was more family time (20.3%). Findings were largely consistent across countries, ADHD status, and age, with a few notable group differences. Given that the most common challenges involved child- (e.g., difficulties with staying on task and motivation), parent- (e.g., balancing remote learning with work responsibilities), and school- (e.g., remote instruction difficulties) related factors, there is a need for improved support across these systems going forward.

Keywords: attention-deficit/hyperactivity disorder; coronavirus; education; virtual learning

Introduction

The year 2020 will be remembered as the year the COVID-19 pandemic dramatically impacted the daily lives of billions of people. Across the globe, social distancing measures were instituted to curb the spread of the virus. One of the most immediate and widespread efforts involved closing schools to in-person learning and shifting students to “remote,” “online,” or “virtual” learning environments (referred to hereafter as remote learning). Parents were asked to assume far more responsibility for educating their child, even as many had other full-time responsibilities and also may have been navigating health, financial, and occupational consequences of the pandemic. Emerging evidence suggests that the shift to remote learning had a significant impact on daily functioning (Maekelae et al., 2020; Thorell et al., 2021), including associations with greater parental stress (American Psychological Association, 2020) and depression (Lee et al., 2020). However, as of this writing, we are unaware of empirical work that has explored the specific challenges or positive aspects of remote learning, or the strategies families found to be most effective, in navigating this unique situation. Such information is critical to help schools better support the individual needs of students and their parents as remote learning continues in many places, and in the future should such measures be required again. To address this gap, the present study used open-ended questions to capture ways that families adapted to, or had difficulties with, the transition to remote learning. Given initial evidence suggesting individual differences in remote learning challenges associated with child psychopathology (Becker, Breaux, et al., 2020; Thorell et al., 2021) and age (McFayden et al., 2021; Thorell et al., 2021), frequencies of response themes were compared between parents with and without a child with attention-deficit/hyperactivity disorder (ADHD) and between parents of

children (ages 6-13) and adolescents (age 14-17). Further, data were collected from families in the United States (U.S.) and Australia, providing perspectives across two countries.

School closures in response to the COVID-19 pandemic had a clear impact on families around the world. Across six nations (U.S., Brazil, Colombia, Israel, Germany, Norway), school closings were rated as having the most significant impact on daily functioning, as compared to other government-imposed restrictions (e.g., travel bans; Maekelae et al., 2020). Further, parents' self-reported feelings of preparedness to teach their child at home are negatively associated with levels of parenting stress and depression (Lee et al., 2020). According to a study conducted by the American Psychological Association, 71% of parents reported that managing remote learning is a significant source of stress (American Psychological Association, 2020). Additionally, a large qualitative study of Australian families that asked about COVID-19-related impacts on family life revealed several themes indicating significant challenges and emotional distress resulting from lifestyle changes and new parental demands including remote learning (Evans et al., 2020). Of note, parents also endorsed positive outcomes such as increased opportunities for family time, which may help to mitigate negative effects. Although consistent themes emerged, this work also highlights the individual differences in parents' responses to the pandemic; further, this study did not directly inquire about remote learning. The present study utilizes similar open-ended questions to preliminarily examine common challenges, strategies, and positive outcomes related specifically to remote learning, while also investigating associations with proximal (child) and distal (geographic) factors.

Studies worldwide have demonstrated that the COVID-19 pandemic has negatively impacted children and adolescents with ADHD more than their peers without ADHD (Becker, Breaux, et al., 2020; Breaux et al., 2021; Nonweiler et al., 2020; Sciberras et al., 2020; Wendel et

al., 2020; Zhang et al., 2020). However, to date, only four studies have examined remote learning experiences in samples comprised at least in part of youth with ADHD. First, a study of 238 adolescents (118 with ADHD) found that in comparison to adolescents without ADHD, those with ADHD were reported to have more difficulties with remote learning (Becker, Breaux, et al., 2020). Additionally, parents of adolescents with ADHD endorsed less confidence in managing remote learning and more difficulties supporting remote learning, with greater parent confidence predicting fewer remote learning difficulties in both groups, with a stronger association for the ADHD group. Second, in a sample of 134 adolescents and young adults (ages 13-22 years) with ADHD, difficulties engaging in remote learning was identified as a top problem, endorsed by 23% of parents and 20% of adolescents/young adults (Sibley et al., 2021). Social isolation and motivation problems were also noted as top problems during the pandemic. Third, McFayden et al. (2021) examined predictors of remote learning difficulties among 49 youth (ages 6-17 years) with ADHD and other neurodevelopmental disorders (i.e., specific learning disorders and autism spectrum disorder; 80% with ADHD). Greater child emotion dysregulation, higher levels of parent psychopathology symptoms, and parent employment were each uniquely associated with remote learning difficulties. Fourth, Thorell and colleagues (2021) found that children with a mental health condition (12.3% with ADHD) had more negative experiences with remote learning, as well as more positive experiences, compared to children without a mental health condition, although the size of these effects was small. Of note, across studies (McFayden et al., 2021; Thorell et al., 2021), child age was negatively associated with remote learning difficulties, which supports data showing decreased academic motivation in younger, as compared to older, students (Zaccoletti et al., 2020). Together, these quantitative findings suggest that ADHD diagnosis and younger age were predictive of greater remote learning difficulties, defined

broadly. However, no investigations have examined differences in the specific strategies, challenges, and positive outcomes of remote learning endorsed by parents of youth with or without ADHD, or for children compared to adolescents.

To date, only a few studies have compared family responses to the COVID-19 pandemic and related remote learning practices across countries. For example, parents of Italian children reported fewer psychological and behavioral symptoms than parents of Spanish and Portuguese children in March-April 2020 (Francisco et al., 2020). Regarding remote learning, Zaccoletti et al. (2020) showed decreases in 1st to 9th grade students' academic motivation during COVID-19 lockdowns in both Italy and Portugal, with greater decreases observed among Italian students. In contrast, a study conducted in seven European countries found some differences between countries, but the authors noted that the differences were generally small (Thorell et al., 2021). We are unaware of any studies that have asked parents directly about the challenges of remote learning across different countries, despite the possibility that differences exist. For example, as noted earlier, data from a U.S. sample suggest that the shift to remote learning was more challenging for families of adolescents with ADHD, particularly those receiving school-based services prior to the shutdown, than families of adolescents without ADHD (Becker, Breaux, et al., 2020). It remains unknown whether such challenges were similarly experienced in regions where school-based accommodations are not routinely made for children with ADHD, such as Australia (Zendarski et al., 2020). For these families, shifts to remote learning may have brought different challenges or even benefits for youth with ADHD, such as allowing for more personalized instruction or enabling students to complete tasks at their own pace. As such, in addition to examining ADHD and developmental differences in parental responses related to

remote learning, the present study builds on prior research by examining whether themes in parents' responses differed for youth with ADHD in the U.S. and Australia.

The current study extends prior work by examining responses to three open-ended questions on the Home Adjustment to COVID-19 Scale (HACS; Becker, Quach, et al., 2020) in three independent samples of parents of children and adolescents with and without ADHD across a broad age range (6 –17 years). The HACS is a parent-report measure that was developed to capture the experiences of families regarding access to services and engaging in remote learning during the COVID-19 pandemic. Previous work using one of the samples from the current study utilized quantitative HACS questions to show less parent confidence and more difficulties related to remote learning in families with an adolescent with ADHD compared to families without an adolescent with ADHD (Becker, Breaux, et al., 2020). The present study extends this work by focusing exclusively on open-ended questions from the HACS that provide a unique and rich view of the challenges and positive outcomes, as well as strategies found to be useful, with the transition to remote learning. The use of open-ended questions allows for examination of parent-generated rather than investigator-generated responses. Data were collected in the U.S. and Australia, providing a unique opportunity to examine how these shifts in schooling may have differentially impacted families across these countries. The primary aim of this study was to understand parent-generated challenges related to remote learning, the most important strategies or adjustments to help with remote learning, and the biggest benefit or positive outcome related to remote learning. Then, as a second aim, quantitative methods were utilized to examine differences between parents of a) children with and without ADHD; b) children (ages 6-13) and adolescents (ages 14-17); and c) children with ADHD living in the U.S. and Australia.

Methods

Participants and Procedures

Here we briefly describe the samples, with additional demographic information about each sample, as well as the total sample, provided in Table S1.

Sample 1 - Children with and without ADHD in the U.S.

Participants included 250 primary caregivers of 1st-6th grade children (156 boys, 62.4%), ages 6-13 years ($M=9.7$, $SD=1.9$), living in the U.S. who were recruited for an online study of parenting during the COVID-19 pandemic that examined differences between families with and without a child with ADHD. Thirty-eight states and the District of Columbia were represented, with the greatest number of participants from New York (16.0%), Ohio (7.6%), and California (6.8%). Children were identified by their parents as predominantly White (81.6%), with 9.2% of the sample identifying as bi-racial/multi-racial, 6.0% identifying as Black, and 2.8% identifying as another race; 1 participant (0.4%) did not provide their child's racial identity. Twenty-eight children (11.2%) were identified as Hispanic/Latinx. Approximately half of participants were reported to have ADHD by parent report ($N=124$; 49.6%). Of these, 79 (63.8%) were reported to have an Individualized Education Program (IEP) or 504 Plan. This final sample was drawn from a larger pool of respondents ($N=286$); 36 participants did not provide codable responses to any of the open-ended questions used in this study and thus were dropped from analyses. Participants included in the analyses had children who were younger ($t[251] = 2.00$, $p < .05$) than participants not included.

Participants in this online study of parenting during the COVID-19 pandemic were recruited nationwide through Internet and social media postings, as well as through Research Match and Qualtrics Survey Services between May 20 and July 4, 2020 while strong social distancing measures and remote schooling were mandated in most states. In addition, families

with a child in the targeted age range who participated in previous studies at the Fordham University Pediatric Emotion Regulation Laboratory (PERL) and provided permission to be contacted were invited via email to participate. Eligible parents were 18 years or older, proficient in English, and had a child in 1st-6th grade with either a diagnosis of ADHD or no psychiatric diagnosis. After reading a brief study description, interested parents clicked a web link to complete eligibility screening questions in a Qualtrics-based online survey. Eligible participants were provided an additional link to review the study information, provide informed consent, and complete the study survey. This study was approved by the Fordham University Institutional Review Board.

Sample 2 - Adolescents with and without ADHD in the U.S.

Participants included 235 adolescents (167 boys; 71.1%) ages 15-17 ($M=16.7$, $SD=0.6$) with and without ADHD and a primary caregiver located primarily in Virginia (42%), Kentucky (33%), and Ohio (23%) in the U.S. The sample identified as predominantly White (82.6%), 6.8% as bi-racial/multi-racial, 6.0% as Black, and 4.7% as another race; 3.8% of the sample identified as Hispanic/Latinx. Among participants with ADHD, 52.6% had an IEP or 504 Plan. From the total sample ($N=238$), three participants did not complete any of the open-ended items used in this study and thus were dropped from analyses.

Participants who had completed a two-year prospective, longitudinal study examining sleep in adolescents with and without ADHD (Becker et al., 2019) who provided permission for further contact pre-COVID-19 ($N=262$; 90.8% retention) were invited to participate in the current study, with COVID-19 data collected online between May 15 and June 14, 2020 during stay-at-home orders. The 238 participants who completed the COVID-19 timepoint did not differ from those who were contacted for possible participation but did not participate, on adolescent

sex, race, ethnicity, ADHD symptoms, or family income ($ps >.07$). For the larger study, inclusion criteria included enrollment in regular education classes, and having an estimated Full Scale IQ ≥ 80 . Exclusion criteria were autism spectrum, bipolar, dissociative, or psychotic disorders; previous diagnosis of an organic sleep disorder; and not meeting criteria for either the ADHD or comparison group. During the initial assessment, all participants underwent a comprehensive ADHD diagnostic evaluation. Adolescents eligible for the ADHD group met all Diagnostic and Statistical Manual for Mental Disorders, Fifth Edition (American Psychiatric Association, 2013) criteria for either ADHD combined or predominantly inattentive presentation on the Children's Interview for Psychiatric Syndromes (ChIPS; Weller et al., 1999). Comparison group parents endorsed <4 symptoms in both domains of ADHD on the ChIPS. Adolescents and parents provided assent and consent for participation and were compensated for participation. This study was approved by the Cincinnati Children's Hospital Medical Center and Virginia Commonwealth University Institutional Review Boards.

Sample 3 - Children and adolescents with ADHD in Australia

Participants included the parents of 121 children and adolescents (92 boys, 76.0%) aged 6-17 ($M=10.7$, $SD=3.0$) with ADHD in Australia. The sample comprised of parents of 94 children aged between 6 to 13 years and 27 adolescents aged between 14 to 17 years. The ADHD COVID-19 Survey is a longitudinal study surveying parents of children with ADHD during the COVID-19 pandemic in Australia. Baseline data were collected between May 4 and June 1, 2020, when social distancing restrictions were in place and most children were required to learn from home.

Participants were recruited through Australian ADHD organizations and support groups, via email and social media sites. Interested parents clicked a link to read the participation

information, complete the eligibility screen, and provide their consent to complete an online survey in REDCap (Harris et al., 2009). Two-hundred twenty-one parents consented to participate in the study. Eligible parents were aged 18 years or above, had a child aged 5-17 years who had been diagnosed with or treated for ADHD, and were living in Australia. To be included in analyses, participants needed to have data available on at least one of the remote learning variables of interest and not be homeschooled ($N=121$). There were no differences between those with and without data available on child and parent demographic factors (e.g., age, sex), as well as child comorbidities or child medication use. The study was approved by the Deakin University ethics committee.

Measure

Home Adjustment to COVID-19 Scale (HACS) (Becker, Quach, et al., 2020)

The HACS is a 41-item parent-report measure that was developed to capture the challenges, and potential benefits, of the COVID-19 pandemic for families, with a primary focus on child mental health and schooling. Specific to remote learning, it includes three composite scores that assess child and parent difficulties as well as parent confidence, which have been analyzed in previous studies (Becker, Breaux, et al., 2020), and the open-ended questions that are the focus of the current investigation. These include Question #39: What is the biggest challenge related to your child learning from home?, Question #37: What do you consider the most important strategy or adjustment to help your child with their learning at home?, and Question #40: What is the biggest benefit/positive outcome related to your child learning from home? The HACS includes an additional open-ended question, “What do you plan to do differently with your child’s learning at home in the next week compared to last week?” which was not included in this study because a large number of parents (i.e., greater than 80% of the

sample) responded with “nothing” or “not applicable.” While previous studies analyzed the remote learning quantitative questions from the HACS (student challenges with remote learning, parent challenges supporting remote learning, and home-school communication, and parent confidence managing remote learning; Becker et al., 2020; McFayden et al., 2021), the current study’s exclusive focus on the open-ended questions allows for an in-depth picture of parents’ experiences with remote learning during the COVID-19 pandemic.

Data Analysis

The principal investigators for the three studies conducted an initial review of parent responses and collectively identified possible common themes for the three questions. These codes were then used in a preliminary round of coding, after which, the principal investigators met again to further revise the coding scheme by adding new codes and modifying or combining existing codes. All responses were then independently coded by two individuals at each study site. On average, across the three questions, over 70% of respondents provided a single response (see Table S2 for details). Coders discussed any discrepancies in coded themes and a consensus code was created for all responses. An “other” code was included for each question for responses that did not fit into any other code. Inter-rater reliability with the consensus code across reviewers and samples as measured by Cohen’s kappa was good to very good (biggest challenge = .79-.88, most important strategy = .73-.87, biggest benefit = .81-.92; Salkind, 2010). The final codes with descriptions and sample quotes can be found in Tables S3-S5.

Group comparisons were conducted for the top five themes identified based on frequency across all participants. As described in the Results below, parental responses here highly heterogeneous with some themes only reflected in a handful of responses. The authors chose to report statistical analyses for the top five themes in an effort to balance small sample sizes with

an interest in providing the reader with several clear “take-aways”. Chi-square tests were used to compare endorsement of these themes for each question based on (1) ADHD status, (2) age, and (3) geographic location. For the first comparison, participants with ADHD in Samples 1 and 2 and all of Sample 3 were combined (youth with ADHD) and compared to participants without ADHD in Samples 1 and 2 (youth without ADHD). For the second comparison, participants in Sample 1 and the participants aged 6-13 in Sample 3 were combined (children) and compared to participants in Sample 2 and the participants ages 14-17 in Sample 3 (adolescents). Finally, for the third comparison, only parents with a child with ADHD in Samples 1 and 2 were combined (U.S. parents) and compared to participants in Sample 3, all of whom had a child with ADHD (Australian parents). For each set of analyses, any participant who provided a codable response for that question was included, resulting in slightly different sample sizes across questions. Given the number of chi-square tests being run, alpha was set to $p < .01$ to reduce the risk of Type I error.

Results

For each question, a complete list and definition of all themes can be found in Tables S3-S5, and frequency data broken down by sample can be found in Tables S6-S8.

Biggest Challenge Related to Remote Learning

As shown in Table S3, parental responses regarding the biggest challenge related to remote learning resulted in 16 distinct themes in addition to responses indicating no challenges in 3.9% of the sample. Rates of endorsement for each challenge separately for the three samples broken down by ADHD status and age can be found in Table S6. The five most frequently noted challenges are described below and listed in Table 1; group differences are shown visually in Figure 1.

1. *Difficulty with Child Staying on Task* was the most frequently noted challenge (23.8%), with rates over 20% across all three samples (Sample 1: 24.4%, Sample 2: 22.8%, Sample 3: 24.6%). Parents of youth with ADHD (28.3%) were significantly more likely than parents of youth without ADHD (17.3%) to endorse difficulty with child staying on task, $\chi^2 = 9.67, p = .002$. Rates of endorsement did not differ significantly ($p < .01$) between parents of children (24.6%) versus adolescents (22.8%), $\chi^2 = 0.28, p = .56$, or U.S. parents (30.2%) and Australian parents (24.6%), of youth with ADHD $\chi^2 = 1.23, p = .268$.
2. *Lack of Child Motivation* was the second most frequently noted challenge (18.3%) and was identified by at least 10% of parents across all three samples (Sample 1: 13.4%, Sample 2: 21.6%, Sample 3: 22.0%). Rates of endorsement did not significantly differ among parents of youth with (18.7%) versus without ADHD (17.7%), $\chi^2 = 0.10, p = .756$, parents of children (15.1%) versus adolescents (22.4%), $\chi^2 = 5.17, p = .023$, and U.S. (17.0%) versus Australian (22.0%) parents of youth with ADHD, $\chi^2 = 1.30, p = .254$.
3. *Factors Related to Remote Instruction* (e.g., limited direct contact with teachers) was identified by 17.8% of parents as the biggest challenge related to remote learning, with this challenge identified by over 10.0% of parents across all three samples (Sample 1: 14.2%, Sample 2: 20.7%, Sample 3: 19.5%). Rates of endorsement did not differ significantly between parents of youth with (17.6%) and without (18.1%) ADHD, $\chi^2 = 0.03, p = .865$, parents of children (15.1%) and adolescents (21.2%), $\chi^2 = 3.73, p = .068$, and U.S. parents (16.6%) and Australian parents (19.5%) of youth with ADHD, $\chi^2 = 0.46, p = .499$.

4. *Lack of Social Interactions* was identified by 14.4% of parents as the biggest challenge related to remote learning, identified by over 10.0% of parents across all three samples (Sample 1: 11.8%, Sample 2: 17.7%, Sample 3: 13.6%). Parents of youth with ADHD (10.1%) were significantly less likely than parents of youth without ADHD (20.6%) to endorse Lack of Social Interactions, $\chi^2 = 12.55, p < .001$. No significant differences were observed between parents of children (12.8%) and adolescents (16.6%), $\chi^2 = 1.75, p = .186$, or between U.S. (8.5%) and Australian (13.6%) parents of youth with ADHD, $\chi^2 = 2.19, p = .139$.
5. *Balancing Remote Learning and Work Responsibilities* was the fifth most frequently stated challenge related to remote learning endorsed by 13.3% of parents (Sample 1: 18.7%, Sample 2: 3.9%, Sample 3: 20.3%). Parents of youth with ADHD (13.6%) did not differ significantly from parents of youth without ADHD (12.8%), $\chi^2 = 0.88, p = .766$. This challenge was endorsed significantly more frequently by parents of children (19.9%) than parents of adolescents (4.6%), $\chi^2 = 29.61, p < .001$, and by Australian parents (20.3%), than U.S. parents (10.2%) of youth with ADHD, $\chi^2 = 6.86, p = .008$.

Most Important Strategy or Adjustment to Help with Remote Learning

As shown in Table S4, parental responses regarding the most important strategy to help with remote learning resulted in 15 distinct themes in addition to responses that indicated resignation (4.3%) or no strategy (2.9%). See Table S7 for the rate of endorsement for each strategy separately for the three samples. The five most frequently noted strategies or adjustments to help with remote learning are described below and listed in Table 2; group differences are shown visually in Figure 2.

1. *Routine, Schedule, Organization, and/or Time Management* was by far the most frequently noted strategy to help with remote learning, identified by over half of parents (58.2%), with high rates across all three samples (Sample 1: 66.2%, Sample 2: 50.2%, Sample 3: 56.4%). Parents of youth with ADHD (53.5%) were significantly less likely than parents of youth without ADHD (64.2%) to endorse this strategy, $\chi^2 = 6.65, p = .0099$. Parents of children (63.4%) were significantly more likely than parents of adolescents (51.0%) to endorse Routine, Schedule, Organization, and/or Time Management, $\chi^2 = 9.17, p = .002$. No significant differences were observed between U.S. (52.0%) and Australian (56.4%) parents of youth with ADHD, $\chi^2 = 0.62, p = .433$.
2. *Active Parent Involvement with Remote Learning* was identified by 27.1% of parents as the most important strategy or adjustment to help with remote learning (Sample 1: 23.5%, Sample 2: 22.1%, Sample 3: 43.6%). Parents of youth with ADHD (32.7%) were significantly more likely than parents of youth without ADHD (18.8%) to endorse this strategy, $\chi^2 = 13.92, p < .001$. No significant differences were found between parents of children (28.9%) and parents of adolescents (24.5%), $\chi^2 = 1.42, p = .233$. Parents of ADHD children from the U.S. (27.1%) were less likely to endorse Active Parent Involvement with Remote Learning than Australian parents (43.6%), $\chi^2 = 9.60, p = .002$.
3. *Creating a Physical Space for Learning* was identified by 20.1% of parents as the most important strategy or adjustment to help with remote learning (Sample 1: 16.7%, Sample 2: 20.4%, Sample 3: 25.6%). No significant group differences in identification of this strategy were found among parents of youth with ADHD

- (18.2%) versus without ADHD (22.5%), $\chi^2 = 1.63, p = .201$, parents of children (19.1%) versus adolescents (21.1%), $\chi^2 = 0.36, p = .548$, and U.S. (14.4%) versus Australian (25.6%) parents of youth with ADHD, $\chi^2 = 6.56, p = .010$.
4. *Goal Reinforcement/Providing Motivation* was identified by 10.3% of parents as the most important strategy or adjustment to help with remote learning (Sample 1: 9.0%, Sample 2: 10.2%, Sample 3: 12.8%). No significant group differences were found for parents of youth with (11.3%) versus without (8.8%) ADHD, $\chi^2 = 0.98, p = .322$, parents of children (10.8%) versus adolescents (9.6%), $\chi^2 = 0.22, p = .637$, and U.S. (10.5%) versus Australian (12.8%) parents of youth with ADHD, $\chi^2 = 0.42, p = .515$.
5. *Providing Breaks for the Child* was identified by 6.4% of parents as the most important strategy or adjustment to help with remote learning (Sample 1: 9.4%, Sample 2: 0.4%, Sample 3: 12.0%). Parents of youth with ADHD (9.0%) were significantly more likely than parents of youth without ADHD (2.5%) to endorse this strategy, $\chi^2 = 9.996, p = .002$. Significant differences were also observed between parents of children (9.8%) and adolescents (1.9%), $\chi^2 = 15.39, p < .001$. No differences were observed between U.S. (7.4%) and Australian parents of youth with ADHD (12.0%), $\chi^2 = 1.96, p = .162$.

Biggest Benefit or Positive Outcome Related to Remote Learning

As shown in Table S5, parental responses regarding the biggest benefit or positive outcome related to remote learning resulted in 18 distinct themes in addition to responses indicating no benefits in 12.0% of the sample. See Table S8 for the rate of endorsement for each benefit separately for the three samples. The five most frequently noted benefits or positive

outcomes related to remote learning across all participants are listed in Table 3 and group differences are shown in Figure 2. The top five benefits or positive outcomes were:

1. *More Family Time* was the most frequently noted benefit or positive outcome related to remote learning (20.3% total; Sample 1: 22.6%, Sample 2: 20.6%, Sample 3: 15.3%). No significant differences were found in frequency of endorsement of More Family Time between parents of youth with ADHD (17.5%) and without ADHD (24.5%), $\chi^2 = 4.20, p = .041$, between parents of children (21.2%) and adolescents (19.3%), $\chi^2 = 0.31, p = .579$, or between U.S. (18.7%) and Australian (15.3%) parents of youth with ADHD, $\chi^2 = 0.64, p = .424$.
2. *More Flexibility in Child's Schedule/Ways of Learning* was identified by 17.8% of parents as the biggest benefit or positive outcome related to remote learning (Sample 1: 9.4%, Sample 2: 25.8%, Sample 3: 18.6%). Parents of youth with ADHD (16.9%) did not significantly differ from parents of youth without ADHD (19.0%) in endorsing More Flexibility in Child's Schedule/Ways of Learning, $\chi^2 = 0.40, p = .528$. Parents of children (12.9%) were significantly less likely than parents of adolescents (25.1%) to endorse More Flexibility in Child's Schedule/Ways of Learning, $\chi^2 = 17.03, p < .001$. No significant differences were observed between U.S. (16.1%) and Australian (18.6%) parents of youth with ADHD, $\chi^2 = 0.36, p = .547$.
3. *Better Parent Understanding of Child's Learning Style, Needs, or Curriculum* was identified by 11.4% of parents as the biggest benefit or positive outcome related to remote learning (Sample 1: 16.1%, Sample 2: 3.0%, Sample 3: 20.3%). Parents of youth with (12.1%) and without (10.5%) ADHD did not differ in endorsement of this

- positive outcome, $\chi^2 = 0.32, p = .571$. Parents of children (18.1%) were significantly more likely than parents of adolescents (3.1%) to endorse Better Parent Understanding of Child's Learning Style, Needs, or Curriculum, $\chi^2 = 32.06, p < .001$. Finally, Australian parents of youth with ADHD (20.3%) endorsed Better Parent Understanding of Child's Learning Style, Needs, or Curriculum more frequently than U.S. parents (7.8%), $\chi^2 = 11.51, p < .001$.
4. *Lower Child Stress or Anxiety* was identified by 8.4% of parents as the biggest benefit or positive outcome related to remote learning, though this benefit was stated by few parents of children in Sample 1 (Sample 1: 2.6%, Sample 2: 8.2%, Sample 3: 22.9%). No significant group differences in endorsement of Lower Child Stress or Anxiety as a positive outcome were observed between parents of youth with ADHD (10.3%) and without ADHD (5.5%) $\chi^2 = 4.34, p = .037$, or between parents of children (6.7%) and adolescents (10.4%), $\chi^2 = 2.54, p = .111$. However, U.S. parents (5.2%) of youth with ADHD were significantly less likely than Australian parents (20.3%) of youth with ADHD to endorse Lower Child Stress or Anxiety, $\chi^2 = 19.23, p < .001$.
5. *Increase in Child's Independence and/or Confidence* was identified by 7.5% of parents as the biggest benefit or positive outcome related to remote learning (Sample 1: 5.1%, Sample 2: 11.6%, Sample 3: 4.2%). No significant group differences were found between parents of youth with (8.0%) and without (6.8%) ADHD, $\chi^2 = 0.34, p = .560$, parents of children (5.2%) and adolescents (10.4%), $\chi^2 = 5.63, p = .018$, or U.S. (10.0%) and Australian (4.2%) parents of youth with ADHD, $\chi^2 = 3.50, p = .061$, in their endorsement of Increase in Child's Independence and/or Confidence.

Finally, it is important to note that a sizeable minority of parents (12.0%) indicated that they perceived there to be no benefit or positive outcome related to remote learning (Sample 1: 12.4%, Sample 2: 9.4%, Sample 3: 16.1%). As indicated in Table 4, these families indicated either no clear benefit, or that remote learning had contributed to worsening functioning for their child. There were no significant differences in parents indicating No Benefit between parents of youth with (13.8%) versus without (9.3%) ADHD, $\chi^2 = 2.72, p = .099$, parents of children (13.2%) versus adolescents (10.4%), $\chi^2 = 1.05, p = .306$, or U.S. parents (12.6%) versus Australian parents of youth with ADHD (16.1%), $\chi^2 = 0.80, p = .371$.

Discussion

The aim of the current study was to gain preliminary insight into the challenges faced by parents, strategies found to be useful, and positive outcomes related to the unprecedented shift to remote learning during the COVID-19 pandemic. Overall, parents provided a wide range of responses with 15-18 themes identified for each open-ended question. That said, there was remarkable consistency in parent responses across the two countries included in this study, as well as across youth ADHD status and age, particularly for challenges, although some differences did emerge which are discussed below. One important finding was that remote learning during COVID-19 presented challenges across multiple levels – for students (e.g., difficulties staying motivated and on task), for caregivers (e.g., balancing remote learning with work responsibilities), and for school systems (e.g., challenges in translating the classroom experience to a virtual format). This suggests that as remote or hybrid learning continues during the COVID-19 pandemic and when it is necessary again in the future, education departments, teachers, and other school professionals (e.g., school counselors) need to consider how they can provide more specific and effective support across each of these levels to promote student

engagement, success, and well-being. Additionally, the strategies noted by parents may have been limited to what they were able to do such as provide routine (endorsed by 58.2% of parents) or create a physical space (endorsed by 20.0% of parents). In considering how these findings may be useful in the future, parents may benefit from virtual workshops or support groups where school personnel and teachers share robust and effective strategies to better manage behaviors and support remote learning.

Challenges with Remote Learning

Parent responses related to the challenges of remote learning were found to represent 16 distinct themes. The most frequently endorsed challenges, collectively identified by over a third of parents, were those related to children's ability to focus on schoolwork and remain motivated. Not surprisingly, the former was endorsed more often by parents of youth with ADHD than those of non-ADHD children. Parents also endorsed external challenges posed by online instruction (e.g., unclear instructions about assignments) and lack of social interactions, as well as their own difficulties balancing remote learning and work responsibilities. Lack of social interactions was less frequently reported as a challenge by parents with a child with ADHD (Figure 1). Because youth with ADHD frequently experience bullying and peer rejection (McQuade & Hoza, 2015), social interaction may not have been pursued, and the lack of social interaction resulting from remote learning may have actually been a positive experience for some. This notion is supported by other work finding reductions in bullying for youth with ADHD during the pandemic (McFayden et al., 2021), though it is also important to note that other research has found social isolation to be the most commonly endorsed problem during the pandemic in adolescents and young adults with ADHD (Sibley et al., 2021). In considering developmental differences, parents of children were four times more likely than parents of adolescents to identify balancing remote

learning and work responsibilities as the greatest challenge (Figure 1). This extends previous findings that parents of younger children report more negative experiences and greater challenges with remote learning than parents of older children (Thorell et al., 2021), and likely reflects the increased amount of attention that younger children require to manage behavior, assist with technology, and oversee schoolwork at home.

Strategies to Support Remote Learning

While 15 themes were identified, over half of parents (58.2%) indicated the most important strategy they used to support remote learning was implementing routines, schedules, organization, and/or time management. As shown in Figure 2, this was endorsed less frequently by parents of youth with ADHD than parents of youth without ADHD, despite the widely recognized organizational and time management skills deficits in children and adolescents with ADHD (DuPaul & Langberg, 2015). Given ADHD is highly heritable (Faraone & Larsson, 2019) and many adults with ADHD struggle with these same organizational and time management difficulties (e.g., Kysow et al., 2017), it may be that parents of youth with ADHD were less able to utilize this strategy relative to parents of youth without ADHD.

The second most frequently endorsed strategy used to support remote learning (endorsed by 27.1% of parents), active parent involvement with remote learning, was endorsed more frequently by parents of youth with ADHD than by parents of youth without ADHD. Further, parents of youth with ADHD also reported that providing breaks to the child was an important strategy more frequently than parents of youth without ADHD. Together, these two strategies may have been implemented to address the greater difficulties that children with ADHD had staying on task during remote learning. Developmental differences were also observed, as parents of children were more likely than parents of adolescents to indicate routines, schedules,

organization, and/or time management to be the most important strategy used (Figure 2), which is likely because children require more structure to support learning similar to what they would be experiencing at school. Parents of children also indicated that providing breaks was the most important strategy more frequently than parents of adolescents, suggesting that parents understood that children cannot be expected to maintain focus and work for long, uninterrupted periods of time. Creating a physical space for learning and providing goal reinforcement and motivation were two strategies that were endorsed across groups, that may reflect differences in household resources (e.g., what space is available) and child characteristics (e.g., whether contingencies help increase child motivation) that were not directly assessed in the current study.

Benefits of Remote Learning

Eighteen themes were identified based on parental responses to the question about benefits and positive outcomes of remote learning. The most frequently endorsed benefit or positive outcome of remote learning was more family time, endorsed by 20.3% of parents, followed by more flexibility in the child's schedule and learning, improved understanding of the child's learning style and curriculum, lower child stress or anxiety, and an observed increase in the child's independence and/or confidence. As shown in Figure 3, compared to parents of adolescents, parents of children were less likely to express that flexibility in the child's schedule and learning was a positive outcome. This is consistent with our finding that these parents were also more likely to report that fostering routine, schedules, organization, and/or time management was the most important strategy to support their child's learning. Parents of children, compared to parents of adolescents, were also more likely to endorse better understanding of the child's curriculum and learning needs as a positive outcome. Finally, lower child stress and anxiety was endorsed as a positive outcome of remote learning, though only by

8.4% of parents. It is possible that decreases in stress and anxiety as a result of remote learning may be confounded by increases in stress and anxiety related to the COVID-19 pandemic more generally. Lastly, it is important to note that 12.0% of families failed to see any positive outcomes or benefits as a result of remote learning, with no group differences.

Differences Among Parents of Youth with ADHD in the U.S. and Australia

Finally, across the themes, only four differences emerged between parents of youth with ADHD in Australia and the U.S, which is consistent with a previous study that found minimal differences in remote learning experiences across seven European countries (Thorell et al., 2021). Specifically, compared to parents in the U.S., parents in Australia more frequently indicated that balancing remote learning and work responsibilities was their greatest challenge. This may reflect differences in parent employment and income, but these were not consistently collected across all three sites and thus could not be examined as contributing factors. It is notable that parents of youth with ADHD from Australia were more likely than U.S. parents to endorse active parent involvement with remote learning as an important strategy. This increased focus on supervising and assisting with remote learning may have made it more difficult for Australian parents to balance work and remote learning responsibilities. Parents in Australia were also more likely than their U.S. counterparts to endorse gaining a better understanding of their child's learning style and reduced child stress and anxiety as positive outcomes. Together, these findings may reflect differences in schooling and supports provided for children with ADHD in the U.S. compared to Australia. For example, adjustments to learning, such as one-to-one academic support, are not routinely provided by schools to young people with ADHD in Australia (Zendarski et al., 2020). Thus, for these families, child anxiety and stress may have been reduced when parents were able to gain a better understanding of their child's learning style

and provide needed support during remote learning; this will need to be examined further in future research. It is also important to note that the Australian sample had a higher rate of pre-existing anxiety difficulties compared to the U.S. samples, and if school is a particular stressor for these youth with ADHD in Australia, then it is not surprising that child stress and anxiety reduced during home learning conditions. These findings highlight the importance of teachers and schools helping parents to understand how their children learn so that they can be more effective in supporting their child's learning at home and reduce stress and anxiety during future times of rapid transitions and chronic stress.

Limitations

The findings of the present study should be considered within the context of several methodological limitations. First, although the inclusion of three samples provided a unique opportunity to evaluate parental responses to remote learning across a diverse population of families of children and adolescents with and without ADHD, it also introduced heterogeneity in inclusion/exclusion criteria, diagnostic assessment, recruitment strategies, and data collection methods, which may have impacted results and limited the generalizability of findings. That said, general consistency in response themes across samples suggests that these data are likely an accurate reflection of parental responses more broadly across populations of parents of children and adolescents with and without ADHD. Second, despite the geographic diversity of the samples, racial, ethnic, and socioeconomic diversity was limited preventing analyses of these important variables in relation to parent responses to remote learning. Parents from different cultural or racial backgrounds, or with less financial security, may have also provided different responses to the open-ended questions. Third, these studies focused on parent views of remote learning and did not include child or educator reports, or objective outcomes (e.g., grades,

percentage of assignments completed), that would be essential to get a complete picture of how remote learning experiences and practices relate to actual academic performance. Fourth, the data reported in this study were collected early in the pandemic when schools were initially closed. It would be informative to evaluate positive and negative impacts, as well as longer-term strategies, related to remote and hybrid learning as it continued throughout, and potentially beyond, the 2020-2021 school year. Finally, findings should be considered preliminary and interpreted with some caution as several of the themes included in the “top five” for each question were endorsed by less than 20% of the overall sample and thus, do not reflect the responses of a majority of parent respondents, even if they are among the highest in frequency. Although this may limit our ability to draw strong conclusions about the populations of interest, such variability of parents’ experiences with remote learning highlights the value of asking open-ended questions that allow for parent-generated rather than investigator-determined responses. In addition, although the small sample sizes for the endorsed responses is in some ways a limitation, they also serve as an important reminder to educators and clinicians regarding the heterogeneity in experiences surrounding remote learning.

Conclusion

In summary, this study provides important parent-generated insights into both challenges and positive outcomes of remote learning, as well as strategies or adjustments parents found to be most useful to help their children succeed when faced with the shift to remote learning as a result of the COVID-19 pandemic. We hope that such data, along with individual differences associated with having a child with ADHD, child age, and geographic location, are used by educators to inform ongoing and future remote learning practices and develop the necessary supports for parents to ensure their children’s success.

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