

SHORT REPORT

Impact of stress and decision fatigue on parenting practices related to food and physical activity during COVID-19

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Abstract

Background: The COVID-19 pandemic has resulted in substantial disruptions to daily functioning and lifestyle behaviours, with negative health consequences for youth. Parents play a large role in their children's health behaviour; yet changes to parenting behaviours during the pandemic related to food and physical activity remain relatively unexplored. The present study is the first to our knowledge to examine specific changes in American parents' parenting behaviours related to food and physical activity during COVID-19, and potential correlates of such changes, including perceived stress and decision fatigue.

Methods: A total of 140 parents (88.57% female; 88.41% White; 87.59% married; with one to five children) from middle to upper income households completed an online survey assessing demographics, perceived stress (Perceived Stress Scale), decision fatigue (Decision Fatigue Scale) and food and activity parenting behaviour changes during COVID-19.

Results: Overall, a greater proportion of parents engaged primarily in positive (57.14%) than negative (22.86%) parenting practices related to food and physical activity during the pandemic. Moderation analyses showed that the negative relation between perceived stress and positive parental behaviour changes was stronger at higher perceived increases in decision fatigue during the pandemic.

Conclusions: In the face of a major public health crisis, adaptive parental responses may emerge, but perceived stress may inhibit such behaviour change. Perceived stress and decision fatigue may represent important explanatory factors in parental health promoting behaviours during times of uncertainty and change.

KEYWORDS

COVID-19, decision fatigue, pandemic, parenting, stress

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1 | INTRODUCTION

The COVID-19 pandemic has resulted in significant changes to daily living, including those related to children's health behaviours (e.g., decreases in physical activity; increase in fat and sugar consumption; Pietrobelli et al., 2020; Xiang et al., 2020). Given the significant role parents play in influencing their children's health practices (Rhee, 2008), these changes may reflect alterations to parenting practices during this time.

Parenting is impacted by both personal (e.g., psychological functioning) and environmental (e.g., life events) contexts (in Kotchick & Forehand, 2002). Individual and lifestyle changes resulting from the COVID-19 pandemic—including increased family contact, stress and school closures—may have led to changes in parenting practices. Only one study to our knowledge has investigated changes in health parenting practices during the pandemic. In a sample of French parents, Philippe et al. (2021) found that parents engaged in more permissive food-related practices (e.g., fewer rules and more snacking) during, as compared with before, COVID-19. The current investigation adds to the study of parenting behaviours during COVID-19 by broadening the focus to examine changes in both parenting behaviours related to food and physical activity and by examining two potential correlates related to such changes: perceived stress and decision fatigue.

Experience of stress has clear links to both parental behaviour (e.g., less homemade meals; parenting related to physical activity; Berge et al., 2017; Lampard et al., 2013) and children's health behaviour (e.g., meeting weekday guidelines for physical activity; Walton et al., 2014). Changing routines (e.g., working from home), additional obligations (e.g., monitoring online learning) and increased constraints (e.g., access to safe recreational environments) during COVID-19 may serve as added stressors and barriers for parents to implement desired food and activity behaviours (Berge et al., 2012; Sonnevile et al., 2009). Decision fatigue (DF)—the phenomenon where one's cognitive stamina for decision making becomes drained (Vohs et al., 2008)—may be an important variable to consider alongside perceived stress. DF can affect an individual's ability to act on judgement (Baumeister, 2014) and is especially salient under stressful conditions (Hickman et al., 2018). The pandemic has disrupted daily routines, which Baumeister (in Hauck, 2020) suggests forces individuals to place more mental energy into any given decision-making task. As a result, parents may find it more difficult to stringently maintain and enforce guidelines regarding their children's activity and eating patterns—potentially leading to negative alterations in health parenting practices. Additionally, individuals are more susceptible to DF's effect on behaviour choices at higher levels of emotional distress (Hickman et al., 2018), suggesting that DF may even exacerbate the negative influence of perceived stress on parental behaviours.

The aim of this study was to explore the following research questions: (1) to what extent are parents engaging in more positive and negative parenting behaviours related to food and physical activity during, compared to before, COVID-19; (2) is perceived stress linked to changes in parenting behaviours related to food and physical activity; and (3) does DF moderate the relation between perceived

Key messages

- Despite significant changes to daily lifestyle routines and roles due to COVID-19 health mandates, some parents may be engaging in more positive than negative parenting behaviours related to food and physical activity during the pandemic.
- Perceived stress likely acts as a barrier towards engaging in positive parental behaviours related to food and physical activity during COVID-19, and decision fatigue may amplify the impact of perceived stress on the engagement in such behaviours.
- Incorporating methods to reduce decision fatigue during times requiring significant adaptation may lessen the impact of subsequent stress from such changes on health parenting.
- Research examining parental responses to COVID-19 and future public health crises should evaluate differences across demographic groups.

stress and changes to parenting behaviour related to food and physical activity?

2 | METHODS

2.1 | Procedures

Participants provided written, informed consent. All procedures for this study were approved by the university Institutional Review Board, and data were collected online between 16 July 2020 and 20 August 2020.

2.2 | Participants

Participants were parents primarily from communities in and around a mid-sized metropolitan city in the Midwest. The analytic sample included 140 parents, the majority of whom were female (88.57%), White (88.41%), married (87.59%) and indicated that they were in the middle (39.26%) and upper-middle to upper (42.96%) income brackets. Participants reported between one to five children living at home ($M = 1.99$, $SD = 0.88$).

2.3 | Measures

2.3.1 | Demographic variables

Parents completed questions on gender; race/ethnicity; marital status; income (selecting from one of the following options: lower class,

lower middle class, middle class, upper middle class or upper class); and number of children living in their household.

2.3.2 | Perceived stress

Perceived stress was measured with the Perceived Stress Scale (PSS; Cohen et al., 1983), which included 10 items assessing how unpredictable, uncontrollable and overloaded individuals find their lives. Parents rated how often they experienced certain feelings in the past month from 0 (*Never*) to 4 (*Very Often*). Scores were summed across scale items.

2.3.3 | Decision fatigue changes

DF was measured with a 10-item version of the Decision Fatigue Scale (DFS; Hickman et al., 2018) adapted to focus on feeding and meal preparation. The DFS assesses emotion regulation, increased mental effort in making decisions and impulsive decision making and is measured from 0 (*strongly disagree*) to 3 (*strongly agree*). Parents rated how much each item applied to them during the pandemic and before the pandemic. Perceived change in DF was calculated with a discrepancy score, such that parents' response for each 'before pandemic' item was subtracted from the same item 'during the pandemic'. Discrepancy scores were averaged to create a composite score. Scores greater than zero indicate more DF during COVID-19 than before. Scores less than zero indicate less DF during COVID-19 than before.

2.3.4 | Behaviour changes during COVID

Behaviour change was measured with a novel behavioural checklist designed for this study that included 26 parenting behaviours related to food and physical activity across seven categories: food from scratch; snacks/desserts; involvement of children; physical activity; unhealthy habits; variety; and healthy habits. Parents indicated if they are 'doing *less*' or 'started or doing *more*' of each during the pandemic. Doing *more* of a positive behaviour or *less* of a negative behaviour was coded as a 1. Doing *more* of a negative behaviour or *less* of a positive behaviour was coded as -1. Parents who marked neither more nor less received a score of 0, indicating no change in behaviour. Scores were summed across all items. Positive scores reflect more positive behaviour changes, and negative scores reflect more negative behaviour changes.

3 | RESULTS

First, we examined descriptive statistics of changes to parents' behaviours related to food and physical activity during COVID-19. A larger proportion of parents reported more positive (57.14%) than negative

behaviour changes (22.86%) during COVID-19. See Table 1 for item-level behaviour change data.

Next, a moderated regression analysis was conducted to examine the relation between perceived stress, DF and the perceived stress \times DF interaction on behaviour change during COVID-19. The model controlled for demographic variables because COVID-19 disproportionately impacts individuals across demographic groups (e.g., racial/ethnic minorities; CDC, 2020).

The overall model predicting behaviour changes during COVID-19 was significant, accounting for 23.58% of the variance in behaviour change, $R^2 = 23.58$, $F(6,113) = 5.81$, $P < .001$. Results showed that higher levels of perceived stress predicted less positive behaviour change ($b = -.26$, $P < .01$). Additionally, a perceived stress \times DF interaction effect was found (Figure 1). When parents reported below average levels of DF change, no effect of perceived stress on behaviour change emerged, $b = 0.00$, $t(113) = 0.03$, $P = .97$, but there was a significant negative relation between perceived stress and behaviour change for parents who reported average, $b = -.26$, $t(113) = -2.77$, $P < .01$, or high, $b = -.52$, $t(113) = -3.49$, $P < .001$, increases in DF.

4 | DISCUSSION

Overall, parents reported engaging in more positive than negative parenting behaviour changes related to food and physical activity during COVID-19. These findings are promising in that despite high levels of stress reported by parents and caregivers during the pandemic (e.g., Cluver et al., 2020; Park et al., 2020), parents in the current sample are engaging in positive behaviour changes for their families. However, as our sample reflects mostly those from middle to higher income brackets, the present findings may not be generalizable to parents with children from lower income brackets—who experience significant health and social needs (including increased food insecurity) during COVID-19 (Sharma et al., 2020).

Higher levels of perceived stress were related to less positive behaviour change. Increased stress may negatively impact health parenting behaviours, which may then impact child health outcomes (El-Behadli et al., 2015). It is no surprise that a pandemic might introduce added stress for parents that might deter them from engaging in more positive parenting behaviours related to food and physical activity. Notably, we found that perceived stress only had a negative influence on parental behaviour change at average or high levels of perceived increases in DF. It may be that parents are most susceptible to the impact of stress on parenting behaviours related to food and physical activity as their decision-making resources and energy become more depleted. Reducing decision fatigue during times that require significant alterations to lifestyle routines may be important in alleviating the negative impact that associated stress may have on parental behaviour; however, future longitudinal studies are required.

This study is the first to our knowledge to examine changes in American parents' food and activity related practices during

TABLE 1 Item level data for feeding and activity parental behaviour changes during COVID-19

Parenting behaviour	Doing less during the pandemic	Started or doing more during the pandemic
Make from scratch	%	
Bake my own bread	21.43	25.00
Grow a garden	10.71	40.00
Cook most meals from scratch	13.57	47.14
Try to avoid eating in restaurants	18.57	53.57
Try to avoid take-out food	30.71	35.00
Try to avoid fast food	0.00	21.43
Snacks/dessert		
Bake desserts	42.86	15.00
My child eats dessert every day	28.57	22.14
Keep candy or junk food in the house	27.14	30.00
Give my children frequent snacks	42.14	15.00
Involve children		
Cook with my children	14.29	44.29
Involve my children in meal planning or shopping list creation	12.14	40.00
Physical activity		
My child gets exercise most/every day	19.29	35.00
My child takes walks or goes on bike rides most/every day	18.57	41.43
My child spends a lot of time playing outside	16.43	42.86
Unhealthy habits		
My child eats snacks after dinner	21.43	20.71
We have snack stations set up around the house	3.57	25.71
My child eats somewhere other than the table	23.57	30.00
My child watches TV while eating	27.86	20.71
Eat packaged snacks (e.g., granola bars, chips)	32.86	21.43
My child eats because they are bored	24.29	17.14
My child eats to relieve stress or feel happier	16.43	20.00
Healthy habits		
My child eats breakfast most/every day	8.57	31.43
We eat together as a family	10.71	50.00
Choosing healthier alternatives to unhealthy foods	10.00	35.00
Teaching my child about nutrition	10.00	31.43
Food variety		
Try new recipes	13.57	50.71
My child eats a wide variety of different foods	11.43	34.29
I make meals that cater to my child's preferences	16.43	30.71
Try to replicate restaurant foods at home	20.71	17.86

Note: N = 140.

COVID-19; however, some limitations must be noted. This study's sample was limited in diversity and number. Greater socio-economic and racial/ethnic diversity is relevant in COVID-19-related research because marginalized groups have been disproportionately impacted by COVID-19 (CDC, 2020). Also, while our behaviour change checklist was novel in examining specific food and activity parenting

behaviours, it was designed to measure behaviour during COVID-19 and is not exhaustive.

Nonetheless, while COVID-19 continues to have detrimental consequences across many different domains of life (e.g., physical health and employment), findings from the current study suggest that in the face of a major pandemic, parents of middle and higher income

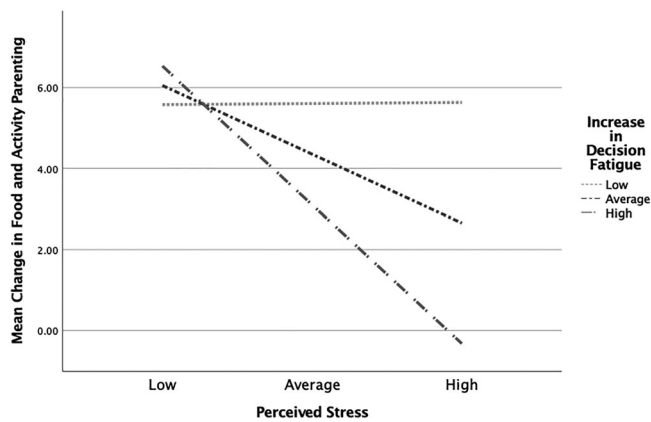


FIGURE 1 Relation between perceived stress and food and activity parenting changes at low, average and high levels of perceived increase in decision fatigue. Note. Low = -1 standard deviation; average = mean level; $+1$ standard deviation from mean. Due to the distribution of decision fatigue being skewed, a log transformation was applied, which eliminated skewness.

families may actually be engaging in higher levels of healthy parenting practices than they were before the pandemic—exposing adaptive behaviour changes that are emerging in the presence of significant loss. The relation between perceived stress, DF and health parenting highlights the importance of support for parents during this time and calls for complimentary research to investigate parental practices related to food and physical activity during times requiring significant adaptation. This study also calls for future research to examine DF as an important individual variable impacting one's susceptibility to stress—particularly under uncertain and evolving situations.

CONFLICT OF INTEREST

The authors have no conflict of interest or external funding to declare for the present study.

ETHICS STATEMENT

All procedures for this study were approved by the Institutional Review Board of the first author's university (ID# 1629871).

INFORMED CONSENT

All participants included in the current investigation provided informed consent prior to their participation.

DATA AVAILABILITY STATEMENT

Data used in the current study can be made available upon reasonable request to the first author.

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