

The Effects of Parental Stress on Perception of Child Health

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### **Abstract**

This study is to examine parents that are also completing coursework at The College at Brockport and the impact of parental stress on their perception of their child's health. This study will evaluate the influence of parental stress on parenting style, the child's actual health, the misperception of their child's health, and the impact of more permissive parenting on the relationship between parental stress and poor child health. The study included four participants whose children attend the Brockport Child Development Center at The College at Brockport. Participants took an anonymous survey that contained modified versions of the Parental Stress Scale and Parenting Style Questionnaire and provided information about their child's health habits. Results indicate that all four participants believe their children to have a 'healthy' diet quality, though only one of the four children received the recommended five servings of fruits and vegetables a day made by the American Academy of Pediatrics. Recommendations for future research are offered.

## **Introduction**

According to the Institute for Women's Policy Research (2014), over a quarter of all undergraduate students (26% or 4.8 million) are raising children. Gender disparities are evident among the student-parent population; of all single parents, women make up 71 percent, while men make up 11 percent (Gault, Reichlin, Reynolds, & Froehner, 2014). Student-parents may experience elevated stress levels due to factors including rearing children, attending class, and finishing schoolwork. These stressors can impact a child if parents are unable to healthily cope with this additional stress (Soltis, Davidson, Moreland, Felton, & Dumas, 2015). The current study will explore the relationship between parental stress, child health, and perception of child health. This research is important due to the limited amount of literature characterizing the experiences of parents attending college and the impact of their experienced stress on child health.

## **Parental Stress and Child Health**

Parental stress can be defined as “the stress associated with rearing children” (Loh, Harms, & Harman, 2017, p. 231). Previous research has indicated that mothers often experience higher levels of parental stress due to their status of being a primary caregiver. Parental stress levels are not differentially affected by being a primiparous mother (one child), or a multiparous mother (more than one child) (Loh et al., 2017). However, stressors associated with raising children can include managing child behavior, financial choices, health concerns, and parental endeavors to increase education level (Soltis, Davidson, Moreland, Felton, & Dumas, 2015).

Of interest to the current study, parental stress can impact a child's emotional, cognitive, behavioral, and physical health. One mechanism through which parental stress can impact child health is by impacting a child's ability to cope with their own stressful situations (Soltis et al., 2015). For example, Soltis and colleagues (2015) suggest that parental stress negatively impacts children's 'school readiness,' as children of highly stressed parents may have more difficulty coping with daily challenges in social and academic settings based on modeled behavior from their parents.

## **Parental Perception of Child Health**

Despite the correlation between parental stress and child health, parents are often not accurate judges of their child's health. For example, Gomes, Barros, and Pereira (2016) indicate that parents inaccurately judge their child's weight and this disparity is heightened among parents with overweight children. Gomes et al. (2016) found that a small percentage of parents of healthy-weight children considered their child as underweight, while none considered their child as overweight. However, of parents with overweight children, most parents failed to recognize their child's weight status, with only 17.4% correctly identifying their children as overweight. Similarly, Barba, Caullo, Russo, and Siani (2008) asked parents of children (ages 6-11) to review depicted figures of boys and girls and to choose the most appropriate size for a “healthy child.” Results indicated that a ‘fatter’ body shape was indicated as healthy by a higher percentage of mothers of girls than boys. In comparison, mothers of boys chose a figure below the median weight as appropriate for a healthy child on a more frequent basis. Such findings highlight the

discrepancies between observable indicators of child health and parental beliefs their child's level of health.

Parental perception of child health is an important factor to consider when evaluating child health, as such perceptions may be related to parental behaviors designed to improve child health and/or child health outcomes. For example, among mothers evaluated in Barba and colleague's (2008) work, maternal perception of 'fatter' body shapes as being healthier was associated with having a female child with a higher BMI and waist circumference. Similarly, Gomes et al. (2016) noted that parents' receptiveness to messages targeting healthy eating behaviors and strategies to regulate children's food intake may be related to concerns about their child's weight. Specifically, if a parent recognizes that a child is overweight, this perception can lead him/her to improve the family's diet and exercise habits in an effort to effectively manage the child's eating and exercise behaviors (Gomes et al., 2016). Thus, parental perception of a child's health can be an important precursor of behaviors to promote child health; as such, it is critical that such perceptions are accurate.

Building on extant literature, the current study proposes a direct relationship between parental stress and child health, as well as between parental stress and parental perception of child health. While stress as a predictor of child health has been evaluated (Soltis et al., 2015), and the tendency of parents to misperceive child health has been documented (e.g., Barba et al., 2008), the author was unable to identify any study that formally examined the relationship between stress and perceived child health. In a sample of college students who are parents, and thus, are coping with additional sources of stress, this relationship may be particularly marked. Thus:

H1: Increased levels of parental stress will be associated with greater likelihood of having a child in "poor health" (i.e. a child who does not meet criteria for ideal weight, nutrition, exercise, and sleep guidelines for the child's age, as defined by standards set forth by the American Academy of Pediatrics).

H2: Increased levels of parental stress will be associated with greater likelihood of misperception of a child's health (i.e., parental over- or under-estimation of a child's adherence to ideal weight and nutrition guidelines set forth by the American Academy of Pediatrics).

### **Parenting Style**

The current study proposes that relationships between parental stress and child health/parental perception of child health may be attributed to parenting style. The impact of parental stress on parenting style may be seen in studies evaluating parental avoidance and anxiety; for example, research conducted by Fernandes, Muller, and Rodin (2012) explained that higher levels of avoidance have been found to be associated with higher levels of parenting stress. Similarly, Moreira and Canavarro (2016) researched the association between parental stress, attachment-related anxiety (i.e., the extent to which people worry about another person's availability or support in times of need), and attachment-related avoidance (i.e., the degree to which individuals attempt to maintain emotional distance and independence from others). Results of their work supported a relationship between higher levels of parenting stress and higher levels of avoidance

(Moreira & Canavarro, 2016). If a parent is struggling with their own needs, as when coping with large amounts of stress, a parent may also struggle with providing effective care for their children and loved ones (Mikulincer & Shaver, 2007). Specifically, a child's signals for help from their parent can be missed when a parent is experiencing high self-focus (Selcuk, Zayas, Gunaydin, Hazan, & Kross, 2010), as might be anticipated when engaging in avoidant coping strategies. Thus, if stress results in parents becoming more self-focused and avoidant, they may fail to adequately perceive child health. As noted earlier, this misperception could lead to changes in parental practices (e.g., feeding, exercise) that impact child health (Gomes et al., 2016).

Related, Byrne et al. (2017) examined the association between five discrete parenting styles and inflammation and immune activation in late childhood (as measured by salivary presence of C-protein and immunoglobulin A). Based on parental responses to the Alabama Parenting Questionnaire, which measures positive parental involvement, positive disciplinary techniques, consistency in disciplinary techniques, use of corporal punishment, and monitoring and supervision of child activity, Byrne et al. (2007) demonstrated that parents' self-reported poor monitoring and supervision of children was associated with higher levels of inflammation in their children. Based on extant research, it appears that parental stress could either result in limited attention to a child's needs, resulting in misperceptions of that child's health that may drive selection of health behaviors, or parental stress could result in permissive parenting styles that allow children to make more unhealthy choices that impact their own health. Thus:

H3: Increased levels of parental stress will be associated with higher endorsement of permissive parenting styles (i.e., less monitoring and supervision of children).

H4: Permissive parenting style (i.e., less monitoring and supervision of children) will mediate the relationship between parental stress and (a) poor child health and (b) misperception of child health.

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## **Methods and Procedure**

### **Participants**

Participants for this study were recruited from the Brockport Child Development Center on The College at Brockport, State University of New York (SUNY Brockport) campus. Eligible participants were required to be both a parent and a full-time student at the college who was taking at least 12 credits for the semester. Parents had to have a child who was at least three years old enrolled in daycare services; parents of children younger than this age were unable to take the survey in order to ensure that parents were feeding their children solid food.

### **Procedure**

The design for the study is a cross-sectional survey examining correlations between relevant variables. To administer the survey, the researcher recruited parents for participation during the normal 'pick-up' hours [4:00 pm-5:30 pm] at the Brockport Child Development Center on two

separate evenings. The researcher verbally reviewed study eligibility criteria with parents as they entered the facility. If the parent met the qualifications and was interested in participating, they were provided with an information sheet outlining the study risks/benefits, voluntary nature of participation, methods, and remuneration. This information sheet was to be kept by the parent for their records. The researcher told parents the information sheet reviewed important elements of the study and reminded parents that she was available to answer any questions that may arise about the study. If the parent agreed to take the survey, they were given a paper version of the survey and writing utensil and directed to a nearby area in which they could complete their work. In responding, parents were asked to focus their attention on their relationship with their child. Should parents have more than one child, they were asked to report on their relationship with the oldest child enrolled in daycare at Brockport. Once the parent submitted the survey to the researcher, they had the option to choose a five-dollar Dunkin Donuts or a Tim Hortons gift card as remuneration for their participation.

### Measures

**Parental Stress Scale.** The Parental Stress Scale (PSS: Berry & Jones, 1995), an 18-item parent experience questionnaire, was used to assess stress levels associated with the feelings and perceptions of parenting. This questionnaire was modified to focus on eight (8) items of the original eighteen (18) items. Specifically, the author adopted two items from the subscale entitled ‘parental rewards,’ three from the subscale ‘parental stressors,’ one from the subscale ‘lack of control,’ and one from the subscale ‘parental satisfaction.’ An additional item that was not maintained in Berry and Jones’s (1995) final scale was also included here. This questionnaire implements a Likert-type response scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating higher levels of parental stress. Example items from the Parental Stress Scale include “It is difficult to balance different responsibilities because of my child(ren)” and “The major source of stress in my life is my child(ren)” (Berry & Jones, 1995, p. 456). Reliability was estimated using Cronbach’s alpha with  $\alpha = .85$ .

**Child Health.** Parents were asked to report on their child’s height and weight. This information was utilized to calculate the child’s body mass index using the Centers for Disease Control and Prevention (CDC): BMI Percentile Calculator for Child and Teen.<sup>1</sup> Parents were also asked to report on how their child performed against three recommendations for child health posed by the American Academy of Pediatrics: (a) children should eat five or more servings of fruits and vegetables each day, (b) children participate in sixty minutes of physical activity each day, and (c) children get at least nine hours of sleep a night. Parents reported their children’s consumption of fruits and vegetables, amount of physical activity, and amount of sleep using a fill-in-the-blank.

**Perception of Child Health.** To measure perception of child health, parents were asked, “What is your perception of your child’s weight?” Response options included ‘underweight,’ ‘average weight,’ and ‘overweight.’ Parental responses were compared to actual child BMI to determine accuracy in response. A second question asked, “What is your perception of your child’s diet quality?” and included responses of “Not at all healthy,” “Not very healthy,” “Healthy,” and

“Very Healthy.” Parental responses to this question were compared to child performance against the American Academy of Pediatrics’ guideline for fruit and vegetable consumption.

**Parenting Style.** As a proxy measure of parenting style, participants were asked to respond to an eight-item measure of parental control over child feeding (Ogden, Reynolds, & Smith, 2006). Three items measured parents’ efforts to control their child’s diet using techniques the child could detect in their environment (e.g., “How often are you firm about what your child should eat?”), while four items measured more discreet methods of control (e.g., “How often do you not buy foods that you would like to because you don’t want your children to have them?” (Ogden et al., 2006, p. 10). All items in this questionnaire were measured on a 5-point Likert-type response scales ranging from 1 = never to 5 = always to gauge participants’ responses to each item. Thus, lower scores on the measure suggest that parents use a more permissive parenting style (i.e., offer less control over their child’s diet).

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## Results

### *Revised Analysis Plan*

Due to a small sample size, Brynn Stopczynski was unable to test originally proposed hypotheses. The researcher will instead characterize and describe levels of stress, parenting style, child health and parents’ perception of child health. If a parent did not provide an exact value regarding average number of fruits/vegetables consumed, average number of hours their child slept, or average number of minutes their child exercised, then the researcher calculated a midpoint of the interval provided by the parent in response to the relevant fill-in-the blank question and used this midpoint in analyses.

### *Parental Demographics*

The total number of parents surveyed was four. The average age of the participants was 30.75 years ( $SD = 2.63$ ). All participants were female and identified as a female. In terms of ethnicity, all participants were white/Caucasian. A total of 1 student-parent (25%) were Seniors, 1 were Juniors (25%), 1 were Sophomores (25%), and 1 were Graduate Students. The average number of credits enrolled by the participants was 12.75 credits ( $SD = 4.72$ ).

### *Child Demographics*

The average age of the children was 6.13 years ( $SD = 1.93$ ). All children were female and were white/Caucasian. After calculating BMI using the Centers for Disease Control and Prevention (CDC): BMI Percentile Calculator for Child and Teen<sup>1</sup> with each child’s height and weight, one of the four children were placed in the ‘underweight’ category. Three of the four children were placed in the ‘average/healthy’ category.

### *Parental Stress*

Parents’ average total stress was 3.34 ( $SD = 0.48$ ). The average parental stress score indicates that parents are generally feeling satisfied and/or only moderately stressed by their parenting

responsibilities. As shown by average responses to each item (see Table 1), parents exhibited slight stress due to the time and energy required to care for a child ( $M = 3.25$ ,  $SD = 0.96$ ) and concerns about whether they were doing enough for their child ( $M = 3.5$ ,  $SD = 1.29$ ). On average, parents did not feel great difficulty balancing responsibilities because of their child ( $M = 2.25$ ,  $SD = 0.50$ ). Only one parent reported that they 'strongly agreed' with their child being the source of major stress. All parents reported feeling close to their child.

### ***Parenting Style***

Overall, parents' average total score on the parenting style scale was 3.35 ( $SD = 0.54$ ). The average parenting style score indicates that the amount of time by which parents were firm about their child's eating habits varied. Scores on individual items are shown in table 2. As noted, parents were most likely to exhibit firm control over their child's eating habits ( $M = 3.75$ ,  $SD = 0.50$ ) and were least likely to avoid buying foods desired by the parent in order to prevent child access ( $M = 2.75$ ,  $SD = 0.96$ ). As items on the scale were divided into those representing covert and overt control of a child's diet, the mean response to each type of control was also calculated. As shown in Table 3, parents were more likely to demonstrate use of overt strategies.

### ***Child Health and Perception of Child Health***

**BMI.** When comparing the four participants' perceptions of whether their child was 'underweight', 'average/healthy weight', or 'overweight' to actual child BMI values, two of the four parents correctly perceived their children to be of 'average/healthy' weight. One of the four parents believed their child to be of 'average/healthy' weight when their child was actually rated 'underweight.' One parent thought their child was 'underweight,' but based on BMI, the child fell into the 'average/healthy' category by one percentile.

**Exercise.** The average number of minutes of exercise a day that children received was 38.75 minutes ( $SD = 15.48$ ). One parent reported that their child got no exercise during the winter but got about thirty minutes per day during the summer months. Only one parent reported that their child got the recommended sixty (60) minutes of exercise a day. The other two parents reported between twenty (20) to forty (40) minutes of exercise a day.

**Sleep.** The average number of hours of sleep that children received was 10 hours ( $SD = 1.87$ ). Only one parent reported their child got between seven (7) and eight (8) hours a night. The other three parents reported a range of ten (10) to twelve (12) hours of sleep a night for their children.

**Nutrition.** The average number of servings of fruits and vegetables consumed by children that parents reported was 3.25 servings ( $SD = 0.87$ ). Of the four participants, only one parent reported that their child ate between four and five servings of fruits and vegetables a day. The other three participants reported between 2.5 to 3 servings a day for their children.

<sup>1</sup>Centers for Disease Control and Prevention. (2019). *BMI Percentile Calculator for Child and Teen*. Retrieved from [https://www.cdc.gov/healthyweight/bmi/result.html?&method=english&gender=f&age\\_y=3.5&age\\_m=0&hinces=36&twp=26](https://www.cdc.gov/healthyweight/bmi/result.html?&method=english&gender=f&age_y=3.5&age_m=0&hinces=36&twp=26)

All four participants reported that they believed their child's diet quality to be 'healthy.' However, when reviewing the number of children that were reportedly getting the recommended amount of fruits and vegetables every day, only one of the four children's diets actually meets the 'healthy standard'. Three of the four children were getting less than the recommended amount of fruits and vegetables provided in guidelines by the American Academy of Pediatrics.

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## **Discussion**

Original hypotheses were unable to be tested due to the small sample size. Therefore, no correlations could be made between parental stress, parenting style, child health and perception of child health. Despite this fact, results provide interesting exploratory data characterizing patterns of stress, parenting style, and perception of child health in a small sample of parents pursuing secondary education. Results are discussed in the context of extant literature before offering suggestions for future research.

### **Stress, Parenting Style, Child Health, and Perception of Child Health**

In regard to parental stress, it is interesting to note that parents displayed only a moderate amount of stress. This is inconsistent with other scholars (Gault, Reichlin, Reynolds, & Froehner, 2014) who have documented higher levels of parental stress with additional responsibilities. To note, Brynn Stopczynski observed all parents that participated in the current survey were married and explained to the researcher that they were going back to school while working a full-time job. This lifestyle may have been a contributor to the average amount of stress observed in this sample; despite challenges of work, school, and parenting, parents may be experiencing more help at home due to their marital status.

In terms of parenting style, parents showed use of both 'covert' and 'overt' styles of monitoring their child's food intake, with overt strategies being endorsed slightly more often. The least variance (smallest SD) is seen in regard to items on being firm with the child (overt) and not taking them to unhealthy restaurants (covert). Overt control can be difficult to monitor in terms of a child's attention to what they are not being allowed to eat; research that has focused on overt control has also been aligned with consequences of dieting. With a restriction of food by a parent, certain foods can become more attractive to a child, resulting in increased food intake rather than decreased food intake (Ogden, Reynolds, & Smith, 2006). On the other hand, a child is also being shown what is perceived as unhealthy by a parent, allowing for greater perception of healthy eating for the future, which has been predicted by this study. Research has indicated that parents within higher social classes are more likely to use overt control (Ogden et. al, 2006).

In regard to child health, children in the current sample were often not meeting recommendations of the American Academy of Pediatrics. Specifically, three of the four children were consuming less than the recommended amount of fruits and vegetables. Exercise levels for three of the four children were also falling below the recommended standard. Children did well at meeting recommendations for sleep, as the amount of sleep that three of the four children received did

fall within the standards for children (at least nine hours a night). In addition, most children had BMI values that met expectations for their height/weight.

Of interest, parents were accurate judges of their child's BMI, but often misperceived child diets as 'healthy,' when they actually did not contain the recommended number of servings of fruits and vegetables. Studies have shown that in healthy-weight children, higher parental concerns showed significant associations with incorrect perceptions of child's weight and diet quality (Gomes, Barros, & Pereira, 2017). Furthermore, parents of healthy-weight children who failed to classify their child as such and instead perceived them as underweight are concerning; these parents may be encouraging unhealthy eating habits, and not providing proper nutrition to their children (Gomes et. al, 2017). These parents in turn did meet standards set by this study; parents of healthy children did have difficulty perceiving their children's diet quality.

### **Limitations and Future Research**

Despite interesting descriptive findings, there were a number of limitations present in the current work. Primary among these was the very small number of participants enrolled in the current study. This substantially limited the amount of variance in responses. In addition, the survey sample was also lacking diversity, with all parents and all children being white/Caucasian and female. The availability of the student-parent population at the Brockport Child Development Center was limited; most parents had already completed schooling or served as faculty at the college, resulting in their exclusion from the study. In the future, focusing on single parents could allow for a larger discrepancy between parental stress and perception of child health to be seen. In addition, a larger sample would also allow for all four hypotheses to be analyzed. Having a larger and more diverse population of participants would allow for better understanding of the relationship between parenting style, parental stress, child health and parental perception of child health. Parents within the LGBTQ+ community could also be included in the study for further diversity. Having children that also vary in weight, height, and BMI percentiles could offer a more nuanced look at how parents identify their child's weight, as children in this study were of expected height/weight for their age.

If findings of the current study are supported in larger samples, public health professionals will need to be cognizant of how parents work to reduce intake of unhealthy foods for their children, but simultaneously fail to meet the recommendations for fruit/vegetable intake and exercise based on the American Academy of Pediatrics. Public health professionals will need to take into account socioeconomic status, access to healthy food options, and parental education on proper nutrition for children, to name a few. A population that may be impacted by these three targets are members of low-income neighborhoods. Further education and marketing tools targeting parents and ideal health parameters for children are ways to change the current research surrounding parental perception of child health.

Table 1  
*Average Parental Stress*

<u>Question</u>	<u>Mean</u>	<u>Std. Deviation</u>
I am happy in my role as a parent.	4.2500	.50000
Caring for my child sometimes takes more time and energy than I have to give.	3.2500	.95743
I sometimes worry whether I am doing enough for my children.	3.5000	1.29099
I feel close to my child.	4.2500	.50000
The major source of stress in my life is my children.	2.7500	1.5000
It is difficult to balance different responsibilities because of my child.	2.2500	.50000
I feel overwhelmed by the responsibility of being a parent.	2.5000	.57735
I am satisfied as a parent.	4.000	.00000

Table 2  
*Average Parenting Style*

<u>Question</u>	<u>Mean</u>	<u>Std. Deviation</u>
How often are you firm about what your child eats?	3.5000	.57735
How often are you firm about when your child eats?	3.7500	.5000
How often do you encourage your child to eat more if they feel they haven't eaten enough that day or at mealtime?	3.5000	1.29099
How often do you avoid going to cafes or restaurants with your child which sell unhealthy food?	3.2500	.5000
How often do you not buy foods that you would like because you don't want your children to have them?	2.7500	.95743
How often do you not try to eat unhealthy foods when your child is around?	3.5000	.57735
How often do you avoid buying cookies and cakes and bringing	3.2500	1.70783

Table 3

*Average Feeding Style*

<u>Feeding Type</u>	<u>Mean</u>	<u>Std. Deviation</u>
Overt	3.5833	.50000
Covert	3.1875	.82601

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