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## Nourishing Family Connections: Exploring the Impact of Mealtime Dynamics on Child Depressive Symptoms

Kyra (Dee) Bekelja  
*DePaul University*, [dbekelja@depaul.edu](mailto:dbekelja@depaul.edu)

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**Nourishing Family Connections: Exploring the Impact of Mealtime Dynamics on Child  
Depressive Symptoms**

A Thesis

Presented in Partial

Fulfillment of the Requirements for the  
Degree of Master of Science

By

Dee Bekelja

July 6<sup>th</sup>, 2023

Department of Psychology  
College of Science and Health  
DePaul University  
Chicago, Illinois

**THESIS COMMITTEE**

Jocelyn Carter, PhD., Chair

Jerry Cleland, PhD., Reader

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## **Biography**

Dee Bekelja grew up in Cleveland, Ohio, and graduated from Solon Highschool in 2017. She received her Bachelor of Science in Cognitive Neuroscience from DePaul University in 2021 and her Master of Science in Psychology from DePaul University in 2023. She joined Dr. Carter's Healthy Families Lab during undergrad and through a team meeting about the career options in psychology, she found out about psychiatric nursing. She will go on to apply to Psychiatric Mental Health Nurse Practitioner programs in August and is excited to bridge her love for hands-on patient care with psychiatric and mental health care.

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## **Abstract**

Literature reviews show that the frequency of family meals is associated with increased positive health outcomes in children. Our study looked to find the essential characteristics that family mealtimes should have in order to produce the most beneficial outcomes for children regarding depressive symptomology. One hundred twenty-four children and their parents participated in answering surveys about individual and family health behaviors. We hypothesized that a greater frequency of family meals lowers levels of depression in children, especially if the child enjoys family meals. A moderation analysis was used to assess the moderation effects and relationship with the frequency of family meals, mealtime characteristics, and depression symptoms. Results of supplemental analyses showed that some individual symptoms of depression correlated with mealtime characteristics, with some negative correlations found between meal expectations, enjoyment, quality, and specific depression symptoms. The results from this study can help parents and families know what characteristics to focus on when having frequent family meals to help decrease depressive symptoms in children.

*Keywords:* family mealtime, children, adolescents, depression symptomology, frequency, meal quality, parent expectations, technology use, child enjoyment.

## **Nourishing Family Connections: Exploring the Impact of Mealtime Dynamics on Child Depressive Symptoms**

Family routines develop and establish critical characteristics in a child's life. They help develop both social and task-related skills. Family routines help form specific bonding times, increase family engagement, and support mental well-being (Koome et al., 2012). Routines contribute to childhood development, as well as marital and family stability. Mealtime routines such as family mealtimes can help develop language, social skills, and emotional bonds, facilitate effective communication, and promote psychological adjustment (Elgar et al., 2013; Neumark-Sztainer et al., 2010).

According to Kim et al. (2013), family meals involve the entire family gathering around the table to share a meal at home. These meals foster a sense of community, providing an opportunity for family members to discuss various family matters and express affection and connectedness. Furthermore, the frequency of family meals has been associated with enhanced dietary quality and healthier eating habits in adolescents. Several studies have defined the frequency of family meals in a multitude of ways, such as "how often most or all family members shared a meal together, "regular" family dinners" (Fulkerson et al., 2014, p.2), and as "on average, how many times per week do you and your adolescent child eat breakfast/dinner together?" (Wong et al., 2022, p. 2).

Family meals are classified as protective factors against adverse adolescent outcomes (Dallacker et al., 2017; Elgar et al., 2013; Fulkerson et al., 2006; Harrison et al., 2015; Hammons & Fiese, 2011; Neumark-Sztainer et al., 2010; Wong et al., 2022). Adolescents are at a potentially high risk of developing symptoms of depression and other unfavorable outcomes such as "...inadequate dietary intake, unhealthy weight-control behaviors, excess weight gain,

substance-use behaviors, and psychosocial issues...” (Neumark-Sztainer et al., 2010, p. 1113). Family meals are associated with lowering the levels of drug use, such as cigarettes and marijuana, suicide ideation, and depressive symptoms (Neumark-Sztainer et al., 2010). Family meals also reduce sexual intercourse, binge/purging behaviors, and antisocial behaviors in adolescents (Fulkerson et al., 2006) and increase their vocabulary skills, academic success, and family connectedness (Fruh et al., 2011).

Past studies have investigated how sharing during family meals can impact health outcomes such as weight and dietary behaviors. A systematic review of literature on family meals and the association they have with diet or weight outcomes in people ranging from children to old adult age found that in youth, family meals resulted in better dietary behaviors across a lifespan (Fulkerson et al., 2014; Neumark-Sztainer et al., 2010).

The frequency of family meals is associated with adolescent-risk behaviors such as substance use, violence, and delinquency. Research indicates that engaging in regular family meals promotes a sense of connection and bonding within the family unit. This, in turn, serves as a protective factor against adverse mental health issues and psychosocial outcomes among adolescents. Therefore, the frequency of family meals may impact specific health outcomes for adolescents. A systematic review of 14 articles about risk behaviors and family meals resulted in many studies finding significant associations between the frequency of family meals and risk behaviors such as substance use, violence, and delinquency (Goldfarb et al., 2014). Existing literature suggests that family meals provide an environment that fosters family connectedness and bonding, which may be the reason it has an impact on specific health outcomes: "Healthy family environments, including family connectedness (i.e., feelings of love, warmth, and caring from parents) are protective against poor mental health or psychosocial outcomes, and the role of

the family has long been studied as an important contribution to adolescent well-being" (Harrison et al., 2015, p. 97).

### **Meals Influence Through Communication**

Family meals are associated as a key factor in family communication. A study done by Wong et al. (2022) found that the frequency of family meals by itself was not enough to be associated with child psychological distress; however, when the adolescents were in non-conflict communication with their parents for at least 30 minutes a day along with the daily meals resulted in the lowering levels of child psychological distress.

Family mealtime provides a good setting and environment for parents to communicate and talk to their adolescents and observe any abnormal behaviors in them. Family meals can provide adolescents with routines and consistency that can help teach them about nutrition, communication, manners, and healthy habits (Eisenberg et al., 2004). Regular implementation of family mealtime can increase the child's responsiveness to parental questions and communications, which is advantageous for parents to know if there are any changes or worrisome issues in the adolescent's life. Mealtimes allow the adolescent to express their feelings and allow parents to shape coping mechanisms and behaviors (Elgar et al., 2013; Prior & Limbert, 2013; Wong et al., 2022; Harrison et al., 2015).

### **Depression and Family Meals**

The primary outcome we examined in this study is how the frequency of family meals impacts child depressive symptoms. There have been many studies on how the frequency of family meals can impact adolescents' developing depressive symptoms (Eisenberg et al., 2004; Utter et al., 2013; Harrison et al., 2015; Karimi et al., 2019). According to a study by Harrison et al. (2015), there is a strong negative association between family meal frequency and high

depressive symptoms and suicidal thoughts in both males and females. This study highlights the importance of family meals to promote positive adolescent mental health outcomes. Adverse outcomes such as stress, depression, and anxiety are associated with families with less frequent family meals (Karimi et al., 2019). The increase in family meals has found decreased symptoms of mental disorders, precisely depressive symptoms (Agathão et al., 2021; Eisenberg et al., 2004; Haghghatdoost et al., 2017; Ho et al., 2017; Kim et al., 2013; Utter et al., 2017). In Figure 1, a comparison between these different studies shows the different designs and measures used when looking for correlations between the frequency of family meals and depressive symptoms in children.

	<b>Significance</b>	<b>N size</b>	<b>Age</b>	<b>Depression Measure</b>
<b>Agathão et al. (2021)</b>	p<0.001	2,528	9 to 17 years	General Health Questionnaire (GHQ-12)
<b>Eisenberg et al. (2004)</b>	p<0.05	4,746	11 to 18 years	Rosenberg Self-esteem Questionnaire (RSE)
<b>Haghghatdoost et al. (2017)</b>	p<0.0001	5,528	10 to 18 years	World Health Organization-Global School-based Student Health Survey (WHO-6SHS)
<b>Ho et al. (2017)</b>	p<0.001	1,419	18+ years and 6 to 11 years	Subjective Happiness Scale (SHS)
<b>Karimi et al. (2019)</b>	p<0.05 p<0.05	14,400	7 to 18 years	Used the question "During the past 6 months, how often did you experience anxiety such that you could not do your daily activities" to measure anxiety and "During the past 6 months, how often did you experience headaches, stomachs, backaches, worthlessness, aggression, worry, or insomnia such that you could not do your daily activities" to measure psychiatric distress.
<b>Kim et al. (2013).</b>	p<0.05	135	5 <sup>th</sup> to 6 <sup>th</sup> graders	Children's Depression Inventory (CDI)

<b>Utter et al. (2013)</b>	p<0.001	8,692	<13 to 17+ years	Reynold's Adolescent Depression Scale- Short Form (RADS-2)
<b>Utter et al. (2017)</b>	p<0.001	8,373	≤ 13 to ≥17 years	World Health Organization Well-being Index (WHO-5)

**Figure 1.** Comparison between several different studies looking at the correlation between the frequency of family meals and depression symptoms in adolescents.

### **Expanding the Conceptualization of Family Meals**

There are other essential family meal factors to consider when considering family meals as a protective factor against depression. Past studies have only looked at the frequency of family meals. However, this study aims to look at the association between the frequency of family meals and the other characteristics of family mealtime, such as technology use during mealtime, the nutritional quality of the family meals, the values the parents instill in their children, and the children's enjoyment of family mealtime.

### **Technology Use and Family Meals**

Technology use has a negative impact on family meals. The technology used during mealtimes, such as cell phones or television, can inhibit communication and increase the consumption of unhealthy foods (Trofholz et al., 2017; Wong et al., 2022). Having the TV on or other forms of technology distractions are associated with an increased intake of junk food and processed food and a lower intake of fruits and vegetables (Overcash et al., 2020).

### **Nutrition and Family Meals**

The family meals' nutritional quality also correlates with family meal outcomes. Fruit and vegetable intake increased when there is a higher frequency of family meals (Robson et al., 2020; Watts et al., 2017), as well as increasing healthier dietary and eating behaviors (Dallacker et al., 2017; Hammons & Fiese, 2011; Harbec, & Pagani, 2018). Studies have found that the “frequency of family meals was related to higher energy-adjusted intakes of fruit, vegetables,

grains, calcium-rich foods and several micronutrients, and lower intake of soft drinks”

(Neumark-Sztainer et al., 2010, p. 1113). Fruit and vegetable intake is important because it is associated with a higher health-related quality of life, mental well-being, and increased affluence (Davison et al., 2021). These factors help promote and facilitate the decrease in depressive symptoms.

### **Parent Meal Values and Family Meals**

Parent meal values and expectations can be crucial in family meal outcomes. Parent meal values are the parental expectations and family values when it comes to family mealtime. An example of parent values and expectations are the family or household rules that parents may put in place for their children surrounding mealtime. This may be helping cook dinner, setting the table, doing the dishes after the meal, being expected to be at dinner at a certain time on certain days, and so forth. This also refers to manners that parents may uphold, such as not talking with mouths open, saying please and thank you, and not talking over each other (Skeer et al., 2017). Family values and expectations can influence how family meals function, such that specific values and expectations may result in a more fulfilling meal experience or one that provides more open communication or a stricter experience. These values and expectations can then moderate their impact on depression symptoms.

### **Child Enjoyment and Family Meals**

Finally, child enjoyment of family meals is also a key characteristic to consider. The importance and enjoyment of family meals can play a role in how frequent family meals are and how well they are received. A good atmosphere around family meals is essential for children mealtime enjoyment (Prior & Limbert, 2013). Having a positive and pleasant atmosphere during dinner, such that family discussion is encouraged, can allow for more positive benefits of



mealtime. Child enjoyment of family meals can help create more favorable outcomes, leading to better mental well-being and lower depressive symptoms.

### **Rationale**

The previously cited studies further exemplify the need for our current study. Some studies looked at the frequency of family meals and technology or nutrition use as an effect; some looked at daily food intake rather than family meals, and some did not look at the frequency of family meals. No studies have examined meal frequency concerning these other meal characteristics in predicting depression. The current study tried to bridge this gap by looking at the frequency of family meals and these characteristics as a moderator for depressive symptoms. This study aimed to examine the link between family meal frequency and childhood depression as well as moderating factors during family meals that could impact mental health outcomes.

Typically, studies look at the frequency of meals or mealtime characteristics separately. Past studies show that the frequency of family meals plays a significant role in impacting levels of positive mental health outcomes. Frequency is an important aspect of family meals and their impact on mental health, but it is not the sole characteristic that matters. The other characteristics (healthy meal quality, technology use, parent values/expectations, and child enjoyment of family meals) may be moderating what is gained from those family meals and the impact the meals have on depression (Kim et al., 2013; Harbec & Pagani, 2018; Skeer et al., 2017). For example, if a child has low enjoyment during family meals but a high frequency of family meals, they would be expected to have more depression. In contrast, if a child had high enjoyment during family meals and had a high frequency of those meals, we expect less depression. Failure to include potential moderators may explain inconsistent findings in the literature.

By addressing this omission and considering mealtime characteristics and frequency, families can understand what is important for successful and beneficial family mealtime. We wanted to find what moderates the frequency of family meals the best, allowing families to focus on implementing family meals with the most important meal characteristics to minimize depression symptoms. We predicted child enjoyment of family meals to have the most considerable moderating influence on the other mealtime characteristics. We expect to find high-frequency levels of family meals plus high levels of childhood enjoyment to result in the lowest levels of depression. Families may only sometimes have the means to increase the frequency of their family meals. However, they can implement the quality of their family meals and what is taken from the family meals by focusing on some of these characteristics.

We believe these relationships exist because we know from previous studies that the frequency of family meals does have an impact on depressive symptoms as well as other health outcomes like weight, eating disorders, and anxiety (DeCator et al., 2016). Previous work has shown results like the higher frequency of family meals leads to fewer adverse health outcomes, and that mealtime characteristics play a role in how influential the family meal is (Utter et al., 2013). Levels of technology use during dinner time, the quality of the meal, the values the parents instill in their children, and the children's enjoyment of family mealtime have all been shown to impact children's physical and mental health outcomes. The results from this study can help parents and families know what characteristics to focus on when having frequent family meals to help decrease depressive symptoms in children.

## Research Design

The current study examined the relationships between depression levels and frequency of family meals and meal quality, depression levels and frequency of family meals and technology use, depression levels and frequency of family meals and parent values/expectations, depression levels and frequency of family meals and child enjoyment of family meals. The hypotheses are as follows:

**Hypothesis I.** Greater frequency of family meals is associated with lower levels of depression in children.

**Hypothesis II.** Child enjoyment of family meals is more closely related to depression than the other mealtime characteristics.

**Hypothesis III.** Greater frequency of family meals plus high levels of enjoyment by the children results in the lowest levels of depression.

## Methods

### Participants

This study used data from The Active Project (TAP), a project completed by the Healthy Families Lab and Dr. Jocelyn Carter that examined the role of video games in physical activity in ethnically diverse youth. Participants of this study were 106 children in families in the Chicagoland area. Child participants were eligible for the study if they (1) are aged 8–14 years; (2) have a working AVG console (advanced video game console) present in the home for at least three months before study participation; (3) can provide informed assent; (4) have a parent or legal guardian capable of providing informed consent; and (5) are English-speaking with at least one English-speaking parent or legal guardian. Forty percent of the sample were female ( $n = 49$ )

with a mean age of 11.9 ( $SD = 1.9$ ; range = 8-14). The sample was ethnically diverse (43.4% Caucasian; non-Hispanic White; 39.6% African American, 17% Hispanic/Latino).

Approximately one-third (30.1%) of the sample reported an income over \$75,000.

Approximately 50% of parents reported that there are two adults living in the home, 36% reported that there were three or more adults living in the home, and 14% reported that there was only one adult (parent respondent) living in the home (DeCator et al., 2016). See Table 1 for full demographic characteristics.

**Table 1.**

***Demographic Characteristics of Participants (N = 106)***

	<i>M (SD)</i>
Age	11.91(1.95)
7 yrs	1 (.9)
8 yrs	9 (8.5)
9 yrs	5 (4.7)
10 yrs	9 (8.5)
11 yrs	13 (12.3)
12 yrs	19 (17.9)
13 yrs	23 (21.7)
14 yrs	26 (24.5)
15 yrs	1 (.9)
Sex	<i>M (%)</i>
Female	45(42.5)
Male	61 (57.5)

Race & Ethnicity	<i>M</i> (%)
Caucasian; non-Hispanic White	46 (43.4)
African American	42 (39.6)
Hispanic/Latino	18 (17.0)
<b>Family Income</b>	
\$0-\$15,000	10(9.7)
\$15,000-\$20,000	3(2.9)
\$20,000-\$25,000	6(5.8)
\$25,000-\$30,000	8(7.8)
\$30,000-\$35,000	8(7.8)
\$35,000-\$40,000	5(4.9)
\$40,000-\$45,000	4(3.9)
\$45,000-\$50,000	7(6.8)
\$50,000-\$55,000	4(3.9)
\$55,000-\$60,000	5(4.9)
\$60,000-\$65,000	2(1.9)
\$65,000-\$70,000	3(2.9)
\$70,000-\$75,000	7(6.8)
Over \$75,000	31(30.1)

*Note.* Three surveys had missing data for annual income and therefore excluded, making average household income N=103.

## **Procedure**

Participants were recruited through schools and community-based organizations throughout greater Chicago via information sessions, online advertisements (e.g., Craigslist), and

flyers posted in the community. Participants completed the survey onsite at one of two private midwestern universities. Parents and child participants each received a \$20 gift card for completing the questionnaire session. Following IRB requirements, all participants received information on the study procedure [and provided informed consent] before participating. After completing all tasks, participants were debriefed and compensated accordingly.

Two internal review boards approved the procedures. Once recruited, the participants were contacted via phone or email and asked to come to the lab at either Rosalind Franklin University or DePaul University to complete the survey within the next few days. It was a 60-minute session. The participants were asked questions about typical mealtime behaviors that occur in the setting of their typical family environments. They were asked to answer all questions on the survey to the best of their ability. After completing the survey, the participants were debriefed and compensated.

## **Measures**

***Frequency of Family Meals.*** The parents reported the frequency of family meals. The survey item asked, "During the past 7 days, how many meals did all or most of your family sit down and eat together at home?". The options for family meal frequency were on a 6-point Likert scale of never, 1-2 times, 3-4 times, 5-6 times, 7 times, and more than 7 times. Scores were calculated by averaging all participants' results for the one mealtime frequency question. They were coded 1, 2, 3, 4, and 5, respectively.

***Technology Use During Family Meal.*** For this measure, the TAP survey data was used. The data for technology use during family meals were taken from the Family Health and Related Behaviors survey section for the parent-reported responses. This section was a 5-item measure.

Example survey items included "How often does your child do the following at family meals: Watch television or movies?" and "How often does your child do the following at family meals: talk on the phone (cell or other)?" The responses were on a 4-point scale of "never or rarely," "sometimes," "usually," and "always." Scores were summed to create a total score, with higher scores indicating more technology use.

***Meal Quality of Family Meals.*** In this study, the TAP survey data was used. The data for meal quality of family meals were taken from the survey section on Family Health and Related Behaviors reported by the parents. This section was a 6-item survey. The questions were about typical family dinners at home. Example questions include "Is a green salad served?", "are vegetables other than potatoes served?" and "Is fruit (not including juice) served?". The responses were on a 4-point scale of "never or rarely," "sometimes," "usually," and "always." They were coded 1, 2, 3, and 4, respectively. Scores were summed to create a total score, with higher scores indicating higher meal quality.

***Parent Meal Expectations/Values.*** The TAP survey data was used. The data for meal quality of family meals were taken from the survey section on Family Health and Related Behaviors reported by the parents. The questions were about the parents' expectations and a 4-item survey. Example questions included "In our family, children are expected to be home for dinner" and "It is important that our family eat at least one meal a day together." The responses were on a 4-point scale of "strongly disagree," "somewhat disagree," "somewhat agree," and "strongly agree." Scores were summed; higher scores represent higher parental meal expectations and values.

***Child Enjoyment of Family Meal.*** Children reported on the 1-item survey that asked them to choose the best option for the statement "I enjoy eating meals with my family." Responses were on a 4-point scale of "strongly disagree," "somewhat disagree," "somewhat agree," and "strongly agree." Scores were calculated by averaging the one-child enjoyment of family meals question results.

***Depression Symptomatology.*** Depressed mood/symptoms were a child's self-reported measure. A subscale of the Early Adolescent Temperament Questionnaire was used (EATQ-R; Rothbart et al., 2003). It consisted of a 6-question survey about temperament on a 5-point scale of "almost always untrue," "usually untrue," "sometimes true, sometimes untrue," "usually true," and "almost always true." The 6-item survey related to depression symptoms. Example questions included: "I get sad more than other people realize" and "My friends seem to enjoy themselves more than I do." They were coded 1, 2, 3, 4, and 5, respectively. One question needed to be reversed scored- "I feel pretty happy most of the day." Depression symptomatology scores were calculated by averaging the temperament questionnaire. Higher scores indicate higher levels of depressive symptomatology.

### **Data Analytic Plan**

All data were analyzed using both the SPSS statistical software package (Version 27.0) and R statistical software (Version 1.4.1717 (2021-05-24)). Descriptive statistics were used to summarize children's demographic and family characteristics. The data analyses were controlled for age, gender, and race if preliminary analyses reveal a significant association between these variables and depression. To check validity, alpha and omega values were calculated to assess the internal consistency of the items on that subscale.



Hypothesis I was tested using a regression analysis using frequency of family meals as the independent variable and depression as the dependent variable. Hypothesis II was answered by running a regression analysis to determine if enjoyment is the most predominant variable of the other mealtime characteristics. Depression was the dependent variable, and child enjoyment, technology use, meal quality, and parent meal values were the multiple independent variables. Finally, hypothesis III was addressed by running a moderation using Process MACRO to assess the moderation effects and correlation with family meal frequency, mealtime characteristics, and depressive symptoms. We looked at frequency x enjoyment, as well as frequency x technology use, frequency x meal quality, and frequency x parent meal values to evaluate their impacts on depression.

## Results

Hypothesis I stated that a greater frequency of family meals would negatively correlate with depression in children. Hypothesis I was tested using correlation analyses. We did not find any significant data suggesting that a greater frequency of family meals was associated with lower levels of depression in children as reported by children ( $r = .073, ns$ ) or by parents ( $r = -.107, ns$ ). The complete correlation table can be seen in Table 2.

**Table 2.**  
*Correlations Among Study Variables*

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Age	1	.031	.018	-.236*	-.216*	-.036	-.245*	-.016	.077
2. Gender	.031	1	-.125	.011	-.009	.054	.111	-.218*	-.148*
3. Frequency	.018	-.125	1	.397**	.080	-.284**	.138	.073	-.107
4. Expectation	-.236*	.011	.397**	1	.163	-.115	.179	-.081	-.256**
5. Quality	.216*	-.009	.080	.163	1	.080	.008	-.193*	-.169

6. Tech use	-.036	.054	-.284**	-.115	-.080	1	.012	.092	.005
7. Enjoyment	-.245*	.111	.138	.179	.008	.012	1	-.135	-.125
8. Dep – C	-.016	-.218*	.073	-.081	-.193*	.092	-.135	1	.299**
9. Dep - P	.077	-.148	-.107	-.256**	-.169	.005	-.125	.299**	1
Mean	11.91	1.58	3.81	2.87	2.62	1.77	3.47	2.42	2.31
SD	1.95	.50	1.45	.58	.48	.77	.73	.70	.71

\*Correlation is significant at the 0.01 level (2-tailed)

\*\*Correlation is significant at the 0.05 level (2-tailed)

Note. C= child report; P = Parent report

Hypothesis II stated that child enjoyment of family meals would be more closely related to depression than the other mealtime characteristics. Hypothesis II was tested using regression analyses. Frequency of family meals, parent meal expectations, enjoyment, quality, and technology use were entered as predictors of depression in linear regression. We did not find significant results confirming that child enjoyment of family meals is more closely related to child reports of depression than the other mealtime characteristics in Hypothesis II ( $\beta = -.104$ , *ns*) (see Table 3). Child enjoyment was not uniquely related to parent reports of child depression. No mealtime characteristics uniquely predicted parent or child reports of depression.

Despite the lack of significant findings in the regression model, bi-variate associations between family meal characteristics and depression using child and parent reports were examined using correlation analyses. The parent meal expectations composite was significantly negatively correlated with the depressed mood composite for the parent-reported surveys ( $r = -.256$ ,  $p = .008$ ). The direction of these effects indicates that higher expectations were associated with lower levels of parent-reported depression. This effect was not found for child-reported symptoms ( $r = -.081$ , *ns*). The full correlation table can be seen in Table 2.

Hypothesis III stated that the impact of family meal frequency on depressive symptoms would vary as a function of family meal enjoyment such that high levels of frequency of family meals plus high levels of enjoyment by the children would result in the lowest levels of depression. Hypothesis III was tested using moderation analyses with the PROCESS macro (Hayes, 2017). Family enjoyment and meal frequency were entered as predictors of parent and child-reported depression symptoms in separate models. The interaction term between them was used to test the moderation effect. The interaction term was non-significant in the parent ( $\beta = .0026$ , see Table 4) and child report ( $\beta = -.044$ , see Table 4) models. No other regression coefficients were significant in this model either.

**Table 3.**

*Unique Effects of Mealtime Characteristics on Child and Parent Report of Depressive Symptoms*

Effect	Child Report				Parent Report			
	Estimate	SE	95% CI		Estimate	SE	95% CI	
			LL	UL			LL	UL
Intercept	0	.618	2.46	4.91	0	.640	3.06	5.59
Sex	-.188	.137	-.536	.007	-.145	.142	-.492	.071
Tech Use	.146	.090	-.047	.312	-.038	.094	-.221	.150
Enjoyment	-.120	.098	-.315	.075	-.086	.102	-.291	.114
Quality	-.188	.137	-.537	.019	-.134	.145	-.488	.089
Expectations	-.060	.128	-.043	.182	-.215	.133	-.531	-.004
Frequency	.128	.053	-.043	.167	-.013	.055	-.115	.102

*Note.* CI = confidence interval; LL = lower limit; UL = upper limit; \* =  $p < .05$ ; \*\* =  $p < .01$ ; \*\*\* =  $p < .001$ .

## Supplemental Analyses

Additional correlation analyses were conducted to determine whether individual symptoms of depression were associated with mealtime characteristics, given the lack of significant findings in the proposed initial analyses. For child reports of individual symptoms, the frequency of mealtimes being correlated with a specific depression symptom like "I get sad more than other people realize" showed ( $r = .236, p = .015$ ). Concerning parent reports of individual symptoms, we also found that when looking at the individual indicators of depression in the parent and child-reported surveys, parent report of their child not enjoying things was negatively correlated with meal expectations ( $r = -.247, p = .011$ ) and family meal enjoyment ( $r = -.191, p = .050$ ). Parent reports of their child seeming sad were negatively correlated with meal expectations ( $r = -.192, p = .049$ ) and enjoyment ( $r = -.192, p = .048$ ). See Table 4 for full details. We did, however, find a significant result of the meal quality composite being negatively correlated with depressed mood in the child-reported survey ( $r = -.193, p = .050$ ).

**Table 4.**  
*Moderating Effect of Enjoyment on Frequency on Child and Parent Report of Depressive Symptoms*

Effect	Child Report				Parent Report			
	Estimate	SE	95% CI		Estimate	SE	95% CI	
			LL	UL			LL	UL
Intercept	2.58	1.00	.589	4.57	3.21	1.02	1.17	5.25
Sex	-.270	.138	-.545	.005	-.218	.142	-.501	.064
Frequency	.186	.254	-.318	.691	-.064	.261	-.582	.453
Enjoyment	.043	.071	-.503	.589	-.099	.282	-.659	.461
Frequency x Enjoyment	-.044	.071	-.186	.097	.0026	.733	-.143	.148

*Note.* CI = confidence interval; LL = lower limit; UL = upper limit; \* =  $p < .05$ ; \*\* =  $p < .01$ ; \*\*\* =  $p < .001$ .

**Table 5.**  
*Correlations Between Individual Depression Items and Mealtime Characteristics*

Variable	Wrong Sad P	Enjoy Sad P	More Sad P	Enjoy P	Crying P	Happy C	Enjoy C	Crying C	More Sad C	Wrong Sad C	Enjoy Sad C
1. Frequency	-.085	.029	-.114	-.055	-.119	.069	-.032	-.114	.236*	-.126	-.032
2. Expectation	-.062	-.192*	-.187	-.247*	-.155	.007	-.061	-.035	-.077	-.093	-.027
3. Quality	-.015	-.250*	-.088	-.130	-.096	-.145	-.065	-.252**	-.203*	.056	-.076
4. Tech use	-.115	-.026	.025	.038	.073	-.004	.066	.075	-.125	.152	.183
5. Enjoyment	.005	-.191*	-.104	-.192*	.067	-.201*	-.025	-.090	-.195*	.069	-.074

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

*Note.* C= child reported; P= parent reported; Wrong Sad P= "Is hardly ever sad, even when lots of things are going wrong."; Enjoy Sad P= "Sometimes seems sad even when s/he should be enjoying her/himself like at Christmas, or on a trip."; More Sad P= "Is sad more often than other people realize."; Enjoy P= "Often does not seem to enjoy things as much as his/her friends."; Crying P= "Feels like crying over very little on some days."; Happy C= "I feel pretty happy most of the day."; Enjoy C= "My friends seem to enjoy themselves more than I do."; Crying C= "It often takes very little to make me feel like crying."; Sadder C= "I get sad more than other people realize."; Wrong Sad C= "I get sad when a lot of things are going wrong."; Enjoy Sad C= "I feel sad even when I should be enjoying myself, like at Christmas or on a trip."

## Discussion

The overall purpose of the current study was to examine parental and child reports of depression and how family mealtime characteristics are associated with depressive symptoms. The first hypothesis exploring the frequency of family meals related to lower levels of depression in a child was not supported by our data. The hypothesis that enjoyment of family meals would be more closely associated with depression than the other mealtime characteristics was not

supported. Finally, the hypothesis testing whether the frequency of family meals plus the combination of high levels of enjoyment of the family meals would produce the lowest levels of depression was not supported. Even though primary hypotheses were not kept for overall symptoms of depression, supplemental analyses showed that specific individual symptoms of depression were associated with mealtime characteristics and that mealtime characteristics were related to each other.

### **Relations Between Mealtime Characteristics**

The surveys revealed some significant associations between the different mealtime characteristics. The frequency of family meals was positively correlated with parent expectations, indicating that as parent expectations were higher, the frequency of family meals was higher as well. Also, the frequency of family meals was significantly negatively correlated with technology use during mealtimes. This means higher reports of technology use during mealtime were associated with a lower frequency of family meals. These results highlight the benefits of family meal frequency concerning the family environment and habits around family meals.

The values and expectations that parents have around mealtimes can have a significant impact on the outcomes of family meals. These values may include household rules such as helping with meal preparation, setting the table, and doing dishes after dinner. Manners such as using good table etiquette and refraining from interrupting others are emphasized. The family's values and expectations can affect the functioning of the meal and impact the level of satisfaction or openness during the meal. Ultimately, these factors can influence family meals' impact on reducing depression symptoms (Skeer et al., 2017).

## **Family Meal Frequency**

In the current study, no significant impact on the frequency of family meals on either child or parent report of depressive symptoms was found. Existing scholars directly informed our line of inquiry, the creation of our hypotheses, and supported the assumed outcome we held going into the research such as Eisenberg et al. (2004), Utter et al. (2013), and Harrison et al. (2015). Our studies were different in methodology, which could account for discrepancies in our findings. For example, Harrison et al. (2015) was a systematic review of fourteen papers of various studies that discussed the role of family meals on psychosocial outcomes. Eisenberg et al. (2004) and Utter et al. (2013) only used child-reported data, while we used both child and parent-reported data. Possible explanations for the absence of significant findings about our hypotheses could be attributed to potential biases or shortcomings in the reporting of data. It is plausible that children might have inaccurately reported their experiences, presenting information that does not truly reflect their emotions, possibly due to their inclination to conform to societal expectations or predetermined norms (Barney et al., 2006).

One notable distinction of our study, compared to other similar studies, is that we examined data reported by both children and parents. This approach provided us with a more comprehensive and integrated understanding of family mealtime behaviors and child depression symptomatology. However, it is important to acknowledge that this methodology introduced a potential source of error, as inconsistencies between the child and parent data could complicate the attainment of clear and statistically significant results. In contrast, many previous studies relied solely on self-reports from adolescents (Harrison et al., 2015).

Finally, the sample size may not have been large enough to detect an association. Our sample sizes were significantly different: Eisenberg et al. (2004) had 4,746 adolescents in their study, Utter et al. (2013) had 9,107 adolescents, while our study had a sample size of 106 children. In comparison to the other studies, my sample size may not have been large enough to detect an association which may have contributed to a disparity in results.

Studies like Prior and Limbert (2013) suggest that child enjoyment of family meals can lead to positive outcomes and thus help children's' well-being. However, in our study, the lack of significant results in hypothesis II led us to believe other mealtime characteristics can impact more significantly than child enjoyment. However, when tested, no mealtime characteristics predicted parent or child reports of depression. The accuracy of parental reporting on child depression symptoms might not have fully captured the actual thoughts and emotions experienced by the child. There could be disparities in the perceptions of parents and children leading to variations in the agreement between them concerning depressive symptoms in children (Kim et al., 2016).

Prior and Limbert (2013) had a two-staged study with a focus group conducted in school and a family meal questionnaire filled out by the adolescents to examine adolescent perceptions and experiences of family meals. The study broke the results down to compare male and female adolescents, while our study did not have two stages or was interested in male and female differences. Ultimately, these differences could have led to the differences in findings. Family meals are associated with positive social outcomes, including enhanced family cohesion and stress reduction. Prior and Limbert discovered significant findings that established a link between the frequency of family meals and heightened family unity among both males and females (2013).



Our third hypothesis, supported by Decator et. al (2016) and Prior and Limbert's (2013) studies, emphasizes the importance of child enjoyment of family meals. The results of hypothesis III suggest that future research should also investigate the individual symptoms of depression, how they may relate to mealtime characteristics, and how they may be associated with depression in children.

We did find that there are relationships between mealtime characteristics and specific depression symptoms, according to parent and child reports. Mealtime enjoyment and meal expectations were each correlated with two depression items that were parent reported- "sometimes seems sad even when s/he should be enjoying her/himself like at Christmas, or on a trip" and "often does not seem to enjoy things as much as his/her friends." Child enjoyment of mealtime and parental expectations of mealtime is functioning in the same way as depression. They are both marginally correlated with each other. The more mealtime expectations the parents reported having, the more enjoyment the child reported.

It is interesting to find results that suggest the more expectations of mealtime the parents have, the more enjoyment the children report having during mealtime. Our results could be because, with these parental expectations, the children know what is to come of these meals and therefore are more prepared, leading them to be more relaxed and less hostile or anxious during the meal. Alternatively, the parental expectations prompt the children to think about their day and open a safe space to voice themselves, thus leading them to open communication with their family and making the experience more enjoyable (Zarnaghash et al., 2013).

### **Strength of the Current Study**

The current study had several strengths. For one, it looked at parent and child reports of depression. This examination allowed us to get the perspective from both sides, which is vital

given the differences in reporting depressive symptoms between parents and children (Kim et al., 2017). Child reports of depressive symptoms met diagnostic thresholds more frequently (Serafimova et al., 2021). However, in the current study, most of our significant findings were with parent reports of individual depressive symptoms, indicating that parents in our sample were aware of their children's symptoms. For example, "is sadly more than other people realize" is not significantly correlated with frequency in the parent-reported survey. However, it is correlated significantly with frequency in the child survey. This finding may indicate that parents and children had different views on the reports. So it could be that parental reports of sadness may not be the most appropriate indicator of depression among children. In addition, we found results while using multiple informants, like having a significant correlation between the parent and child reports of depression.

Another strength of this study was its racially and economically diverse sample. This strength is necessary because our results can be generalized to a diverse population who have English-speaking parents. By having a diverse sample, we can feel confident that we are getting input from people of different backgrounds, making the results generalizable. Having multiple informants of both parents and children gives us an even deeper level of diversity and generalizability.

Family environment and parent-child relationship can impact child depressive symptoms. By looking at other mealtime characteristics besides frequency, we highlighted the importance of building quality family interactions in families where schedules may not permit daily family meals. A study by Barrere and Garrison-Jones (1992) examined the association between social relationships and mental health symptoms in adolescent psychiatric inpatients and found that family support, particularly satisfaction with the father's support, was uniquely linked to

depression symptoms. Adolescents with higher levels of depression reported less supportive family relationships and lower satisfaction with their father's support. These findings show that even in situations where family meals may not be feasible, family environments and parent-child relationships can play a significant role in child depression symptomology.

### **Limitations and Future Directions**

In future studies, it may be advantageous to have a higher sample size to ensure we can assess patterns accurately. Having a larger sample size can increase statistical power and enhance the representativeness of the data. The surveys rely on participant recollection. There may be vastly different answers had participants have been asked to keep a journal and use notes to complete a survey. Also, in future research, it could be helpful and more accurate to have the children and parents keep daily journals about mealtime characteristics, behaviors, and overall mental wellness assessment to help create an accurate, real-time picture of the mealtimes and how child depression symptoms are instead of relying on memory to deliver the answer to the survey later which can lead to incorrect responses. Other studies like Eisenberg et al. (2004), Karmimi et al. (2019), Fulkerson et al. (2006), Kim et al. (2013), and Utter et al. (2013) found significant correlations between family meals and adolescent depression symptoms used similar methodology in terms of collecting the data to ours. They administered surveys that were self-reported by adolescents. The differences that caused non-significant findings for our study could again have been due to our relatively small sample size compared to these other studies.

Additionally, the eligibility criteria for participants, including having a working AVG (active video game console) in the home and being English-speaking with at least one English-speaking parent or legal guardian, may limit the sample's representativeness. Having an AVG can provide insights into the family's income level. Previous studies have indicated that income

can have varying impacts on family meal dynamics. Research conducted by Berge and colleagues (2018) and Fulkerson and colleagues (2014) has shown that income influences how family meals function and differ among households. Additionally, Skeer and colleagues (2016) addressed sociodemographic variations and observed differences in family meal characteristics, such as the duration of meals, based on factors like parental place of birth.

Perspectives and stigmas of mental health may create difficulty in accurately reporting and admitting to symptoms (Barney et al., 2006). The main issue was that there are several different ways to define family meals. For example, "...when the whole family sits at home around the table and eats together. Through family meals, family members are aware of the concept of community, talk about various family issues, and express affection and connectedness. The frequency of family meals is related to improved quality and balance of diet and eating habits in children" (Kim et al., 2013, p.206), "how often most or all family members shared a meal, "regular" family dinners" (Fulkerson et al., 2014, p.2), "on average, how many times per week do you and your adolescent child eat breakfast/dinner together?" (Wong et al., 2022, p.2), "During the past seven days, how many times did all, or most, of your family living in your house eat breakfast together?" (Larson et al., 2013). Several articles have differing understandings of what a family meal is. So, these discrepancies on defining the meal could misconstrue the data if there is no standard, clear definition of family meals.

Having a universal definition of family meals can allow for more cohesiveness and generalizability in the studies. Ideally, the definition of a family meal would include having at least half of one's family that lives in the house sitting down and sharing a meal in the company of each other. It is unclear if the family meals should be specific to a time of day, such as breakfast, lunch, or dinner (Koszewski et al., 2011). The type of meal may influence the

effectiveness of its impact on the children. These different meals vary in length (Skeer et al., 2016), so it is unclear if the family meal needs to be a certain amount of time to be effective and see the influence on depressive symptoms. It could be helpful to have a set amount of length and a similar time of day for each participant's family meals so we could rule out these differences as confounding variables. However, it is complicated because of each family's differing situations, such as being single parents, working at different times, children's extracurricular activities, and other factors.

## **Conclusion**

Overall, one overarching theme evident to us was the importance of looking at mealtime characteristics other than frequency. The study tested three hypotheses about the association between family meal characteristics and child depression using correlation and regression analyses. Hypothesis I, which predicted that a greater frequency of family meals would be associated with lower levels of depression in children, was not supported by the data. Hypothesis II, which stated that child enjoyment of family meals would be more closely related to depression than other mealtime characteristics, was also not supported by the regression analyses. However, some bi-variate correlations were found between family meal characteristics and depression symptoms, particularly for parent reports. Hypothesis III, which proposed that the impact of family meal frequency on depressive symptoms would vary depending on family meal enjoyment, was not supported by moderation analyses. Finally, supplemental analyses showed that some individual symptoms of depression correlated with mealtime characteristics, with some negative correlations found between meal expectations, enjoyment, quality, and specific depression symptoms.

The research did not discover statistically significant evidence supporting the proposed connections between specific attributes of family meals and child depression. The study only examined the frequency of family meals, child enjoyment of family meals, technology use during family meals, and parent meal expectations/values, which may not fully capture all factors that could influence family mealtime behaviors. Future studies should explore this further to help educate and promote positive family routines around mealtimes to help decrease child depressive symptomology.

### **References**

Agathão, B. T., Cunha, D. B., Sichieri, R., & Lopes, C. S. (2021). The role of family meal frequency in common mental disorders in children and adolescents over eight months of follow-up. *PLOS ONE*, *16*(2). <https://doi.org/10.1371/journal.pone.0243793>

- Barney, L. J., Griffiths, K. M., Jorm, A. F., & Christensen, H. (2006). Stigma about depression and its impact on help-seeking intentions. *Australian & New Zealand Journal of Psychiatry, 40*(1), 51–54. <https://doi.org/10.1080/j.1440-1614.2006.01741.x>
- Barrera, M., & Garrison-Jones, C. (1992). Family and peer social support as specific correlates of adolescent depressive symptoms. *Journal of Abnormal Child Psychology, 20*(1), 1–16. <https://doi.org/10.1007/bf00927113>
- Berge, J. M., Draxten, M., Trofholz, A., Hanson-Bradley, C., Justesen, K., & Slattengren, A. (2018). Similarities and differences between families who have frequent and infrequent family meals: A qualitative investigation of low-income and minority households. *Eating Behaviors, 29*, 99–106. <https://doi.org/10.1016/j.eatbeh.2018.02.007>
- Davison, J., Stewart-Knox, B., Connolly, P., Lloyd, K., Dunne, L., & Bunting, B. (2021). Exploring the association between mental well-being, health-related quality of life, family affluence, and food choice in adolescents. *Appetite, 158*, 105020. <https://doi.org/10.1016/j.appet.2020.105020>
- Dallacker, M., Hertwig, R., & Mata, J. (2018). The frequency of family meals and nutritional health in children: a meta-analysis. *Obesity reviews: an official journal of the International Association for the Study of Obesity, 19*(5), 638–653. <https://doi.org/10.1111/obr.12659>
- DeCator, D. D., Carter, J. S., & Schneider, K. L. (2016). Brief report: Family meals, obesogenic factors, and depressive symptoms in youth. *Mental Health and Physical Activity, 10*, 1–3. <https://doi.org/10.1016/j.mhpa.2016.01.002>
- Eisenberg, M. E., Olson, R. E., Neumark-Sztainer, D., Story, M., & Bearinger, L. H. (2004). Correlations between family meals and psychosocial well-being among adolescents.

*Archives of Pediatrics & Adolescent Medicine*, 158(8), 792.

<https://doi.org/10.1001/archpedi.158.8.792>

Elgar, F. J., Craig, W., & Trites, S. J. (2013). Family dinners, communication, and mental health in Canadian adolescents. *Journal of Adolescent Health*, 52(4), 433–438.

<https://doi.org/10.1016/j.jadohealth.2012.07.012>

<https://doi.org/10.1177/0192513x12445889>

Fruh, S. M., Fulkerson, J. A., Mulekar, M. S., Kendrick, L. A., & Clanton, C. (2011). The surprising benefits of the family meal. *The Journal for Nurse Practitioners*, 7(1), 18–22.

<https://doi.org/10.1016/j.nurpra.2010.04.017>

Fulkerson, J., Larson, N., Horning, M., & Neumark-Sztainer, D. (2014). A review of associations between family or shared meal frequency and dietary and weight status outcomes across the lifespan. *Journal of Nutrition Education and Behavior*.

<https://pubmed.ncbi.nlm.nih.gov/24054888/>

Fulkerson, J. A., Story, M., Mellin, A., Leffert, N., Neumark-Sztainer, D., & French, S. A.

(2006). Family dinner meal frequency and adolescent development: Relationships with developmental assets and high-risk behaviors. *Journal of Adolescent Health*, 39(3), 337–345. <https://doi.org/10.1016/j.jadohealth.2005.12.026>

Goldfarb, S., Tarver, W., & Sen, B. (2014). Family structure and risk behaviors: The role of the family meal in assessing the likelihood of adolescent risk behaviors. *Psychology Research and Behavior Management*, 53. <https://doi.org/10.2147/prbm.s40461>

Haghighatdoost, F., Kelishadi, R., Qorbani, M., Heshmat, R., Motlagh, M.E., Ardalan, G., & Azadbakht, L. (2017). Family dinner frequency is inversely related to mental disorders and obesity in adolescents: the CASPIAN-III study. *Arch Iran Med*, 20(4), 218 – 223



- Hammons, A. J., & Fiese, B. H. (2011). Is the frequency of shared family meals related to the nutritional health of children and adolescents? *Pediatrics*, *127*(6).  
<https://doi.org/10.1542/peds.2010-1440>
- Harbec, M.-J., & Pagani, L. S. (2018). Associations between early family meal environment quality and later well-being in school-age children. *Journal of Developmental & Behavioral Pediatrics*, *39*(2), 136–143. <https://doi.org/10.1097/dbp.0000000000000520>
- Harrison M.E., Norris M.L., Obeid N., Fu M., Weinstangel H., & Sampson M. (2015). A systematic review of the effects of family meal frequency on Psychosocial Outcomes in youth. *Canadian family physician* *61*(2), 96-104  
<https://pubmed.ncbi.nlm.nih.gov/25676655/>
- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.
- Ho, H. C., Mui, M., Wan, A., Stewart, S. M., Yew, C., Lam, T. H., & Chan, S. S. (2017). Happy family kitchen: Behavioral outcomes of a brief community-based family intervention in Hong Kong. *Journal of Child and Family Studies*, *26*(10), 2852–2864.  
<https://doi.org/10.1007/s10826-017-0788-3>
- Karimi, G., Vard, B., Riyahi, R., Motlagh, M. E., Heshmat, R., & Kelishadi, R. (2019). Association between family dinner frequency and mental health in children and adolescents; the Caspian-V study. *International Journal of Food Sciences and Nutrition*, *71*(5), 628–634. <https://doi.org/10.1080/09637486.2019.1700485>
- Kim, J., Chan, Y.-F., McCauley, E., & Vander Stoep, A. (2016). Parent-child discrepancies in reporting of child depression in ethnic groups. *The Journal for Nurse Practitioners*, *12*(6), 374–380. <https://doi.org/10.1016/j.nurpra.2016.01.018>

- Kim, Y.-S., Lee, M.-J., Suh, Y.-S., & Kim, D.-H. (2013). Relationship between family meals and depressive symptoms in children. *Korean Journal of Family Medicine, 34*(3), 206.  
<https://doi.org/10.4082/kjfm.2013.34.3.206>
- Koome, F., Hocking, C., & Sutton, D. (2012). Why routines matter: The nature and meaning of family routines in the context of adolescent mental illness. *Journal of Occupational Science, 19*(4), 312–325. <https://doi.org/10.1080/14427591.2012.718245>
- Koszewski, W., Behrends, D., Nichols, M., Sehi, N., & Jones, G. (2011). Patterns of family meals and food and nutrition intake in limited resource families. *Family and Consumer Sciences Research Journal, 39*(4), 431–441. <https://doi.org/10.1111/j.1552-3934.2011.02080.x>
- Larson, N., MacLehose, R., Fulkerson, J. A., Berge, J. M., Story, M., & Neumark-Sztainer, D. (2013). Eating breakfast and dinner together as a family: Associations with sociodemographic characteristics and implications for diet quality and weight status.” *Journal of the Academy of Nutrition and Dietetics, 113*(12), 1601–1609, <https://doi.org/10.1016/j.jand.2013.08.011>.
- Neumark-Sztainer, D., Larson, N. I., Fulkerson, J. A., Eisenberg, M. E., & Story, M. (2010). Family Meals and Adolescents: What have we learned from Project EAT (eating among teens)? *Public Health Nutrition, 13*(7), 1113–1121.  
<https://doi.org/10.1017/s1368980010000169>
- Overcash, F., Davey, C., Zhang, Y., & Reicks, M. (2020). Evening meal types and family meal characteristics: Associations with demographic characteristics and food intake among adolescents. *Nutrients, 12*(4), 886. <https://doi.org/10.3390/nu12040886>

- Prior, A.-L., & Limbert, C. (2013). Adolescents' perceptions and experiences of family meals. *Journal of Child Health Care, 17*(4), 354–365.  
<https://doi.org/10.1177/1367493512462261>
- Rothbart, M. K., Ellis, L. K., Rosario Rueda, M., & Posner, M. I. (2003). Developing mechanisms of temperamental effortful control. *Journal of Personality, 71*(6), 1113–1144.  
<https://doi.org/10.1111/1467-6494.7106009>
- Robson, S. M., McCullough, M. B., Rex, S., Munafò, M. R., & Taylor, G. (2020). Family meal frequency, diet, and family functioning: A systematic review with Meta-analyses. *Journal of Nutrition Education and Behavior, 52*(5), 553–564.  
<https://doi.org/10.1016/j.jneb.2019.12.012>
- Serafimova, T., & Giel, K.E. (2021). Who should we ask about mental health symptoms in adolescents with CFS/Me? Parent-child agreement on the revised children's anxiety and depression scale. *Clinical Child Psychology and Psychiatry, 26*(2), 367–380,  
<https://doi.org/10.1177/1359104521994880>.
- Skeer, M. R., Ballard, E. L., Connell, C. M., Nasrullah, M., Terry, M.A., & Margolin, G. (2016). Sociodemographic characteristics associated with frequency and duration of eating family meals: A cross-sectional analysis. *SpringerPlus, 5*(1), 2016,  
<https://doi.org/10.1186/s40064-016-3739-3>.
- Skeer, M. R., Sonnevile, K. R., Deshpande, B. R., Goodridge, M. C., & Folta, S. C. (2017). Going beyond frequency: A qualitative study to explore new dimensions for the measurement of family meals. *Journal of Child and Family Studies, 27*(4), 1075–1087.  
<https://doi.org/10.1007/s10826-017-0967-2>

- Song, L., Fang, P., Jiang, Z., Li, S., Song, X., & Wan, Y. (2022). Mediating effects of parent-child relationship on the association between childhood maltreatment and depressive symptoms among adolescents. *Child Abuse & Neglect, 131*, 105408. <https://doi.org/10.1016/j.chiabu.2021.105408>
- Trofholz, A. C., Tate, A. D., Miner, M. H., & Berge, J. M. (2017). Associations between TV viewing at family meals and the emotional atmosphere of the meal, meal healthfulness, Child dietary intake, and child weight status. *Appetite, 108*, 361–366. <https://doi.org/10.1016/j.appet.2016.10.018>
- Utter, J., Denny, S., Peiris-John, R., Moselen, E., Dyson, B., & Clark, T. (2017). Family meals and adolescent emotional well-being: Findings from a national study. *Journal of Nutrition Education and Behavior, 49*(1). <https://doi.org/10.1016/j.jneb.2016.09.002>
- Utter, J., Denny, S., Robinson, E., Fleming, T., Ameratunga, S., & Grant, S. (2013). Family meals and the well-being of Adolescents. *Journal of Pediatrics and Child Health, 49*(11), 906–911. <https://doi.org/10.1111/jpc.12428>
- Watts, A. W., Loth, K., Berge, J. M., Larson, N., & Neumark-Sztainer, D. (2017). No time for family meals? Parenting practices associated with adolescent fruit and vegetable intake when family meals are not an option. *Journal of the Academy of Nutrition and Dietetics, 117*(5), 707–714. <https://doi.org/10.1016/j.jand.2016.10.026>
- Wong, R. S., Tung, K. T., Chow, K. H., Law, A. R., Ho, F. K., Chan, K. L., & Ip, P. (2022). Exploring the role of family communication time in the association between family dinner frequency and adolescent psychological distress. *Current Psychology*. <https://doi.org/10.1007/s12144-021-02639-x>

Zarnaghash, M., Zarnaghash, M., & Zarnaghash, N. (2013). The relationship between family communication patterns and Mental Health. *Procedia - Social and Behavioral Sciences*, 84, 405–410. <https://doi.org/10.1016/j.sbspro.2013.06.575>