

## **Effects of the Family Environment on Adolescent Development**

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## Introduction

**Abstract:** Our study analyzes the effects that one's family environment has on three areas of adolescent development: peer-to-peer interpersonal relationships, social skills, and academic performance. Using stratified sampling methods, we will collect a sample of 200 seventh-grade students from four different middle schools throughout Massachusetts. The number of students from each school will be representative of the schools that they attend in terms of race and gender. The study will use both semi-structured interviews and surveys to assess the child and parent-reported environments, as well as Massachusetts Comprehensive Assessment System (MCAS) test scores to assess academic performance in English, reading comprehension, and mathematics. We predict that we will find a significant positive correlation between family dynamics within the home and childhood development. We also hypothesize that socioeconomic status will be a covariate that has a moderate influence on results, so we will control for this in our study.

Childhood development is a critical period that can influence a child's development and future outcomes. While many factors play a role in adolescent development, the family environment can greatly impact one's academic achievement, emotional regulation, and social behaviors. For instance, parental involvement is often seen as a pathway through which schools can enhance the achievement of children who are underperforming (Berger, 1991). If parents take on a more active role in their children's education, they can better motivate them to learn and they can provide the tools they need to succeed, allowing for improved performance. There is also much support for the idea that childhood trauma has a substantial negative impact on a child's social skills and functioning, namely their ability to form healthy peer-to-peer relationships and exhibit social competence (Pfaltz et al., 2022). Supportive relationships within

the home can lessen the negative effects of trauma by creating a feeling of security and can therefore help improve social functioning (Pfaltz et al., 2022). This illustrates the importance of parental involvement and a nurturing home environment that helps foster healthy development. Our study aims to gain a better understanding of the interplay between familial factors and youth development. Our research questions are: What kind of family environment is “healthy” for adolescents? What impact does the family environment, particularly parenting styles and levels of childhood trauma, have on peer-to-peer interpersonal relationships, social skills, and academic performance?

## **Literature Review**

While conducting preliminary research, we noticed many similarities across the literature. One finding that was consistent across our research was the conclusion that a “healthy” family environment leads to more positive outcomes for children (Butler et al., 2022). While there are various definitions of what it means for a family environment to be “healthy”, a consistent finding was that this type of environment is characterized by supportive relationships, open communication, positive styles of parenting, and conflict management (Barnhart et al., 2022; Looman et al., 2023). Supportive relationships within the family context create a feeling of security and belonging, while open communication fosters expression and emotional intelligence. Positive parenting offers guidance and direction by providing consistent support within the home, and conflict management is crucial to learning how to navigate relationships with others (Looman et al., 2023). Together, these factors create a structured and safe home environment for adolescents that is the foundation for emotional and cognitive development. This promotes growth in interpersonal skills, social competencies, and academic achievements. On the other hand, many previous researchers concluded that high levels of childhood trauma are harmful to development, both in the short-term and long-term (Davis et al., 2017). Adverse childhood experiences such as abuse and household dysfunction often leave effects that last well into adulthood, including psychological stress, poor mental health, and lower levels of academic achievement (Davis et al., 2017; Barnhart et al., 2022). Although our study mainly focuses on the short-term effects of the home environment on youth development, it is important to also consider the more permanent effects so that we can address any potential issues and intervene.

There are three dependent variables in our study: peer-to-peer interpersonal skills, social competencies, and academic achievement. For peer-to-peer interpersonal relationships, we are

interested in the quality of relationships between seventh-grade students and the skills that they use to facilitate these relationships. For social competencies, we are interested in the adaptive behaviors that children use to navigate social situations, as influenced by the family context. Finally, we are interested in using test scores to determine how parental involvement affects engagement and performance in a school setting.

The independent variables in our study include parental mental health, communication styles, discipline, levels of support, levels of conflict, and adverse childhood experiences (Barnhart et al., 2022; Gebru et al., 2023; Yeung and Xia, 2023). We are interested in these variables because they can have a significant impact on our three dependent variables. Much of the literature we found supported the claim that parental mental health has a direct relationship with child psychopathology because parents with poor mental health are less likely to be involved in their children's lives and provide a stable environment (Zhang et al., 2020). It is important to consider this when analyzing a child's well-being in relation to their family situation. It is also important to examine the impact that parenting styles may have on our results. There are four main categories of parenting styles: authoritative, authoritarian, permissive, and uninvolved (McWhirter et al., 2023). Each category involves a different approach to parenting with varying styles of communication, discipline, support, and conflict management. All of these factors play a role in youth development and therefore may have an impact on our dependent variables. For example, communication patterns can contribute to the emotional regulation of adolescents. It is also important to account for adverse childhood experiences and trauma, which can have a large impact on well-being and be detrimental to development. Finally, it is crucial that we control for socioeconomic status, a confounding variable in our study. Socioeconomic status can dictate what resources a family has access to and this can determine what educational

opportunities a child has. If all of these factors are not considered, the validity of the results could be impacted.

The majority of the literature we came across during our research process drew baselines from psychologist Urie Bronfenbrenner's socio-ecological model, which was proposed in the 1970s as a framework to explore the impact that larger environmental systems have on an individual's development, including the microsystem, mesosystem, exosystem, macrosystem, and chronosystem (Bronfenbrenner, 1979). The aspect of this model that we are focused on in our study is the microsystem, which includes both the home and educational environments, because this is what directly interacts with the individual and is pivotal in shaping their development. (Guy-Evans, 2024). The socio-ecological model allows us to consider the many factors that work together to influence youth development and well-being by highlighting the complexity of the connection between individual, familial, and environmental factors. By taking these factors into account, we can then focus on promoting youth well-being and we can recognize the importance of supporting healthy development for all adolescents (Michaels et al., 2022).

There are specific gaps in our understanding of the relationship between our independent variables (parental mental health, communication styles, discipline, levels of support, levels of conflict, and adverse childhood experiences) and dependent variables (peer-to-peer interpersonal skills, social competencies, and academic achievements). One such gap is the lack of current studies on the importance of the family environment in adolescent development with a focus on middle school students and seventh-graders in particular. Adolescence is marked by a unique set of developmental changes, particularly in the brain, where significant remodeling takes place; this period is crucial for developing sophisticated cognitive functions, so it is important to focus

on only one grade level to reduce variability and pinpoint the effects of the family environment during that specific phase of development (Blakemore, 2008). Additionally, the impact of an adolescent's home environment on their current and future development can vary in different contexts and settings. While the findings from previous studies are inherently valuable, we found that they were often not representative of the larger population. For instance, while a cross-sectional study conducted in public schools throughout western China provides relevant information for that specific population, these types of place-specific findings are not able to be generalized to different cultural and geographic contexts (Li et al., 2023). Furthermore, the cross-sectional nature of the data limits the ability to interpret causality and thus may affect the general applicability of the findings. For this reason, our research aims to build off of existing research with a narrower focus -- seventh-grade students in Massachusetts -- while controlling for variables that can influence results such as socioeconomic status. As such, we believe that our study will add to the existing data by ensuring a representative sample, including sample diversity in terms of race, ethnicity, and socioeconomic status, to make the findings more generalizable and applicable. Thus, we relied on stratified sampling methods to retain a diverse sample for our study.

## Team Positionality

### Team Positionality

It is important to recognize the various aspects of our identities that can shape and define the research process to ensure transparency and acknowledge potential sources of bias. While we each grew up in very different home environments, we balanced our perspectives to create a more dynamic approach to our research. Maintaining an open dialogue, we challenged each other's viewpoints to ensure that our analyses were not overly influenced by our individual experiences or cultural backgrounds. By adopting a mixed-methods approach and using a range of perspectives, we were able to conduct a comprehensive analysis and reduce the effects of any individual biases. Diversity of perspectives can allow for a broader range of ideas, and through mutual support, we used our respective positionalities to enrich our study. Furthermore, our position as students in Massachusetts places our team within a cultural and social context that is highly relevant to our study, further enhancing our research perspective.

### Individual

*Olivia:* As a psychology minor, I have studied in depth the psychology of the family, including the individual's experience in the family context and the issues that oftentimes arise. Along with my academic interest, I was drawn to the subject because my family dynamics growing up had a significant positive impact on my development. This was in part due to my position as a white cisgender female raised in the upper-middle class. As such, it is important to acknowledge that I have limited insight into what many of the participants experienced throughout their childhood. To address this bias and enhance my understanding of all types of



home environments, we will make sure to find a diverse group of participants and engage their voices throughout the research process.

*Quan:* As a 20-year-old Asian male studying to get into the field of research and Adolescent Mental Health Counseling at Boston University, personal and academic experiences held a high value for their viewpoint, approach, and the need of the research project. Having struggled with discontinuing my middle school education myself, my family provided an unsteady environment and was not very supportive. I have an excellent understanding, at a very personal level, of how familial environments affect adolescent development. I believe this background really gives fuel to my research interest because it will delve into how the different family dynamics impact the outcomes of the adolescent.

As an international student, I have learned to navigate across different cultural contexts that set up my identity and approach to research. Thus, my positionality as an Asian male in an American educational system contributes another level of complexity and insight into the cross-cultural dimension of family and education research. This means that in order to conduct a balanced and comprehensive study, it is important to recognize any cultural biases and limitations in conducting research.

## Methods Section

### Sample and Participants

Our study consists of 200 seventh-grade students from four different middle schools in Massachusetts, along with their parents. We will use stratified sampling methods to divide our population, selecting 50 students from each of the four schools to participate. Each group will have a quota so that all strata have equal weight and are representative of the population. We will ensure that the number of students from each school is representative of the school that they attend in terms of gender and race, such that if 60% of the students in school A are female, the corresponding proportion of female students in our sample from school A is also 60%.

In addition to race and gender, socioeconomic status (SES) is a crucial factor that has the potential to influence results and thus has to be addressed. We will split socioeconomic status into the following quintiles to ensure that all groups are represented in the study:

- 1) **Low SES:** Income falls below the federal poverty line. Parents may not have a formal education.
- 2) **Lower middle SES:** Income is above the poverty line but below the median income in the specific region. Parents may have graduated high school or have some college education.
- 3) **Middle SES:** Income is near the average. Parents may have a college degree.
- 4) **Higher middle SES:** Income is above the average. Parents often have a college degree or some level of higher education.
- 5) **Higher SES:** Income is significantly higher than the average. Parents may have a graduate degree and may have high-level occupations.

In order to select the strata, we will start by contacting the administrations of middle schools throughout Massachusetts to get permission to conduct the study. Once we get permission from the schools, we will then need consent from both students and their parents or legal guardians to ensure that our study complies with all ethical considerations.

### **Procedures/Data Collection Methods**

We will obtain primary data through surveys and semi-structured interviews with the students and their parents or legal guardians. There will be two sets of surveys -- one for the students and one for the parents. Within each set the questions will be identical for every participant, but the two sets will slightly differ from each other to focus on the participant's point of view (either child or parent). These surveys were designed to quickly but effectively collect quantitative data on a range of different topics relating to the family context, including academic support, parental involvement, methods of discipline, levels of conflict, and exposure to trauma. The surveys will be distributed electronically with clear instructions so all participants can complete them with ease. However, to prepare for any potential issues, each participant will have the ability to reach out to the research team with any clarifying questions or concerns.

While the surveys are an effective way to collect quantitative data, we will also use semi-structured interviews to explore in depth the students' personal experiences and the impact this has on their academic, emotional, and social skills. Similar to the surveys, there will be two sets of interview questions -- one for parents and one for students. Each parent-child pair will not be present during each other's interviews to make sure that all responses are transparent. The interviews will be administered on the same day within a predetermined period to lessen the potential impact of time variables on the results. However, since each parent-child pair will not

be present for each other's interviews, it does not matter if one comes before the other. All interview questions will be non-leading and all answers will be kept confidential. Interviews will be conducted face-to-face and will be monitored by a research team, who will record each conversation (with the consent of all parties) and transcribe the data afterward for analysis. Interviews will be held in private rooms at the schools because this is a neutral space that ensures privacy and minimal distractions. If interviews were to be held in the homes of each participant, they might not give accurate answers for fear of nearby family members hearing their responses.

Finally, we will use Massachusetts Comprehensive Assessment System (MCAS) scores to assess overall academic performance. The subjects we will focus on are English, reading comprehension, and mathematics. It is important to include test scores on a variety of subjects to ensure that students have the opportunity to showcase their knowledge in different areas.

### **Measures and Protocols**

The surveys will include 20 closed-ended questions and will be scored using a five-point Likert Scale. If needed, a seven-point scale can be used for additional detail. The responses can then be gathered, either summed or averaged, to form a composite score that is subject to quantitative analysis. The following are sample questions that can be included in our surveys:

1. How involved are your parents in your education?

(1 = Not involved, 5 = Very involved)

2. Rate how responsive your parents are to your emotional needs.

(1 = Not responsive, 5 = Very responsive)

3. How consistent are your parents with discipline at home?

(1 = Not consistent, 5 = Very consistent)

All interview questions will be open-ended to allow for the collection of more detailed qualitative data. While there will be a set framework for each interview, the questions can be altered and other statements can be developed depending on the context and relevance of the issues that are presented. Each interview is expected to last between 20 and 40 minutes. The following are examples of questions that can be asked during the interviews:

1. What is one moment that has helped shape your relationship with your parents?
2. How do your parents offer support when you experience hardships?
3. Have your parents shown signs of being overwhelmed or depressed about day-to-day activities? If applicable, how has this impacted you?

To analyze the MCAS results, there are two primary ways that we will measure the scores. Firstly, all multiple choice sections of this exam will be scored objectively based on how many questions the student got correct. Secondly, the short answer sections will be scored based on a predetermined rubric that takes into account components such as critical thinking and correctness (Massachusetts Department of Elementary and Secondary Education, n.d.).

### **Data Analysis**

The data analysis in this study is organized to dissect and explore how environmental factors of the family, such as communication styles and adverse experiences, serve to impact the emotional, social, and academic outcomes of adolescents. The exploration of these factors is crucial in creating more effective educational policies and family intervention strategies since they are fundamental to healthy adolescent development. The research design is mixed methods, including the use of quantitative methods (surveys and test scores) and qualitative methods (interviews) to measure the complex effect of the family atmosphere on youth development.

### Quantitative Analysis:

To begin, we will carry out a statistical analysis of the data, including measures of central tendency, standard deviations, and range. This provides a foundation for our team to gauge the distribution of the data. This step also includes the detection of potential errors or outliers, which is important for ensuring the integrity and reliability of the data before proceeding to further advanced analyses. Subsequent data will be analyzed using the multifactorial Analysis of Variance (ANOVA), applied in software statistical packages like SPSS, R, or Stata (New York University Libraries, n.d.). This analysis will look into the mean differences between multiple groups on a dependent variable. In effect, this allows for the comparison of groups classified by gender, race, or socioeconomic status, among others. ANOVA will show which familial environmental factors significantly affect adolescent development through both main effects and interaction effects.

Key statistical metrics include the F-statistic, P-value, and effect size (Eta-squared,  $\eta^2$ ). The F-statistic is a ratio of variance occurring between groups to variance occurring within groups (The Pennsylvania State University, 2023). The larger the value of F, the stronger the evidence is against the null hypothesis. In turn, this is suggestive of large variability in means between groups, caused by the independent variable. The P-value corresponds to the probability of observing the current statistics when the null hypothesis is true (The Pennsylvania State University, 2023). A P-value that is less than 0.05 shows significance and thus leads to the rejection of the null hypothesis. The eta-squared ( $\eta^2$ ) effect size illustrates the proportion of variance that independent variables hold in partial control (National University, n.d.). For instance, an Eta-squared of 0.15 would mean that family structure accounts for 15% of the variance in academic achievement, indicating a moderate effect size.

### Qualitative Analysis:

Qualitative data from the interviews will be subject to several methodologies to allow for an in-depth analysis of the data. In the first stage, our approach will involve coding and content analysis to extract data on the frequency and specifics of language used by participants. We will review the transcripts and label segments of the text based on themes such as parental support or student stress. This provides the basis for a narrative analysis that will dig deeper into personal stories categorized by language usage and emotional expressions to bring out underlying value-driven narratives. Furthermore, we will analyze communication patterns and how both the parent and child talk about conflict or support within the home. This will help gain an understanding of the effect of communication style on adolescent behaviors and will be useful in outlining how consistent themes of parental support relate to social adaptation and academic achievements. The use of qualitative methods such as the ones listed above allows for a greater understanding of how familial environments mold the social and emotional development of adolescents, and can thus help shape future policy.

## Discussion

When this study is conducted, we expect to find a significant connection between an adolescent's home environment and their development, namely their relationships with peers, social skills, and academic performance. We hypothesize that negative parent-child communication will be predictive of impaired interpersonal relationships and social skills because parental interaction is often internalized by the child as a model for their own social behavior (Schneider et al., 2022). Children raised in this type of environment have a higher likelihood of developing relationship problems with their peers and may struggle with conflict management, displaying aggressive tendencies or other behavioral issues in social situations (Schneider et al., 2022). Additionally, we expect that excessive conflict within the home will have a negative influence on a child's social skills because a troubled home environment may hamper one's emotional security, as proposed by the Family Systems Theory (Minuchin, 1974). We hypothesize that when students indicate high occurrences of conflict between family members, they are likely to score low in measures of social competence. This relationship is likely to manifest through difficulties in maintaining friendships with peers and low levels of empathy. To address these issues, we hypothesize that emotional support within the home will moderate the connection between the family environment and social competence. Emotional support can minimize the negative effects produced by hostile or otherwise unhealthy communication (Collins et al., 2000). Finally, we expect a positive relationship between familial support and academic achievement because individuals with more involved parents have more guidance and motivation to succeed.

Our study has many implications for the way that adolescent development and well-being should be approached. Evaluating the complex connection between a child's family atmosphere



and their social and academic performance will allow us to guide future strategies for improving adolescent well-being and gain a more detailed understanding of the role of the family environment in adolescent development. Researching the effects of increasing the quality of parent-child interactions, for instance, can show parents the importance of being involved in their children's lives and creating a strong support system. This can then inspire parents to adopt practices that help promote healthy development for their children.

One limitation of our study is that it is cross-sectional by design. This means that while we are able to analyze the current impact of the family context on adolescent development, we are unable to determine the effects that last into adulthood solely based on this data. This presents the opportunity for future research to determine a cause-and-effect relationship and build off of our study to analyze how these impacts might change over time. Future research should focus on taking what we know about the importance of the family atmosphere, based on studies such as the one we conducted, and using this information to promote healthy home environments that are conducive to positive youth development.

While we expect a positive correlation between the context in which one is raised and their subsequent development, the home environment doesn't necessarily determine a person's future outcomes. This means that although much of the current research underscores the influence that familiar factors such as parental communication styles and childhood trauma have on adolescent development, there are notable exceptions that challenge this idea. One such exception is the view that the home environment alone does not dictate better academic performance; rather, the relationship between these variables is moderated by factors outside of the home, including the quality of peer interactions (Zhao & Zhao, 2022). Additionally, despite growing up in an adverse family setting, it is possible to overcome these circumstances. A

prominent example is Elon Musk's transition from a difficult childhood to incredible success. He had troubled relations with his verbally abusive father and experienced an extremely demanding home environment growing up (Brooks, 2023). Such factors are thought to have a negative influence on a person's development; yet, this was not the case for Musk, who was able to overcome this and experience exceptional success in the technology and space race industries. Musk's success against his less favorable family environment suggests that individual resilience, outside environmental factors such as schooling, and peer influences may be able to minimize the adverse effects of a difficult family setting (Butler et al., 2022). Accordingly, future researchers need to acknowledge that despite the significant influence that one's familial situation has on their development, this is not the only deciding factor of a child's well-being and success.

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## Appendix

### Appendix A: Survey for Students

1. How involved are your parents in your education?
  - a. (1 = Not involved, 5 = Very involved)
2. How supported do you feel when you face academic challenges?
  - (1 = Not supported, 5 = Very supported)
3. How well do your parents understand your strengths and weaknesses at school?
  - (1 = Do not understand, 5 = Understand very well)
4. How often do you feel pressured by your parents to perform well at school?
  - (1 = Never, 5 = Always)
5. How involved are your parents in planning your future career?
  - (1 = Not involved, 5 = Very involved)
6. How much do your parents know about your social life?
  - (1 = Nothing, 5 = A lot)
7. How often do you tell your parents how you are feeling?
  - (1 = Never, 5 = Always)
8. How often do your parents discuss their expectations of you?
  - (1 = Never, 5 = Always)
9. How often do your parents give you praise?
  - (1 = Never, 5 = Always)
10. Rate your overall relationship with your parents.
  - (1 = Very poor, 5 = Excellent)

11. Rate your comfort level in telling your parents about personal issues.

(1 = Not comfortable, 5 = Very comfortable)

12. Rate how responsive your parents are to your emotional needs.

(1 = Not responsive, 5 = Very responsive)

13. Rate the level of conflict in your home.

(1 = No conflict, 5 = Frequent Conflict)

14. How consistent are your parents with discipline at home?

(1 = Not consistent, 5 = Very consistent)

15. How fair are your parents when making rules?

(1 = Not fair, 5 = Very fair)

16. I have experienced domestic violence.

(1 = Never, 5 = Often)

17. I have felt neglected or abandoned by those in my home environment.

(1 = Never, 5 = Often)

18. I have witnessed or experienced a traumatic event.

(1 = Never, 5 = Often)

19. (If applicable) How much have these adverse experiences affected your academic performance?

(1 = Not at all, 5 = A lot)

20. (If applicable) How much have these adverse experiences affected you emotionally?

(1 = Not at all, 5 = A lot)



**Appendix B: Survey for Parents**

1. How involved are you in your child's education?

(1 = Not involved, 5 = Very involved)

2. How supported do you feel your child is when they face academic challenges?

(1 = Not supported, 5 = Very supported)

3. How well do you understand your child's strengths and weaknesses at school?

(1 = Do not understand, 5 = Understand very well)

4. How often do you put pressure on your child to perform well at school?

(1 = Never, 5 = Always)

5. How involved are you in planning your child's future career?

(1 = Not involved, 5 = Very involved)

6. How much do you know about your child's social life?

(1 = Nothing, 5 = A lot)

7. How often does your child tell you about how they are feeling?

(1 = Never, 5 = Always)

8. How often do you discuss your expectations of your child?

(1 = Never, 5 = Always)

9. How often do you give your child praise?

(1 = Never, 5 = Always)

10. Rate your overall relationship with your child.

(1 = Very poor, 5 = Excellent)

11. Rate your comfort level in listening to your kid discuss their personal issues.

(1 = Not comfortable, 5 = Very comfortable)

12. Rate how responsive you are to your child's emotional needs.

(1 = Not responsive, 5 = Very responsive)

13. Rate the level of conflict in your home.

(1 = No conflict, 5 = Frequent Conflict)

14. How consistent are your parents with discipline at home?

(1 = Not consistent, 5 = Very consistent)

15. How fair are you when making rules?

(1 = Not fair, 5 = Very fair)

16. Your child has experienced domestic violence.

(1 = Never, 5 = Often)

17. Your child has felt neglected or abandoned by those in your home environment.

(1 = Never, 5 = Often)

18. Your child has witnessed or experienced a traumatic event.

(1 = Never, 5 = Often)

19. (If applicable) How much have these adverse experiences affected your child's academic performance?

(1 = Not at all, 5 = A lot)

20. (If applicable) How much have these adverse experiences affected your child emotionally?

(1 = Not at all, 5 = A lot)

**Appendix C: Interview for Students**

1. What does a typical day look like in your household?
2. How do you think that your home environment influences the way you interact with peers at school?
3. What is one moment that has helped shape your relationship with your parents?
4. How do you talk about your successes and failures with your parents?
5. How do you and your parents handle disagreements at home?
6. Think about a stressful moment in your life. What type of support did you receive from family members?
7. What are your thoughts on the rules and discipline at home?
8. How do you feel about the way that your parents approach your education?
  - a. What do you appreciate the most about their involvement?
  - b. In what ways, if any, do you wish that your parents approached your education differently?
9. In what ways are your parents involved in making decisions about your future?
10. Have your parents shown signs of being overwhelmed or depressed about day-to-day activities?
  - a. If applicable, how has this impacted you?

**Appendix D: Interview for Parents**

1. What does a typical day look like in your household?
2. How do you feel your home environment has influenced your child's social skills?
3. What is one moment that has helped shape your relationship with your child?
4. What strategies do you have for praising your child or disciplining them?
5. How do you and your child handle disagreements at home?
6. Think about a stressful moment in your child's life. What type of support did you offer?
7. How do you establish rules and discipline at home?
8. What role do you believe you play in your child's education?
9. In what ways are you involved in making decisions about your child's future?
10. Have you felt overwhelmed or depressed about day-to-day activities?
  - a. If applicable, how has this impacted your child?