

Effects of Parental Language Style on Children's Resilience at Different Stage of Child Development

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Abstract. Resilience can affect and influence individuals' executive functioning, social behavior, and academic learning ability. Many researchers have examined on the effect of parenting style on children's resilience. However, less is known about how specific parental language influences children's resilience. To close the important knowledge gap, this study aims to test whether the positiveness of long-term parental language input is significantly related to high level of behavioral persistence among children beyond infancy. Data will be collected from children at three different age groups (18-month-old, 4-year-old, and 8-year-old) to critically evaluate how parents' positive (activity-engagement) language style and negative (activity-avoidant) language style will influence children's level of persistence and resilience at different developmental stages. It is hypothesized that, across age groups, children who receive more positive activity-engagement language input from parent's exhibit will show higher level of resilience.

Keywords: Parenting Style; Parental Language; Children's Resilience Level.

1. Introduction

In recent years, the construct of resilience is drawing increasing attention from researchers in the field of psychology and education as it is a reliable protective factor against psychological disorders [1] and a significant contributing factor of happiness [2] and academic success [3]. Commonly, resilience is defined as the positive adaption of risk or adversity [4]. Resilience arises from the combination of multiple protective factors that allow an individual to overcome significant threats, which is built upon interacting with the social environment [4, 5, 6]. Having positive responses during hardship can affect an individual's physical health, intelligence, self-esteem, and competence [7]. Over time, resilience varies with the changes in one's living environment and individual development [8].

When individuals are faced with challenges or setbacks, they would inevitably receive feedback from their social environment, whether they remain persistent to pursue their original goals/tasks or choose to give up and switch to new targets. Bronfenbrenner's ecological theory (1979) claimed that the interactions between individuals and environment could shape personal behaviors and development [9]. Masten & Cicchetti (2016) summarized that some interactions of individuals, families, and other contexts have significant directional influence [10]. Thus, individual's resilience highly depends on the interactions with other connected systems, especially the one that firmly supports an individual's resilience development—namely, parents or extended family [11, 12]. Parenting style includes many factors such as parents' behavior, responsiveness, mental health, language, and personalities [13]. Prior research findings have suggested that family's capacity to adapt to challenge has a significant impact on children's resilience development through interactions, such as communication, actions, and guidance [10, 11, 14, 15, 16]. However, how parental language style affects children's resilience at early age has not been carefully studied. Among all family related factors, the current study focusses on how different types of parental language input affect children's resilience level at early stage of their development. Findings of the current study serves as critical empirical evidence for developing family focused intervention programs that is aimed at boosting the resilience level of children to support their psychological wellbeing and positive development.

2. Literature Review

2.1 Resilience in Children

Resilience in childhood development is defined as the children's capacity to successfully adapt to significant challenges that threaten their function, well-being, or development [4]. Many studies have revealed that resilience is strongly associated with positive indicators of mental health in children and adolescents [17, 18, 19]. Adverse childhood experiences (ACE) and natural disasters are the most common risk factors of mental health issues in children and adolescents. Social and genetic factors are both essential predictors of mental health status and resilience development [10, 17]. For example, problematic emotional regulation and inadequate family problem-solving skills were found to be significantly related to depression among children [20].

Children's early life and learning experience could affect their development of resilience. In the past few years, researchers have found multiple protective factors and chronic influential experiences that can support the development of resilience of individuals. Parent-child relationships during early childhood might predict an individual's future coping skills. For example, secure attachment and nurturing environment during infancy significantly predict emotional regulation circuitry in adolescents [21]. Beyond adolescence, childhood stress response system and emotional regulation can also affect psychological disorders at a later age [22]. The article from Feder et al. (2019) suggested that early adversity has potential consequences on adult psychological disorders [23]. Childhood and adolescence are vital for developing coping and adaptation skills due to increased sensitivity to their surroundings and brain plasticity [24]. Children respond to the world based on their parents' support and care. Therefore, parents' support and care, including language use, could affect children's early development of resilience.

2.2 Parental Support and Children's Development

Many existing studies have found significant long-term effect of parenting styles on children's psychological flexibility [16, 24]. Parental emotional and cognitive supports could make differences in children's performance in various domains, especially on children's executive functioning and problem-solving abilities. It was found that children would exhibit high-level cognitive functioning when they receive sufficient maternal emotional support other than cognitive support during problem-solving tasks [24, 25]. For example, when mothers presented more emotionally supportive language, such as "I believe in you" or "I trust you can do it," children were more likely to finish the tasks and make the right decisions during the tasks. When mothers only provided language inputs of cognitive supports, such as "I think you should do this instead of that" or "I think that one is the right choice," children displayed more error and failed the tasks [24].

High-level responsive parenting plays a critical role in children's development in most domains during early childhood. In recent research, children's social, emotional, and cognitive development showed significant improvement when they received frequent maternal responsive teaching [26, 27]. Infants' social, emotional, and cognitive development also showed significant improvement when they received many maternal responsive teachings. The relationship between responsive teaching and children's cognitive development is thought to be reciprocal [28]. Infants with high level of behavioral persistence usually receive more responsive mother reactions; and more responsive mothers' teaching at six months predicted infants' persistence level at 14 months [26]. However, Banerjee & Tamis-LeMonda (2007) also found that mothers' teaching style was unstable between 6 and 14 months, the inconsistency can affect children's cognitive development; teaching manners, teaching language, and teaching time can all influence infants' performance at 14 months and later ages [26]. Existing literature has not provided a comprehensive understanding on how different types of parental language impact children's development, positively or negatively at different stages of their development.

2.3 Impact of Parental Language Style on Children's Development

Parenting style is embodied in various pathways, such as parents' mindsets, behavior, and language. Parental verbal language is one of the most efficient ways to measure parenting style and deliver responsive teaching. Generally, parental language style includes positive language and negative language, such as praise and criticize. Throughout children development, parental verbal guidance also exerts its influence on children's resilience performance, such as persistence behavior. Early supportive guidance strongly influences children's resilience and persistence. More specifically, the parental guidance is delivered through verbal information in different styles [17].

Many studies have shown that verbal praise would support children's resilience and persistence performance, and criticize would diminish children's interests of continuing. Such praise should encourage more positive behaviors, including better academic performance, later in life [29, 30, 31, 32]. In both experimental and real-world settings, researchers found that children display higher levels of motivation and more persistence on work tasks when receiving praise for their efforts [25, 29, 32]. Kamins & Dweck (1999) found that children would show more helpless responses when they received personal criticism or praise rather than process criticism or praise [33]. Similarly, Gunderson et al. (2013) separated parental language into three types: person praise, process praise, and other praise. The study results claimed that children who received more process praise (e.g., "you tried really hard to finish this work!") than person praise (e.g., "you are so smart!") or other praise would believe intelligence was malleable, prefer challenges, and attribute success and failure to effort when they got older [30]. Both studies demonstrated the importance of positive parental language and its significant influence on young children's cognitive development, which can also affect their beliefs in several domains at a later age.

More specifically, parents' positive verbal reactions could increase children's activity-engagement behavior in their daily life. Children are less likely to report a high level of pain when hearing activity-engagement instruction, such as "keep having fun when in pain [34]." In contrast, parental protective responses to children's pain increased children's activity-avoidance, and they are more likely to quit or give up during activities. Additionally, Bennett et al. (2015) researched the connection between verbal information with chronic pain disorder. They announced that verbal threat information could install fear learning [35]. People who received threat-associated words would perform higher pain ratings, fear of pain ratings, and other unpleasant feelings than people who received safe-associated words.

3. Current Study

The proposed study is aimed at examining how parents' positive language and negative language affect children's resilience, which is measured by their behavioral persistence in playing and task completion scenarios. This study leverages the observational measures used in Lucca et al.'s (2019) work to collect data from children in different age groups, which can also be used to infer the corresponding parental language styles [36]. It is hypothesized that: parent use of language will affect children's early development of psychological resilience.

4. Methods

4.1 Participants

Participants will be recruited from several New York Public Schools, who will provide demographic diversity on race, socioeconomic backgrounds, and parental marital status. The chosen participants will all come from middle-class, two-parent households, which avoid the confounding factors that may bias children's cognitive development, such as lack of financial support and paternal/maternal care. Families with children at three different age groups: 18-month-old, 4-year-old, and 8-year-old will be recruited. Each group will have even numbers of boys and girls. To calculate

the minimum number of participants (children) necessary to detect a statistically significant correlation between parental language style and children's resilience level, power analysis was conducted using GPower 3.1. Assuming a two-tailed correlation test with an alpha level of 0.05 and a power of 80%, power analysis results suggested that a total sample size of 252 children (with 84 children in each of the three-agegroup) is necessary to detect an effect size of $r = .30$.

4.2 Procedure

During the data collection session, the recruited 18-month-old infant group, 4-year-old toddler group, 8-year-old children group and their parents will participate in similar problem-solving tasks (gear stacking task) used in Lucca et al.'s (2019) study[36]. Besides, the 4-year-old toddler group and 8-year-old children group will also complete an age-challenging puzzle task (50 pieces for four years old children; 120 pieces for eight years old children). Parents will be on the side with their children during the task for all age groups. Parents can talk or guide children during their tasks but cannot complete the tasks for their children. In this process, researchers will record parents' language input, measure children's completion rate of tasks, as well as characteristics of their behaviors.

4.3 Measures

Tasks

Problem-solving task (for all age groups). Similar to Lucca et al.'s (2019) study, children and their caregivers in the current study will receive a gear stacking toy[36]. The toy has a single rod with a base and six stacking gears. To make the task more challenging for infants, colored cardboard barriers will be inserted inside the center of 3 gears. Instructor will modify the gear pieces to make it more challenging. Parents will interact with their children while children are solving the task. When children are all done playing, session ends. If the session goes past 10 mins, the instructor will come back.

Puzzle task for 4-year-old group: Children in this age group will receive an animal puzzle. The puzzle contains 50 pieces, including various kinds of animals. For age 4-5 children, they can handle jigsaw puzzles with up to 50 pieces. During the task, a completed picture of the animal puzzle will be provided next to the puzzle pieces as guidance. Parents will interact with their children while children are solving the task. When children are all done playing, session ends. If the session goes past 20 mins, the instructor will come back, and session ends.

Puzzle task for 8-year-old group: Children in this age group will play with a 120-piece world map jigsaw puzzle with their parents. For children ages 7 to 8, they are generally able to solve the puzzle up to 120 pieces. During the task, a completed picture of the animal puzzle will be provided next to the puzzle pieces as guidance. Parents will interact with their children while children are solving the task. When children are all done playing, session ends. If the session goes past 35 mins, the instructor will come back, and session ends.

4.4 Resilience Measures

Resilience measured as persistence in problem-solving task: Using the same methods from Lucca et al. (2019), this study will measure children's persistence by collecting the number of gears that infants stacked on top of the base during the task[36]. Since time durations slightly vary for different tests, the total number of completed gears is divided by the total time of the session to see how many gears were stacked per minute. The following data will be collected and calculated: 1) the overall amount of time infants spent trying to stack gears onto the base; 2) the total number of repeated attempts (both successful and unsuccessful; 3) the number of times infants continued trying in the face of giving up (failure) [36]. In this measure, infant's persistence and repeated attempts will represent his or her resilience.

4.5 Resilience Measured as Persistence in Puzzle Tasks:

Similar to the measure of infants' resilience, 4-year-old and 8-year-old children's persistence in puzzle task will be measured as a behavioral indicator of their resilience. The number of completed puzzle pieces will be divided by the total time of the session to see how many puzzle pieces were completed per minute. The following data will be collected and calculated: 1) the overall amount of time children spent trying to fix the puzzle; 2) the total number of repeated attempts (both successful and unsuccessful); 3) the number of times children continued trying in the face of giving up (failure) [36]. In this test, young children's persistence and repeated attempts will represent his or her resilience.

4.6 Parental Language Style

Parental speech across problem-solving tasks for all groups will be first transcribed into utterances. Each utterance will then be classified as praise, positive language, and/or negative language. Following the practice of Lucca et al.'s (2019) study, these three different types of language will be coded separately and will not be mutually exclusive (if an utterance contains both praise and persistence-focused language) [36]. Praise, including process praise, person praise, and generic praise, will be sorted into the same code since this study will be focused on positive and negative parental language.

Positive language: An utterance will be classified as the positive language (activity-engagement language) if it encourages the act of trying or repeatedly attempting to complete a goal-directed action. These include phrases that explicitly refer to the act of continuing to try (e.g., "you can do it!") and implicit messages on persistence (e.g., "it's ok, use another way.").

Negative language: An utterance will be classified as the negative language (activity-avoidant language) if it impedes the act of trying or repeatedly attempting to complete a goal-directed action. These include phrases that explicitly refer to the act of stop trying (e.g., "stop here and take a break.") and implicit messages on persistence (e.g., "we can do it another time if you don't know what to do.").

5. Analysis

Test results from all three age groups will be labeled by participants' task completion status: complete ($\geq 50\%$) or incomplete ($< 50\%$). Each child's task completion rate (completed pieces/total pieces) will be calculated. Outliers that are 2.5 SD above the mean will be excluded from all analyses [36]. To assess the overall relation between positive language/negative language and persistence, total number of positive and negative utterances a parent produced in a task will be divided by the total number of utterances that parent produced across tasks. Parent's ratio of positive language utterance in each task will be correlated with children's corresponding task completion rate, and their total number of attempts to try. Parent's ratio of negative language utterance will also be correlated with children's completion rate, and their total number of attempts to try.

6. Expected Results

Based on the previous results found by Martin et al. (2013) and Lucca et al. (2019), the ratio of parents' positive language utterance is expected to positively correlate with children's task completion rate and total number of attempts in each task [25, 36]. Additionally, the ratio of parents' negative language utterance will negatively correlate with children's task completion rate and total number of attempts in each task. Based on prior study results, the effect sizes of these correlations will be medium (around $r = .03$).

7. Discussion

Parental verbal information played an essential role in children's cognitive flexibility in the presence of challenges and failure, and it can directionally guide children's behaviors. More

specifically, it has been argued that positive parental language input predicts children's academic performance, cognitive flexibility, and problem-solving skills [26, 30, 31]. From infant age, the parental persistent focused language will predict a higher rate of task-completion [36]. Additionally, positive parental language information also affects an individual's decisions across domains. From the previous studies done by Beeckman et al. (2019) and Bennett et al. (2015), we can see the negative relationships between activity-avoidant language and adolescents activity engagements [34, 35].

Together, these findings reveal how different types of parental language inputs may impact children's mindsets and behaviors in different contexts: activity-encouragement language may help children keep going and overcome challenges, whereas activity-avoidant language may impede children's motivation and persistence. If the result of the current study is as hypothesized, it then further corroborates previous research findings in this line of research. Together, empirical evidence would suggest that parents and teachers should pay more attention to supportive language usage (types and frequency) and limit the use of negative language to better serve children's developments. Although children's resilience can be influenced by parents' behaviors and mindsets [37, 38], this study expands existing research literature by demonstrating that children's resilience level can be shaped by what they hear both negatively and positively.

8. Limitations and Future Directions

Critically, findings of the current study will not be able to build causal relationships between parental language style and children's resilience. It is not worthy that the current study used the minimum sample size of suggested by power analysis. Thus, it is possible that significant correlations actually exist in the population but are not detected in the current sample due to insufficient sample size. Additionally, this pilot study focuses on the population of middle-class families from New York Public Schools. Similar backgrounds of participants may also bring the issue of range restriction. Another limitation of this study is that children's individual differences in their baseline resilience level (persistence in tasks without parental language guidance) are not controlled. Additionally, the puzzle task used for 4-year-old and 8-year-old groups are not tested for reliability and validity like the problem-solving task used in Lucca et al.'s study (2019) [36].

In future studies, instead of measuring children at different age groups only once, tracking their trajectory in resilience development and recording possible changes in parental language styles over time will provide more insights of the impact of parental language style on children's resilience. Participants from various cultural, racial, and socioeconomic backgrounds will need to be included to examine how factors such as cultural differences can interact with parental language style to influence individuals' resilience level.

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