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The Interplay of Birth Order and Adverse Childhood Experiences in Shaping Resilience among young adults

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ABSTRACT

This study investigates the relationship between birth order, adverse childhood experiences (ACEs), and resilience among young adults. Employing a correlational research design, the research aims to ascertain the direction and strength of the relationships between these variables. A sample of individuals aged between 18 to 25 was selected using convenience sampling, ensuring participants could read and comprehend English. Data were collected through questionnaires, which were then coded and analyzed using JASP statistical software. The results indicated a weak negative correlation between adverse childhood experiences, resilience, and birth order.

Keywords: *Adverse childhood experiences, Resilience, Birth order, Young Adults*

1. INTRODUCTION

Childhood is widely recognized as a pivotal stage in development, laying the groundwork for personality, behavior, and emotional well-being. Positive experiences such as love, stability, and encouragement can foster resilience, confidence, and a sense of security. Conversely, not all childhoods are marked by such optimism. Some individuals' lives are profoundly affected by negative experiences during these formative years.

According to Felitti et al. (1998), adverse childhood experiences (ACEs) include a variety of upsetting circumstances, such as spousal abuse, emotional and physical abuse, and neglect. A child's sense of security may be shaken by these events, which may have long-term consequences that last till adulthood (Anda et al., 2006). ACEs can have far-reaching effects on one's physical, mental, and social well-being (Hughes et al., 2017). The impact of these early challenges might be further exacerbated by the socioeconomic circumstances of a child's upbringing (Evans & English, 2002).

The place a child is born in relation to their siblings can also have an impact on how they experience and turn out. Firstborns, for example, could have different demands and expectations than their younger siblings, which could have an impact on their resilience and general development.

The intricate relationship between resilience in young people, ACEs, and birth order is examined in this research. It looks at the ways in which ACEs and birth order interact to affect resilience and how these things affect people's long-term outcomes. The project intends to shed light on how early life experiences and familial positioning affect resilience and general well-being in adulthood by examining these dynamics.

1.1 Adverse childhood experiences

Adverse Childhood Experiences (ACEs), which are thought to be especially detrimental to a kid's normal development, have received more attention in research on child well-being (Javier et al., 2019). Potentially traumatic childhood experiences, or

ACEs, can have a significant impact on an individual's long-term health and well-being. These experiences—which include different kinds of abuse, neglect, and dysfunction in the home—can interfere with a person's psychosocial development and developmental trajectory. Felitti et al. (1998) initially used the term "adverse childhood experiences," which refers to a variety of abuse and dysfunction in the household. ACEs have been connected to a number of negative outcomes, including mental health problems, long-term medical illnesses, and decreased social functioning (Felitti et al., 1998; Hughes et al., 2017).

Multiple causes of ACEs can have a substantial impact on an individual's future well-being. These events frequently include being exposed to violence, experiencing different types of abuse (physical, emotional, or sexual), being neglected, losing a loved one, or having disturbances as a result of parental separation. Furthermore, these obstacles may be made worse by social determinants of health, which include homelessness, frequent relocations, poor financial standing, insecure housing, and restricted access to healthcare. Discrimination experiences can also be detrimental to a child's general health and development. These factors interact in intricate ways to mould a child's life path and impact their general health and wellbeing in the future.

ACEs have a significant impact on one's personality, perspective, and emotional reactions. A person's coping mechanisms and personality might evolve as a result of traumatic experiences like abuse, neglect, or instability. For example, continuous exposure to conflict or violence during one's adult life may lead to elevated levels of anxiety or aggression, which might impact social interactions and viewpoints. In a similar vein, emotional maltreatment or neglect may be a factor in depression, low self-worth, or trouble controlling emotions. Adversity in infancy can therefore have long-lasting effects on behaviour, mental health, and general outlook on life. These effects frequently continue into adulthood and impact interpersonal, professional, and personal difficulties.

Previous research highlights that ACEs significantly affect child development and have enduring consequences for health and behavior. A study involving 398 adults from the Porto metropolitan area used anonymous questionnaires to assess ACEs, health conditions, and risk behaviors. The results showed that those who experienced an Adverse Childhood Experience (ACE) were more likely to be dependent on smoking, self-harm, intimate partner violence, engage in early sexual activity, contract STDs, and experience various health problems such anxiety, depression, diabetes, and hypertension. These findings highlight the significant effects of ACEs on a range of risk behaviours and medical disorders, emphasising the necessity of ongoing study and preventative actions (Novais et al., 2021).

Dimitriu's study explored how well-being, resilience, emotional intelligence, and exposure to challenging situations interact among school-aged children. Analyzing a sample of 845 children aged 8 to 18, the research found that emotional intelligence and resilience positively correlated with well-being, while exposure to difficulties such as parental divorce, domestic violence, and peer violence negatively impacted both well-being and resilience. Significant negative associations were observed between these challenging situations and measures of well-being and resilience. Hierarchical analysis indicated that family violence, peer violence, and parental divorce most strongly affect well-being, whereas family violence, famine, and peer violence have the greatest impact on resilience (Dimitriu et al., 2023).

ACEs are profoundly subjective and arise from a complex interplay of multiple life factors shaping a child's development. These experiences are not isolated incidents but are embedded within the broader context of a child's life. Family background plays a crucial role, as dynamics within the family—such as parental relationships, stability, and communication—significantly influence a child's emotional and psychological state. The quality of family interactions can either mitigate or exacerbate adverse experiences. Additionally, locality impacts childhood experiences; a child's community's safety, economic stability, and social resources can either support or hinder development. Children in high-crime or economically disadvantaged neighborhoods may face extra challenges affecting their well-being. Parenting style also profoundly influences a child's experiences. Approaches ranging from nurturing and supportive to neglectful or authoritarian affect children's self-perception and worldview. Positive, consistent parenting generally promotes resilience, whereas harsh or inconsistent parenting can lead to emotional difficulties. The school environment, including the quality of education, safety, and support from educators, is also critical. A supportive school environment fosters academic and social development, while a negative or hostile environment can contribute to stress and hinder achievement. Relationships with teachers are influential; positive interactions can offer emotional support and motivation, while negative experiences can undermine confidence and engagement. Peer relationships further shape a child's experience. Supportive friendships can enhance self-esteem and a sense of belonging, while bullying or social exclusion can negatively impact mental health and social development. Finally, socioeconomic background profoundly affects a child's opportunities and experiences. Financial stability influences access to quality education, healthcare, and extracurricular activities, while economic hardship can lead to increased stress and limited resources. The interplay of these factors—family, locality, parenting style, school environment, teacher relationships, peer interactions, and socioeconomic status—creates a unique constellation of experiences for each child, underscoring the need for a nuanced understanding and targeted interventions to address and mitigate the impact of

ACES.Adverse childhood experiences (ACEs) have a profound effect on a person's growth and results; these impacts can be impacted by different family dynamics, such as the order of birth. According to research, ACEs' effects on a kid's psychological and social development may be mitigated by where the child falls in the family hierarchy (Sulloway, 1996). Firstborn children may encounter distinct stresses and coping mechanisms in comparison to their later-born siblings, thereby influencing the manifestation and management of adverse childhood experiences (ACEs) (Kramer & Gottman, 1992). Understanding the relationship between birth order and ACEs is critical for establishing targeted therapies that address the individual needs of children based on their family roles (Dunn & Plomin, 1990).

1.2 Birth order & Adverse childhood experiences

The order in which a family's children were born is referred to as their birth order. Psychologist Alfred Adler (1870–1937) was among the first to propose that personality is influenced by one's birth order.

This research used information from 3,744 children in Adachi City, Tokyo, to investigate the impact of birth order on the mental health, self-esteem, resilience, and happiness of 9–10 year olds. According to the study, last-born children showed the greatest levels of resilience, prosocial behaviours, and lowest mental health difficulties, while only children experienced the greatest challenges. The lowest levels of satisfaction were reported by middle-born children, but there was no significant difference in self-esteem scores depending on birth order. These tendencies remained unchanged after accounting for various circumstances.The findings of the study point to the need for more research on the relationships between birth order and both positive and negative elements of children's mental health.

1.3 Resilience

Positive adaptation, or the capacity to preserve or restore mental health in the face of hardship, is referred to as resilience. Resilience has a major impact on a person's ability to bounce back from setbacks and disappointments in life. It equips people with the skills necessary to withstand adversity, adapt to change, and maintain a positive outlook. Developing resilience makes it easier for people to deal with stress, recover from failures, and overcome obstacles, all of which enhance mental health and overall wellness. This adaptive skill enhances one's capacity to manage urgent situations while also promoting long-term success and personal growth. Resilience is an interactive notion that describes overcoming stress or adversity or a relative resistance to experiences of environmental risk. As stated by APA The process and result of effectively adjusting to trying or demanding situations in life is resilience, particularly when it comes to behavioural, emotional, and mental flexibility and adjusting to both internal and external expectations. (Psychology APA Dictionary, n.d.)

Numerous elements, including personal qualities like optimism, emotional control, and self-efficacy, have an impact on resilience. The provision of social support, encompassing ties with family, friends, and the community, is essential in fostering emotional resilience. Stable living conditions, education, and resource accessibility are examples of environmental factors that also have an impact.Experiences such as surviving hardship in the past and creating a healthy coping strategy can also help people become more resilient. Children must learn to overcome relatively small adversity in order to become resilient to more difficult situations in the future.Ernst and colleagues, 2011b

The study by Leung, Chan, and Ho (2022) examines the connection between resilience and social support in emerging adults (ages 18–35) who had experienced adverse childhood experiences (ACEs). The results showed that the concept of resilience in these adult adults was often associated with "self-righting" judgements, which were dependent on social supports but also associated with self-sufficiency. Although self-reliance played a vital part in growing resilience, it could also discourage people from asking for help and engaging in self-compassion activities. (Leung and others, 2020)

A different study looks into the connection between adult resilience and adverse childhood experiences (ACEs), emphasizing both psychological and coping resilience. Cross-sectional data from the Stress-And-Gene-Analysis cohort, including 26,198 Icelandic women between the ages of 18 and 69, or 30% of the country's female population, were used in the study. The Connor-Davidson Resilience Scale was used to test coping skills, the ACE-International Questionnaire was used to quantify ACEs, and the lack of mental morbidity was the definition of psychiatric resilience. After adjusting for confounders, generalised linear regression models were used to assess the relationships.. Results showed that a higher number of ACEs was inversely related to adult resilience in a dose-dependent manner, with each standard deviation increase in ACE scores linked to lower coping ability and psychiatric resilience. Women with five or more ACEs had significantly lower prevalence of high coping ability and psychiatric resilience, with specific ACEs such as emotional neglect, bullying, sexual abuse, and household mental illness consistently associated with reduced resilience. These findings suggest that cumulative ACE exposure has a long-lasting negative impact on adult resilience, independent of socioeconomic factors and social support in adulthood.(Daníelsdóttir et al., 2022)

Resilience is defined as the variance in psychosocial functioning that remains after accounting for exposure to adversity. More research examines the construct and predictive value of utilising the residuals approach to quantify resilience. Data from the multigenerational, longitudinal Avon Longitudinal Study of Parents and Children are used in the study. The Strength and Difficulties Questionnaire was used to regress teenage adversity experiences on psychopathology scores in order to extract residual variance. While predictive validity was evaluated by contrasting the impact of resilience on depressive

symptoms at 18 years and NEET (Not in Employment, Education, or Training) status at 17 and 23 years, construct validity was investigated by examining whether well-known resilience factors, such as self-esteem and positive sibling relationships, predicted resilience. Strong construct validity was demonstrated by the results, which indicated that a number of protective factors significantly predicted resilience. Resilience's predictive validity was further supported by associations with fewer depressive symptoms and a decreased chance of being classified as NEET. Although replication is advised, these results imply that the residuals methodology is a legitimate means of researching resilience.(Cahill et al., 2022)

1.2 Birth order & Resilience

Resilience can be greatly impacted by birth order since different family positions create different coping strategies and stress reactions. For example, firstborns are typically expected to shoulder more responsibility and expectations, which might encourage the early development of persistence and problem-solving abilities. Conversely, middle children may develop flexibility and negotiating abilities as a result of their position settling disputes amongst siblings. The youngest children, who often receive more care and attention, may grow up with great social skills and self-assurance, but they may also struggle with handling independence. The ways in which each birth order position contributes to the development of resilience vary, demonstrating the significant influence that family dynamics have on an individual's capacity to overcome adversity.

A prior study looked at the connection between children's birth order and a number of mental health-related factors, such as self-esteem, resilience, and happiness, in the 9–10 age range. The Adachi Child Health Impact of Living Difficulty (A-CHILD) study, which polled 3,744 fourth graders in Adachi City, Tokyo public schools in 2018, provided the data for this study. The study used self-reported resilience, happiness, and self-esteem measures as well as parent-rated Strengths and Difficulties Questionnaire (SDQ) scores. The impact of birth order was evaluated using multiple regression and logistic regression models, adjusted for child sex, mother's age, mother's education, depressive symptoms in the carer, household income, and living with grandparents.Results suggested that last-borns had the lowest total difficulties score and the highest prosocial behaviors and resilience scores, whereas only children had the highest total difficulties score. The least happy people were middle-borns, and there was little difference in self-esteem levels between birth orders. These results underscore the diverse effects of birth order on several facets of child mental health and indicate the necessity for additional investigation to enhance comprehension of these correlations.In 2021, Fukuya et al.

Another study by Oktan investigated whether gender and department differences existed in resilience, as well as the association between psychological birth order and resilience among university students. 450 undergraduate students from different departments at Karadeniz Technical University's Fatih Faculty of Education (66.9% female and 33.1% male) made up the sample. The Psychological Birth Order Inventory, the Resiliency Scale, and a Personal Data Form were used to gather data. The findings showed that resilience was positively connected with being an only child or middle child, but adversely correlated with being the oldest or youngest child in a psychological birth order. Resilience was significantly predicted by psychological birth order.Additionally, female students displayed greater resilience scores compared to male pupils. The report recommends more research, especially focussing on groups of at-risk university students and include more characteristics.(Oktan & Associates, 2014b)

Additional research The purpose of the study was to investigate how firstborn and secondborn boys and girls differ in their resilience and ability to adjust. It was a quantitative comparison research with 120 Amritsar, India, residents in the sample. Data were gathered via a questionnaire, and the statistical "t" test method was employed for analysis. The findings showed that firstborn boys were far more resilient than second-born boys, but there were no variations in the males' adjustment ratings based on birth order. Based on birth order, there were no appreciable variations in the resilience or adjustment of females. These results point to the need for more research to fully comprehend these patterns and their underlying causes, as they reveal a possible gender-specific influence on resilience related to birth order.(Deo and others, 2024)

In summary, a person's growth and coping strategies are influenced by a variety of interrelated elements, including birth order, traumatic early experiences, and resilience. Their family's status can influence a person's experiences and solutions to problems, and traumatic childhood events might negatively impact their emotional and psychological health. Nonetheless, resilience—which is the capacity to overcome adversity and adapt—can be extremely important in reducing these impacts. Knowing how these components interact makes it easier to understand how people deal with and overcome challenges in their daily lives.

2. METHODOLOGY

2.1 Research design:

The study uses a correlational research design, which entails examining, without changing, the association between two or more variables. Determine the direction and degree of the association between two or more variables by using a correlation research design. Researchers can ascertain whether and to what degree changes in one variable correlate with changes in another using this strategy. Correlation study helps identify possible patterns, trends, or dependencies within the data by calculating the degree of relationship between variables. The main technique used in this study to collect data on these factors was the use of questionnaires. We were able to examine the degree of relationship between the variables thanks to this

method. However, it's important to note that correlational research design does not establish causation; rather, it focuses on identifying patterns of correlation between variables.

2.2 Variables

Predictor variable: Birth order and Adverse childhood experiences

Criterion variable: Resilience

2.3 Hypothesis

Hypothesis 1: There is no correlation between birth order and Adverse childhood experiences.

Hypothesis 2: There is positive correlation between adverse childhood experiences and Resilence.

Hypothesis 3: There is positive correlation between older child and resilience.

Hypothesis 4: There is Negative correlation between Younger child and resilience**.**

2.4 Sample

Participants in the study ranged in age from 18 to 25. Links to the survey were shared throughout a number of social media sites, including Facebook, Instagram, WhatsApp, and others. Data from 198 responders was gathered using Google Forms. Basic demographic information was sought of each participant, including name, gender, age, and credentials. To ensure that participation was voluntary and that participants could withhold or withdraw their responses at any time during the trial, a permission form was attached to the questionnaire.

2.4.1 Sampling method

In the study, the convenience sampling approach was applied. Convenience sampling is a non-probability sampling method where participants are selected based on how easily and readily they can be reached by the researcher. Convenience sampling depends on finding people who are willing to engage in the study and are easily accessible, as opposed to using random selection approaches. Convenience sampling was chosen for this study primarily due to its practicality and ease of implementation. Given the target population of young adults (aged 18 to 25) and the research setting at Parul University, as well as additional data collection in Vadodara and Pune using social media for distributing the questionnaire allowed for quick and accessible data collection across multiple locations. This method enabled researchers to efficiently reach a large number of potential participants within the specified age range and varied geographic locations.

Furthermore, convenience sampling is suitable when the primary focus is on obtaining a sample that is readily available and accessible, rather than ensuring strict random selection or representativeness of the entire population. In this case, the aim was to gather insights specifically from young adults at the university and other cities, making convenience sampling a practical choice to achieve this objective within the study's resource and time constraints. Despite its limitations in generalizability, convenience sampling served as a viable approach to gather relevant data for exploring the relationships between spiritual coping, materialism, and existential crisis among the target demographic in multiple locations. The criteria for the sampling are listed below.

2.4.2 Inclusion criteria

Participants in this research had to be Indian citizens, aged between 18 and 25, and capable of reading and comprehending the English language. The purpose of these criteria was to ensure that participants belonged to a specific demographic range relevant to the research topic. Restricting the age range to 18–25 years aimed to gather a cohort representative of young adults entering adulthood—a period often associated with distinct social, psychological, and economic dynamics. The citizenship criterion facilitated a more cohesive analysis of findings by maintaining uniformity in participants' backgrounds and experiences within the Indian context. Proficiency in the English language was necessary to ensure that participants could fully engage in the research process through effective communication and comprehension of study materials.

2.4.3 Exclusion criteria

The study's exclusion criteria included individuals who submitted incomplete forms or forms without consent. Ensuring that participants voluntarily took part in the study and were aware of its procedures, goals, potential risks, and rewards was essential to ethical research practices. Consent was fundamental to maintaining moral principles and respecting human autonomy; therefore, participation was not allowed for those who did not give consent. Incomplete forms also posed a risk to the accuracy and consistency of the gathered data, which could have affected the study's validity and interpretation. To uphold the integrity of the data and the seriousness of the research, individuals who did not fill out all the required portions of the form were likewise not incorporated in the study.

2.5 Tools

2.5.1 Adverse Childhood Experiences Questionnaire (ACE-Q),

Felitti and colleagues developed the 10-item Adverse Childhood Experiences Questionnaire (ACE-Q), a tool to quantify exposure to traumatic experiences, such as psychological, physical, and sexual abuse, as well as household dysfunction, such as substance misuse and domestic violence. The questionnaire must be completed by someone who is at least 18 years old. It has shown strong validity ($r = 0.28–0.70$, $p < 0.001$) and internal consistency ($\alpha = 0.64$; $= 0.86$), and it correlates well with other measures such as the Strengths and Difficulties Questionnaire (SDQ). According to Felitti et al. (1998), the initial ACE Study revealed a correlation between elevated ACE-Q scores and a higher chance of developing chronic illnesses, mental health problems, and violent behaviour in later life.

2.5.2 The Brief Resilience Scale

The Brief Resilience Scale (BRS) is a tool that assesses an individual's ability to recover from stress. The BRS emphasises resilience as a dynamic process rather than just resistance to stress or illness. The scale focusses on areas such as the ability to overcome adversity and adapt to and grow in difficult circumstances. The BRS has strong reliability, as evidenced by its high level of internal consistency as shown by Cronbach's alpha and test-retest reliability demonstrating stability over time. The BRS is validated by partial correlations that control for other variables in order to test discriminant predictive validity and by correlations with other validated resilience measures to examine convergent validity.

2.7 Procedure

The study conduction was carried out in the following phases.

Phase - I - Building theoretical framework

During this stage, the primary focus was on establishing the theoretical foundation of the study. A meticulous examination of the literature was conducted, with a specific focus on research concerning Adverse childhood experience among young adults and their potential correlation with birth order and resilience .

Following a thorough review, it was observed that there was lack of study which used The Adverse Childhood Experiences Questionnaire (ACE-Q) and was done on the Indian population. By addressing this gap, the researchers aimed to contribute to the advancement of theoretical frameworks and practical interventions aimed at better supporting individuals navigating challenges during this crucial developmental stage.

Phase - II - Data collection

After conducting a thorough review of the existing literature, the process of identifying standardized tools that align with our study's objectives commenced. The scale was chosen based on their relevance to the domains we aimed to explore-Adverse Childhood Experiences and resilience . To ensure the integrity of our data collection process, essential measures were taken; as tool was available on open resources, a courtesy email was sent to the author via email.

Following that, researchers proceeded to design a Google document that served as our data collection tool. This document was carefully crafted to include fields where participants could provide demographic information, including details about their family background, educational attainment, and age. This demographic data was crucial for gaining insights into the environmental factors that might influence individuals' experiences with childhood experiences.

To make it convenient for participants to provide their responses, we created a user-friendly Google Form, which we then shared across various social media platforms such as WhatsApp, Facebook, and Instagram. This enabled us to reach a diverse range of participants and gather a comprehensive dataset.

Phase - III - Data coding & analysis

Upon receiving responses from participants, the data was carefully screened for each submission to ensure it met our predetermined inclusion criteria. Entries that didn't meet these criteria were excluded from further analysis to uphold the integrity of our dataset.

Once the dataset was refined, the data was assigned numerical values based on the scoring system of the relevant scale used. The coding process enabled us to organize the data systematically and prepare it for statistical analysis. Subsequently, we conducted statistical analyses using JASP. JASP is a statistical software program that provides a user-friendly interface for conducting various types of statistical analyses. It is designed to be accessible to researchers and students, offering a range of features to perform both basic and advanced statistical procedures. JASP supports frequentist and Bayesian analyses, making it a versatile tool for data analysis and interpretation in research settings. Shapiro-Wilk test was conducted to assess the normal distribution of the data, ensuring the validity of our statistical analyses. Additionally, the Spearmen correlation was employed to explore the relationships between variables Adverse childhood experience and socioeconomic status among young adults.

3. RESULT & DATA ANALYSIS

3.1 Descriptive statistics:

Table 1		
	Adverse Childhood Experience	**Resilience**
Missing	0	0
Mean	21.449	1.697
95% CI Mean Upper	21.884	2.002
95% CI Mean Lower	21.015	1.392
Standard Deviation	3.101	2.175
Shapiro-Wilk	0.980	0.774
P-Value of Shapiro-Wilk	0.007	<0.001
Minimum	14.000	0.000
Maximum	31.000	10.000

Note: Descriptive statistics

The Shapiro-Wilk test was conducted to assess the normality of the data. The p-value for Adverse Childhood Experiences (ACEs) was 0.007, indicating a non-normal distribution. In contrast, the p-value for resilience was less than 0.001, suggesting a normal distribution. However, since the overall data is not normally distributed, the researchers will employ nonparametric tests for further analysis.

Spearman Correlation

Table 2

Variable	**Birth order**	**Resilience**	**Adverse Childhood Experience**
Birth order	-	-	-
	-	-	-
Resilience	- 0.019	-	-
	0.787	-	-
Adverse Childhood Experience	-0.184	-0.144	-
	0.009	0.042	-

Note: Spearman Correlation

The overall data did not meet the requirements for parametric tests, so the relationships between Adverse Childhood Experiences (ACEs), resilience, and birth order were examined using the Spearman correlation test. The results showed that there was no strong correlation between any of the variables: the correlation between resilience and birth order was -0.019, indicating a weak negative correlation; the correlation between resilience and ACEs was -0.144, suggesting a weak negative correlation; and the correlation between ACEs and birth order was -0.184, likewise indicating a weak negative correlation.

4. DISCUSSION

Hypothesis 1: There is no correlation between birth order and adverse childhood experiences.

The first hypothesis posited that there would be no correlation between birth order and adverse childhood experiences (ACEs). While the literature suggests that birth order may influence psychological outcomes, the findings from this study indicate a weak negative correlation between ACEs and birth order ($r = -0.184$). This weak relationship suggests that although

certain trends might exist, they are not robust enough to draw definitive conclusions about the impact of birth order on ACEs. Previous research indicates that firstborns may experience different parental expectations and pressures that could either buffer or exacerbate adverse experiences (Sulloway, 1996; Dunn & Plomin, 1990). However, the findings in this study highlight that the nuances of these relationships require further exploration. Future research could delve deeper into specific types of ACEs across different birth orders, examining whether certain birth order positions are more prone to specific adverse experiences.

Hypothesis 2: There is a positive correlation between adverse childhood experiences and resilience.

The second hypothesis suggested a favourable link between ACEs and resilience. The findings showed a weak negative connection (r = -0.144) between ACEs and resilience, which was contrary to expectations. This result is consistent with previous research suggesting that ACEs typically impair coping strategies and resilience (Daníelsdóttir et al., 2022; Leung et al., 2022). The harmful impacts of childhood trauma can impede emotional and psychological development, making it more complicated for individuals to create resilience in adulthood. The findings of this study cast doubt on the theory that traumatic childhood events could build resilience by supporting the assumption that these experiences frequently result in problems with mental health and social functioning. Rather, it implies that the accumulation of adverse childhood experiences (ACEs) has a detrimental effect on a person's ability to adjust and overcome hardship.

Hypothesis 3: There is a positive correlation between older children and resilience.

The third hypothesis posited a positive correlation between being an older child and resilience. The Spearman correlation test yielded a value of -0.019 for the relationship between birth order and resilience, indicating a weak negative correlation. This outcome contradicts the expectation that firstborns, who often take on more responsibilities and expectations, would demonstrate higher resilience (Fukuya et al., 2021). While some literature suggests that firstborns develop strong problem-solving skills due to their roles as caregivers or leaders among siblings (Kramer & Gottman, 1992), the current findings imply that these advantages may not translate into greater overall resilience. Instead, the pressures faced by firstborns might contribute to anxiety or stress, detracting from their resilience. The complexities of these relationships warrant further investigation, particularly into how different family dynamics and expectations shape resilience among older children.

Hypothesis 4: There is a negative correlation between younger children and resilience.

The fourth hypothesis anticipated a negative correlation between being a younger child and resilience. Again, the findings revealed a weak negative correlation for resilience and birth order, indicating no strong relationship. Prior research suggested that youngest children may benefit from greater parental support and care, potentially fostering strong social skills and self-confidence (Fukuya et al., 2021). However, the lack of a significant correlation in this study raises questions about how being the youngest in a family affects resilience. It may be that while younger children have certain advantages, the dynamics of family roles can also lead to challenges, such as difficulty in handling independence or navigating social relationships. This highlights the need for nuanced understandings of how familial positioning can influence resilience across various contexts.

5. CONCLUSION

The current study concluded that Adverse childhood experiences do not have any significant impact on a person's Resilience . Similarly there is not significant role of birth order for adverse childhood experiences and Resilience

6. LIMITATIONS

One significant flaw in the sample is the unbalanced male to female ratio. Future research should strive for a more balanced sample in order to enhance the validity of the results across genders.

The conclusions' potential applicability may be limited by the fact that the data was submitted solely by students. Students may have distinguishing characteristics, such as certain developmental stages or educational experiences that don't match the viewpoints of those who aren't students or who are in various stages of existence. Future study should use a more diversified sample that represents a range of demographic groups in order to support the study's conclusions.

Disclosure and Ethical Standards Statement

We, hereby attest that the study titled "The Interplay of Birth Order and Adverse Childhood Experiences in Shaping Resilience among young adults" is our original work and not previously published elsewhere in any form or language. The data collected for this study has been kept confidential and has not been shared with anyone. At no point in the research procedure were humans or animals harmed physically or psychologically. Moreover, the participants received no encouragement. Consent was taken from each participant before participating. We declare that this study complies with the strictest ethical guidelines and demonstrates our commitment to intellectual inquiry and academic honesty.

Declaration of conflicts of interest

Author Kumari Nutan has declared no conflicts of interest

Author Dr. Dipal Patel has declared no conflicts of interest

Author Hetanshi Bhatt has declared no conflicts of interest

Author Harsh Jain has declared no conflicts of interest

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee. As there was no clinical or non clinical experimental trial was performed of any of the participants; approval committee permission is not applicable for this study.

Informed consent

Informed consent was obtained from all individual participants included in the study.

Data Availability Statement

The data supporting the findings of this study are not publicly available due to restrictions on sharing. However, the data can be accessed via the following link:

[https://docs.google.com/spreadsheets/d/1JDjIcyyyvEqP_ODpmDWCEheYCtvWQKIItKNhHf8N8QI/edit?usp=sharing]. To obtain access, please contact the authors directly.

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