The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 13, Issue 2, April- June, 2025
DIP: 18.01.418.20251302, DOI: 10.25215/1302.418
https://www.ijip.in

Research Paper

# Eyes on the Edge: Role of Negativity Attentional Bias in Risk-Taking Among Indian Young Adults Exposed to Adverse Childhood Experiences

Soumya Nair[1]*, Dr. Zuby Hassan[2]

## ABSTRACT

Adverse Childhood Experiences (ACEs) are proven to be linked with risk-taking behaviours in individuals of various ages. However, evidence on the factors facilitating this relationship is limited, especially in the Indian context. This study examines whether negativity attentional bias predicts risk-taking in Indian young adults, aged 18-25 years with ACEs, along with relationships between the three variables. A total of 164 participants were recruited through convenience sampling and the data was collected using Google Forms. Spearman correlation and M-estimator robust regression analyses were conducted. Results revealed negativity attentional bias as a significant predictor of risk-taking behaviours. Additionally, severity of ACEs was found to be significantly related to risk-taking behaviours, with peer and community violence being major predictors. These findings contribute to the understanding of cognitive and behavioural factors impacted by childhood adversity and emphasise on targeted interventions to mitigate risk associated with them.

***Keywords:*** *Adverse Childhood Experiences, Negativity Attentional Bias, Risk-Taking, Dot-Probe Task, DOSPERT Scale*

Adverse childhood experiences (ACEs) encompass different types of abuse, neglect and violence experienced by individuals in early years of their life that might have far reaching impact on their physical and mental health, social and occupational life (WHO, 2020). ACEs are understood in ten adversities categorised into three categories of abuse, neglect and household dysfunctions. Abuse can manifest in physical, emotional, or sexual forms while neglect may be either physical or emotional. Household dysfunction encompasses various adversities, including the incarceration of a family, member, exposure to domestic violence, living with a family member experiencing any mental illness, parental separation or divorce, and substance misuse within the family (Aces aware, 2025). In recent years, ACEs also include peer violence and community violence within its umbrella. These categories are further explained below (*Adverse Childhood Experiences (ACEs)*, 2021; Peterson, 2017).

1. Physical Abuse: A parent, caregiver or adult pushed, grabbed, slapped, struck you violently that it left your injured in any way or left marks.

[1]Student, Amity Institute of Psychology and Allied Sciences (AIPS) Amity University, Noida, India
[2]Assistant Professor, Amity Institute of Psychology and Allied Sciences (AIPS) Amity University, Noida, India
*Corresponding Author

**Received: May 01, 2025; Revision Received: June 26, 2025; Accepted: June 30, 2025**

2. Emotional Abuse: A parent, caregiver or adult cursed at you, insulted you, threatened to abandon you or hurt you.
3. Sexual Abuse: A parent, caregiver or adult who was at least 5 years older than you, touched your body in a sexual way or attempted to have any sort of sexual intercourse with you.
4. Physical Neglect: A parent or caregiver was not there to take care of you- you did not have enough food to eat, you were not sent to school and you did not have clean clothes to wear.
5. Emotional Neglect: A parent or caregiver were not there to show you love and support. You often felt that they did not understand you.
6. Household Dysfunctions: A parent or caregiver was too intoxicated to take care of you. You witness a parent or caregiver being hit, punched, pushed, yelled at and humiliated. A parent or caregiver was incarcerated. A parent or caregiver was going through a mental illness. You witness your parents' separation and/or divorce.
7. Peer Violence: Various forms of aggression directed by the peers in terms of bullying, exclusion and harassment.
8. Community Violence: Being exposed to deliberate acts of interpersonal violence in public spaced by individuals who are not related to the victim. Such acts include, gang fights, shootings in public spaces, civil war or any war-like conditions and terrorist attacks.

The prevalence of ACEs and its impact in India is underreported and understudied. As per Trivedi et al. (2021) various studies and surveys in the past have indicated higher prevalence in physical abuse, child sexual abuse (CSA), emotional abuse, neglect and household substance abuse. The authors have reviewed several studies reporting higher prevalence of various trauma-related disorders and anxiety-related disorders as a result of ACEs. Maurya & Maurya (2023) conducted a study to assess the impact of ACEs on health risk behaviours. They found nearly three-fourths of respondents reported having at least one family member who engaged in substance use. Interparental violence was experienced by one in four girls and one in five boys. Physical abuse was more prevalent among boys than in girls. Gender discrimination was reported approximately 7% of boys and 13% of girls.

Incidents of sexual violence were higher among girls than in boys. Suicidal thoughts were also found to be prevalent in participants who experienced sexual abuse. Significant evidence was found for the association between childhood adversity and engagement in risky lifestyle behaviours later in life. Overall individuals who have experienced greater number of adverse events in childhood are more likely to adopt risky behaviours, which in turn increases their likelihood of developing negative health outcomes such as violent tendencies, smoking, early sexual initiation, and mental health disorders in adulthood.

This study attempts to assess negativity attentional bias as a predictor of risk-taking behaviours in young adults with ACEs. Negativity bias is the unconscious inclination towards negative/adverse events in terms of attention, interpretation and processing of such stimuli.

Negative events/stimuli have been defined as those that result in unpleasant and non-beneficial consequences while positive events/stimuli are those that result in pleasant and beneficial consequences (Vaish et al., 2008).

Attention serves as a fundamental cognitive mechanism that filters the vast influx of sensory information individuals encounter daily. It acts as a gatekeeper, determining which stimuli gets noticed, processed, and ultimately encoded in our memory. Since we are constantly bombarded with competing inputs, where we direct our attention shapes how we interpret a situation and respond to it. Decision-making is highly influenced by this attention allocation, as it helps in prioritizing some pieces of information to evaluate for future positive outcomes.

Furthermore, decision-making and social relationships can be impacted by attentional bias as well. Attentional bias refers to the tendency to pay more attention to some aspects of our surroundings while disregarding others. Facial expressions are often fixated upon during social interactions in order to search for details that reveal others' thoughts and feelings. This enables the recognition of minute facial expressions such as furrowed eyebrows, frowns, or changes in eye contact, that could be signs of threat. Although it is helpful to read other people's facial expressions, sometimes they can be misinterpreted as well (The decision lab, 2021). This influences the choices one makes as one consciously and unconsciously familiarizes oneself with the attentional patterns to predict danger, failure or loss and may lead to automatic biases that steer attention towards certain cues. This underscores the importance of examining attentional mechanisms in decision-making, especially among populations where emotional experiences or cognitive styles may skew attentional focus towards threat or reward.

Many historic studies have proven its existence and impact on decision making such as that of Kanheman & Tversky's (1979) prospect theory. This theory offered a framework for understanding how individuals make decisions under risk and uncertainty. Unlike the classical economic theories that assume individuals acting as rational agents in order to maximize their outcomes, Prospect theory demonstrates that decision-making is often irrational and influenced by how choices are framed. One of the core principles of this theory is loss aversion, stating the idea that losses appear larger than gains. Another key feature of this theory is value function, which is defined over gains and losses than the final outcomes, explaining how individuals are generally risk-seeking in face of losses. The theory also mentions decision weights, which refers to the tendency to overweight small probabilities and underweight moderate or high probabilities. These principles have implications within risk-taking behaviour (Kanheman & Tversky, 1979). To explain this with an example, an individual betting their money on a game, may overvalue their chances of larger win even after a few losses to avoid a sure loss.

Various theories of decision making also mention risk-taking as a key factor. The term refers to engaging in a set of behaviours that involve a number of uncertain outcomes, whether socially, financially or sexually. The studies on risk-taking behaviour in the process of decision-making evaluate how much risk individuals are willing to take for the higher expected value. This behaviour has been explored through various theoretical lenses. Some of these perspectives emphasize the cognitive mechanisms involved in how individuals perceive and interpret risk, suggesting that suck behaviours in childhood and adolescence may stem from underdeveloped cognitive abilities. It is also highlighted that the emotional aspects of decision making, proposing that heightened emotional reactivity during these stages may lead to greater engagement in risk-taking behaviours. Social influences, particularly that of peers and interpersonal dynamics, have been found to shape risk-taking tendencies among the youth (Boyer, 2006).

Young adulthood, typically ranging from 18 to 25 years of age, is a term introduced by Arnett (2000), which captures the unique challenges and opportunities faced by individuals as they transition from adolescence to adulthood. These changes involve greater engagement with risk-related decisions, whether in relationships, academics, finances, or health-related behaviours.

One of the key characteristics of young adulthood is the heightened propensity for risk-taking behaviours. Neurodevelopmental research indicates that while the dopaminergic system, associated with emotional reactivity and reward processing, matures earlier in adolescence, the prefrontal cortex, governing the executive functioning and impulse control, only develop in the mid-20s (Steinberg, 2008). This developmental imbalance makes young adults more susceptible to impulsive decision-making, particularly in emotionally charged or high-stimulation situations. Consequently, behaviours such as substance use, reckless driving, unprotected sex and financial impulsivity are more prevalent during this period.

From a psychosocial perspective, young adults are also navigating significant transitions such as higher education, entry into the workforce, shifting peer dynamics and parental separation. These transitions may increase the exposure to stressors while also placing the individuals in situation requiring frequent decision-making under uncertainty. For individuals with a history of ACEs, this period may represent a time of increased vulnerability, as old emotional and cognitive maladaptive patterns resurface.

Within Indian context, the stigma surrounding mental health and emotional expression can lead young adults to suppress trauma-related experiences while engaging in high-risk behaviours as a way of coping. Studying this population, therefore, allows for a culturally nuanced understanding of how psychological factors like attentional biases and past adversities influence real-world behaviours.

## REVIEW OF LITERATURE

The relationship between negativity bias and risk-taking behaviour in individuals with adverse childhood experiences (ACEs) remains poorly understood. This study explores this relationship drawing on the theoretical premise that childhood adversity heightens attentional biases toward negative stimuli, leading individuals to seek unpredictable or uncertain outcomes. This tendency may arise as a maladaptive coping mechanism or a learned response to early environmental instability.

Bick and Nelson (2015) conducted a systematic review on effects of early adverse experiences on brain development, finding maladaptive patterns of social information processing and/or emotional regulation due to attentional biases toward threatening emotional cues. Structural altercations in anterior cingulate cortex (ACC) were found in adults who retrospectively reported childhood maltreatment (Hart & Rubia, 2012). ACC, which is located in the medial frontal lobe is associated with cognitive processes like error detection, decision making, reward response and motivation (Bick and Nelson, 2015). Evidence also showed that foster children who were removed from their biological parents showed reduced activation in the ACC and increased activation in the left inferior parietal lobule and right superior occipital cortex, while demonstrating inhibitory control (Bick and Nelson, 2015).

Impaired inhibitory control points to difficulty in regulating risky behaviours. Increased activation in the left inferior parietal lobule and right superior occipital cortex likely indicates heightened visuospatial attention (Numssen et al., 2021; Naidich et al., 2013). MacIntyre et al. (2024) studied the impact of perceived threats on visuospatial perception and the ensuing protective behaviours through a meta-analysis, finding out the impact of threat-induced modifications in visuospatial processing on risk-appraisal. Since vision is usually used by humans to detect threats, visual information is given more precedence over information from other senses. Information from vision appears to be dominating visual and proprioceptive incongruency (Yilmaz Balban et al., 2021; Bellan et al., 2015; Newport & Gilpin, 2011).

Hence, visuospatial biases are significant.

Ample research from the past shows a strong correlation between traumatic experiences and engagement in risky behaviours. Diagnostic and Statistical Manual includes "self-destructive or risky behaviour" as one of the symptoms for post-traumatic stress disorder (PTSD) diagnosis (American Psychiatric Association, 2013). Some ACEs like emotional abuse and neglect, witnessing household violence and a family member with any mental illness were found to be more related to sensation seeking than direct forms of abuse like physical and sexual abuse (Babad et al., 2019). Studies have found the relationship between risky sexual behaviours and childhood sexual abuse was found to be mediated by post-traumatic symptoms and problematic drinking (Kerig, 2019; Walsh et al., 2014; Hannan et al., 2015). ACEs have also been connected to long-term financial instability due to impact on school achievements, work opportunities, financial planning abilities and maladaptive financial beliefs (Harter & Harter, 2021; Ross et al., 2022). Additional evidence also proves linkages to early sexual debut (Maurya & Maurya, 2023), dating violence (Musa et al., 2018) and physical inactivity (Majid et al., 2023) as well.

On the contrary, a few studies have proven the opposite- early traumatic experiences lead to risk aversion. Castillo (2020) conducted a longitudinal study on Peruvian children who have witnessed domestic violence growing up and found that these children grew up to be more risk averse. Babad et.al (2019) found decreased sensation seeking in emerging adults who survived ACEs. This study also found slight correlations between risk-taking propensity and sensation seeking, suggesting an indirect association between ACEs and risk-taking propensity among the participants. War as a traumatic event can also have long term impact, leading to risk aversion. Kim and Lee (2014) conducted a longitudinal survey on participants aged 15 years and above from almost 5000 households in South Korea. Structural and reduced-form estimation found that the individuals aged 4-8 years old during the peak of Korean Civil war experience risk aversion and those who witnessed the war experience increase in risk aversion, attributed to the perception of likelihood of adverse shocks.

Evidence shows early exposure to adversity influences the use of knowledge of risks and rewards in making behavioural decision making (Smith et al., 2025). The study reported that children with high levels of adversity showed low motivation to approach rewards in reward-related tasks and are more sensitive to negative feedback with altered activity in reward-related neural regions as well. They are also more sensitive to reversals from positive to negative feedback than vice versa. Individuals who experience a lot of stress during their childhood show less brain activity when they anticipate potential gains and losses. Areas including posterior cingulate, praecuneus, middle temporal gyrus, and putamen exhibit

decreased activity (Birn et al., 2017). This indicates poorer decision-making performance on tasks involving risk assessment and reward appraisal (Boecker et al., 2014; Balodis et al., 2012; Choi et al., 2012; Harms et al., 2017).

Research has shown a relation between ACEs and negativity bias in adulthood.

Letkiewicz et al. (2020) attempted to study this through emotional Stroop task and event-related potentials (ERP). They found reduced ERP waveform P300 in individuals with moderate and severe childhood abuse as compared to those without any such experience. Reduced P300 waveform is linked to emotional dysregulation, impaired attention and abnormal stimulus discrimination (Araki et al., 2005).

Lakshman et al. (2020) conducted a study on African American children exposed to trauma by assessing their attentional bias towards threat through eye-tracking task on viewing emotional and neutral faces. Correlational analyses found that children with greater trauma showed attentional biases towards angry faces as threatening cues. Some studies have also found attentional biases towards happy faces as mediating between childhood maltreatment and PTSD symptoms of avoidance or numbing, which are equally relevant (Fani et al., 2011).

Valence biases have further been proven significant in their effects on processing of decision making. Schwager and Rothermund (2013) found in their second experiment that experimentally induced positivity bias through dot probe task led to more risk seeking decisions in the gambling task as compared to the negativity bias. Participants with positivity bias also betted more money on a coin toss and hence neglecting possible losses in the task. Chai et al. (2016) studied difference in levels of negativity bias between dangerous and safe drivers through emotional Stroop task. The results found drivers with high negativity bias engaged in more crashes as compared to the drivers with low negativity bias. The risky drivers also showed diminished P3 components on event-related potentials (ERPs) indication less inhibitory control of emotionally salient information.

While psychology has increasingly embraced a trauma-informed approach, South Asian representation-particularly from India-remains limited. The prevalence and nature of ACEs among Indian young adults are significantly under-documented, creating a critical gap in both research and intervention strategies. The current study not only attempts to focus on the need of cross-cultural research but may also encourage further exploration into the development of targeted interventions to mitigate the long-term effects of ACEs among the Indian youth.

Furthermore, extensive research has established a significant relationship between risk-taking and ACEs. However, the lack of Indian representation in this body of literature is notable. This study aims to address this gap by examining key mediators in the relationship previously studied, contributing to a more nuanced understanding of these dynamics in the Indian context.

***Research Objectives***

1. To study the relationship between severity of adverse childhood experiences (ACEs) and risk-taking in Indian young adults.

2. To study the relationship between negativity attentional bias and risk-taking in Indian young adults with adverse childhood experiences (ACEs).
3. To study the relationship between severity of adverse childhood experiences (ACEs) and negativity attentional bias in Indian young adults.
4. To study whether negativity attentional bias significantly predicts risk-taking in Indian young adults with adverse childhood experiences (ACEs).
5. To study whether specific types of adverse childhood experiences (ACEs) differentially predict risk-taking in Indian young adults.

***Hypotheses***

1. There exists a significant relationship between severity of adverse childhood experiences (ACEs) and risk-taking in Indian young adults.
2. There exists a significant relationship between negativity attentional bias and risk-taking in Indian young adults with adverse childhood experiences (ACEs).
3. There exists a significant relationship between severity of adverse childhood experiences (ACEs) and negativity attentional bias in Indian young adults.
4. Negativity attentional bias significantly predicts risk-taking in Indian young adults with adverse childhood experiences (ACEs).
5. Specific types of adverse childhood experiences (ACEs) significantly predict risk-taking in Indian young adults.

## METHODOLOGY

**Design**

The study explores associations between three variables- Negativity Attentional Bias, Risk-Taking and Adverse Childhood Experiences (ACEs) through correlational research design without any experimental interventions.

***Participants***

The participants of the study were selected through purposive and convenience sampling techniques under the following criteria.

1. Inclusion criteria- Between the age of 18-25 years old, having history of adverse childhood experiences while being an Indian citizen or of Indian origin currently residing in India.
2. Exclusion criteria- Participants on psychiatric medications were excluded to minimize uncontrolled variability in responses and potential confounding effects on cognitive and emotional processing. Additionally, individuals with limited proficiency in English (reading and writing) or without a stable internet connection were excluded to ensure accurate comprehension of measuring tools and seamless participation.

The study included 164 participants-81 Females (49.3%), 77 Males (46.9%) and 7 Others (4.3%). The age distribution includes: 3.04% were 18 years old, 4.9% were 19 years old, 8.5% were 20 years old, 10.9% were 21 years old, 26.2% were 22 years old, 20.1% were 23 years old, 15.2% were 24 years old and 10.9% were 25 years old.

The participants were from various states of India with the majority from Delhi-NCR (47.6%), followed by Uttar Pradesh (18.3%), Haryana (12.8%), Karnataka (4.9%), Rajasthan (3.6%), Chandigarh (1.8%), Punjab, Arunachal Pradesh and Nagaland (0.6%).

The civic status includes: "Single" (90.7%), "In a relationship" (6.5%), and "Living as a couple" (3.1%).
All the participants volunteered through informed consent after being assured of confidentiality.

***Methods of Data Collection***

1. **Dot-Probe Task:** The purpose of the dot-probe task (created by MacLeod, Mathews and Tata in 1986) is to assess how strongly the participant's attention is drawn and held by particular kinds of stimuli. There are several variations of this task, where the participant has to identify the location of the dots or the probes used while the stimuli- emotional inputs- and the duration of these stimuli varies. This study employed the use of an online demonstration provided by Baldwin Lab, McGill University (n.d.) to assess negativity attentional bias. The demonstration displayed one frowning and one smiling face for every trail. The speed at which participants identify the arrow probes that replace the frowning face, compared to the happy face, reflects the degree to which their attention was initially drawn to the negative stimulus during the brief presentation of the faces. Although the dot-probe task has shown mixed psychometric properties in some studies, it remains a widely used paradigm for studying attentional biases. The task's sensitivity to individual differences in attention allocation has been demonstrated across various clinical settings with unipolar depression (Trapp et al., 2018), bipolar disorder (Wenzel et al., 2022), and PTSD (Fani et al., 2011), making it a relevant tool for investigation negativity attentional bias.
2. **DOSPERT- Revised Scale:** Blais and Weber (2006b) developed the Domain-Specific Risk-Taking (DOSPERT) Scale Revised Version that evaluates both general and domain-specific aspects of risk-taking, including financial decisions (both gambling and investment-related), health and safety, recreational, social and ethical decisions. Participants score how likely they are to partake in risky activities as per each domain on a 7-point Likert scale. This study uses the revised and improved 30-item version of the risk-taking subscale. Shou and Olney (2023) conducted a meta-analysis that found overall satisfactory internal consistency reliability for DOSPERT, with coefficient alphas varying from 0.68 for social domain to 0.80 for recreational domain- dependability varied across subscales. For many forms of validity such as criterion- related validity, as well as construct validity, reliability has been proven to be a prerequisite (Shrout & Lane, 2012). The DOSPERT scale shows strong relationships with other risk attitudes measures (Frey et al., 2017). Previous research has demonstrated a high convergence between DOSPERT and its subscales and the measures used to assess sensation-seeking (Roalf et al., 2011).
3. **ACE-IQ:** Adverse Childhood Experiences- International Questionnaire (ACE-IQ) is developed by World Health Organisation (WHO) for administration on individuals aged 18 years and above. The questionnaire includes 43 items covering domains of family dysfunction, physical, sexual and emotional abuse and neglect by parents or caregivers, peer and community violence. It is intended to be measured in all nations. The scoring guidelines are followed as per instructions provided on WHO website. Satisfactory internal consistency (>0.7) has been demonstrated on the overall scale. However, low internal consistency was found for sub-domains of childhood negligence and violence outside home, which were attributed to the number of items in each category. Significant construct and concurrent validity was found in positive correlations with Marshall Trauma Scale (MTS; Santelices et al., 2025). ACE-IQ has

been translated in various languages for its global use indicating its cross-cultural applicability (Swingen, 2020; Santelices et al., 2025).

***Data Analyses***

The collected data was analysed using Jamovi and R software. Prior to statistical analyses, the dataset was screened for missing values and outliers. Outliers were identified but retained, as they were deemed genuine responses rather than errors. All analyses were conducted at a 95% confidence interval with statistical significance set at $p<0.05$.

1. Normality check: Shapiro-Wilk's test was conducted to assess the normality of the data. Additionally, histograms and Q-Q plots were inspected to visualize the distribution patterns.
2. Correlation analyses: Spearman's correlation analysis was conducted to assess the relationships between severity of ACEs, negativity attentional bias and risk-taking.
3. Regression analyses: Due to the presence of non-normally distributed data and potential influential data points, robust regression techniques were used in R software to examine the predictive relationships between the variables.

***Procedure***

The study was conducted in accordance with the guidelines outlined in the curriculum of Amity University. Participants were recruited through Google Forms, where Indian young adults meeting the eligibility criteria were invited to participate voluntarily. Informed consent was obtained before participation. To minimize potential biases, the full purpose of the study was disclosed only after the completion of the tasks.

Data collection followed a structured sequence. First, demographic information was recorded. Participants then completed the dot-probe task, followed by the DOSPERT scale and the ACE-IQ. The researcher was available to assist participants throughout the online data collection process to ensure clarity and compliance to instructions.

Following data collection, the dataset was screened for missing values and outliers.

Normality was assessed using Shapiro-Wilk's normality test in Jamovi software, with additional visual inspections through histograms and Q-Q plots. Since the data did not follow a normal distribution, Spearman's rank-order correlation was used to examine relationships between the variables in Jamovi. Further, robust regression methods were employed in R software to compute regression analyses, ensuring statistical robustness against deviations from normality and outliers.

## RESULTS

***Table 4.1 Descriptive Statistics***

| | Neg_bias | Risk_taking | ACEIQ |
|---|---|---|---|
| N | 164 | 164 | 164 |
| Missing | 0 | 0 | 0 |
| Mean | -2.34 | 3.81 | 10.2 |
| Median | -1.00 | 3.83 | 9.50 |
| Standard deviation | 430 | 0.783 | 4.94 |
| Skewness | -4.70 | -0.112 | 0.816 |
| Std. error skewness | 0.190 | 0.190 | 0.190 |

| | Neg_bias | Risk_taking | ACEIQ |
|---|---|---|---|
| Kurtosis | 64.1 | -0.0710 | 1.02 |
| Std. error kurtosis | 0.377 | 0.377 | 0.377 |
| Shapiro-Wilk W | 0.387 | 0.991 | 0.956 |
| Shapiro-Wilk p | <.001 | 0.417 | <.001 |

*Note. * p< .05*

***Figure 4.1 Normality Distribution for scores on Negativity Attentional Bias***

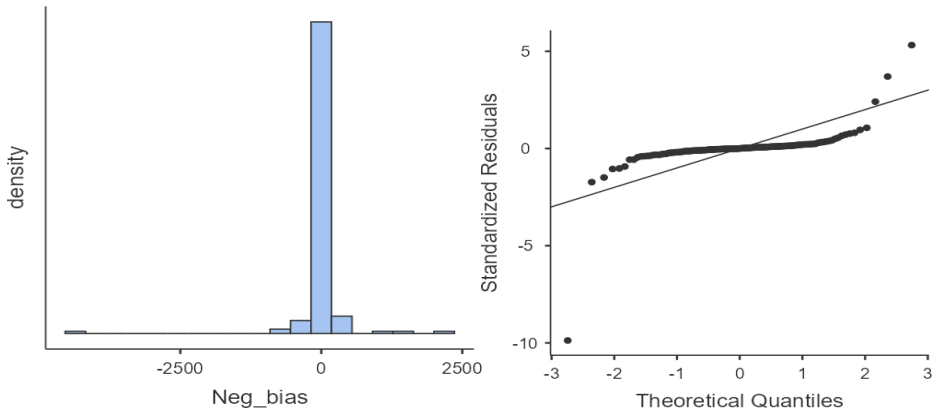


***Figure 4.2 Normality Distribution for scores on Risk Taking***

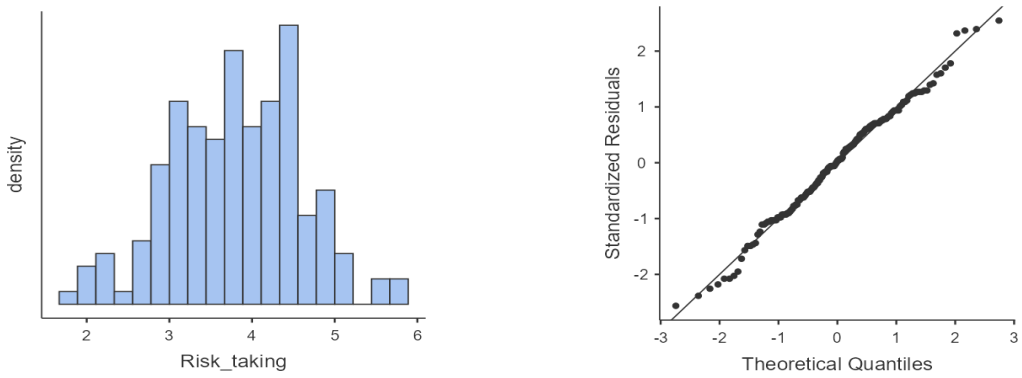


***Figure 4.3 Normality Distribution for scores on Adverse Childhood Experiences (ACEs)***

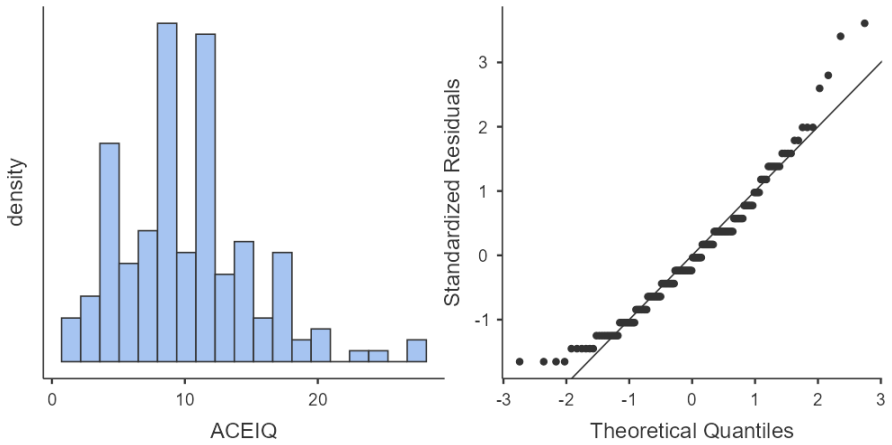

***Table 4.2 Correlation Matrix***

| Variables | | ACE-IQ | Risk_taking |
|---|---|---|---|
| | Total | | |
| ACE-IQ | Female | | |
| | Male | | |
| | Total | 0.243* | |
| Risk_taking | Female | 0.420* | |
| | Male | 0.120 | |
| | Total | -0.028 | 0.118 |
| Neg_bias | Female | -0.074 | 0.129 |
| | Male | 0.051 | 0.143 |

*Note. * p< .05*

***Figure 4.4 Overall Scatterplot Matrix***

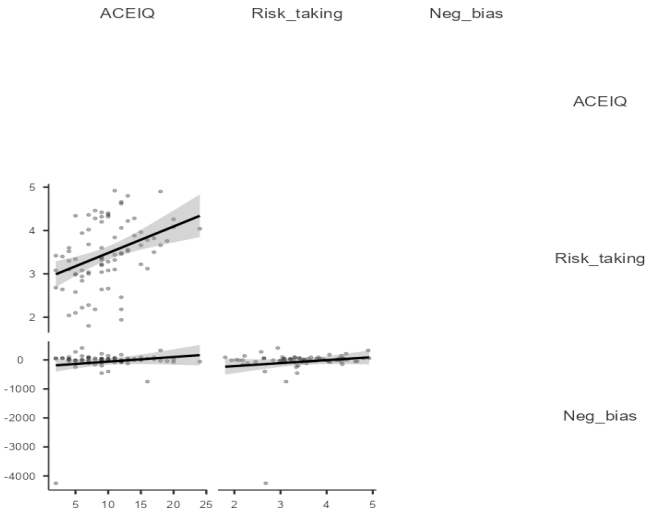


***Figure 4.5 Scatterplot Matrix for Female Participants***

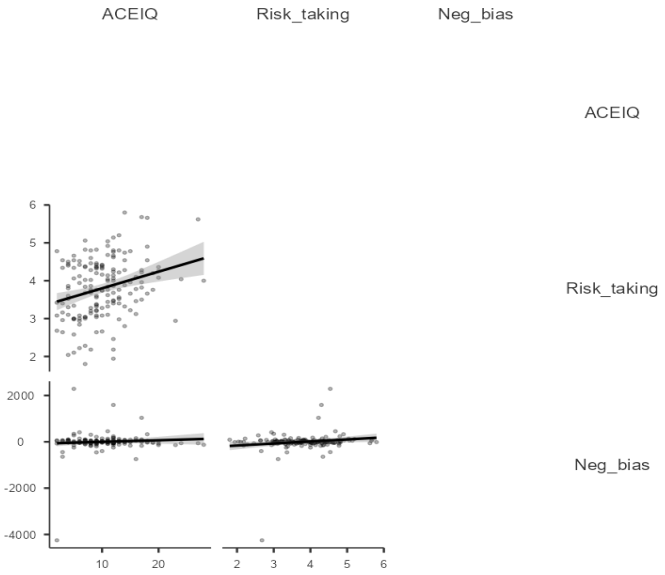

***Figure 4.6 Scatterplot Matrix for Male participants***

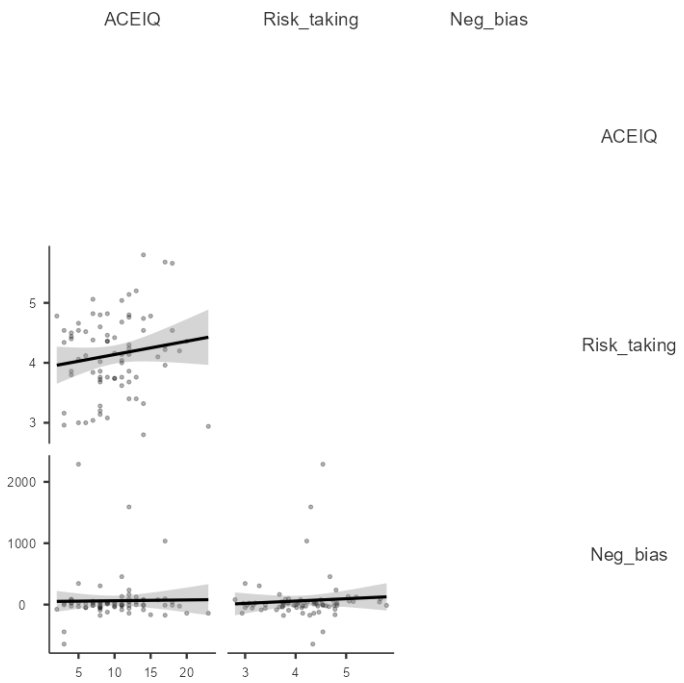


***Table 4.3 Regression analysis between Negativity Attentional Bias and Risk-Taking in Indian Young Adults with Adverse Childhood Experiences (ACEs)***

| | | | | CI | | | | |
|---|---|---|---|---|---|---|---|---|
| **Predictor** | | **Beta** | ***SE*** | **LL** | **UL** | ***t*** | ***p*** | $R^2$ |
| Overall | (Intercept) | 3.82 | 0.06 | 3.69 | 3.94 | 62.06 | <.001* | |
| | | 0.00029 | 0.00004 | 0.00020 | 0.00038 | 6.73 | <.001* | 0.027 |
| Female | (Intercept) | 3.50 | 0.09 | 3.32 | 3.68 | 39.72 | <.001* | |
| | | 0.00023 | 0.00006 | 0.00011 | 0.00035 | 3.95 | <.001* | 0.024 |
| Male | (Intercept) | 4.13 | 0.08 | 3.97 | 4.28 | 51.77 | <.001* | |
| | | 0.00013 | 0.00007 | -0.00001 | 0.00027 | 1.81 | .075 | 0.005 |

*Note.* * $p < .05$

***Figure 4.7 Scatterplot with Regression Line***

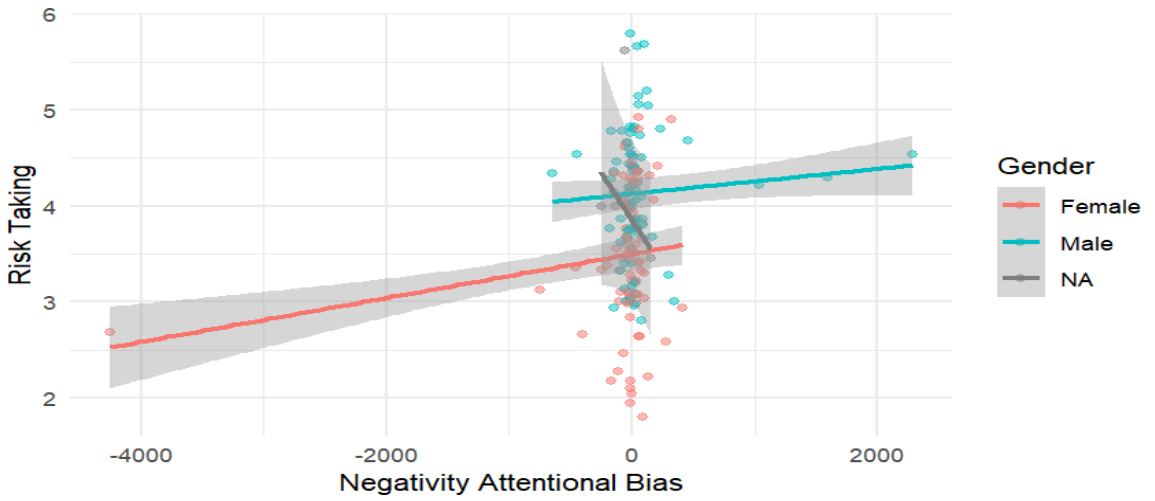

***Table 4.4 Regression analysis between Subtypes of Adverse Childhood Experiences (ACEs) and Risk- Taking in Indian Young Adults***

| | | | CI | | | |
|---|---|---|---|---|---|---|
| **Predictor** | **Beta** | ***SE*** | **LL** | **UL** | ***t*** | ***p*** |
| (Intercept) | 3.24 | 0.20 | 3.33 | 4.43 | 15.9 | <.001* |
| Physical Abuse | 0.05 | 0.10 | -0.38 | 0.17 | 0.52 | .607 |
| Emotional Abuse | -0.03 | 0.17 | -0.28 | 0.58 | -0.16 | .870 |
| Sexual Abuse | 0.06 | 0.06 | -0.06 | 0.30 | 1.05 | .294 |
| Emotional Neglect | 0.10 | 0.10 | -0.18 | -.39 | 0.98 | .329 |
| Physical Neglect | -0.03 | 0.10 | -0.25 | 0.32 | -0.33 | .743 |
| Household Dysfunction | -0.03 | 0.03 | -0.16 | 0.05 | -0.83 | .409 |
| Peer Violence | 0.23 | 0.07 | -0.27 | 0.32 | 3.00 | .003* |
| Community Violence | 0.10 | 0.04 | -0.11 | 0.21 | 2.19 | .030* |
| $_R2$ | 0.13 | | | | | |

*Note. * p< .05*

## DISCUSSION

The current research attempted to predict risk-taking through negativity attentional bias in Indian young adults with adverse childhood experiences (ACEs). The data included 164 participants from Indian subcontinent between the ages 18 and 25 years. Table 1 indicates descriptive statistics of Negativity Attentional Bias (Neg_bias), Risk-Taking (Risk_taking) and Adverse Childhood Experiences (ACEIQ), showing non-parametric distribution. The outliers in the data were retained as they were genuine responses. To account for outliers, Spearman correlation and M-estimator robust regression analyses were conducted. Findings revealed that negativity attentional bias as a significant predictor of risk- taking. However, no significant associations were found between this bias and either risk- taking or severity of ACEs. On the other hand, risk-taking was significantly associated with severity of ACEs and specific types of ACEs were also found to predict risk-taking tendencies.

The first hypothesis proposed that there exists a significant relationship between severity of adverse childhood experiences (ACEs) and risk-taking in Indian young adults. The results (table 2) supported this hypothesis as the severity of ACEs were found to be significantly ($p<0.05$) and positively correlated with risk-taking, rejecting the null hypothesis. However, Spearman's $\rho$ (rho) value of 0.243 indicates a weak or moderate relationship.

Spearman's $\rho$ (rho) value of 0.420 at $p<.05$ shows significant moderate positive correlation for female participants and Spearman's $\rho$ (rho) value of 0.120 at $p=.300$ shows insignificant weak correlation for male participants. Figure 4 and figure 5 show a slight linear trend with data points slightly dispersed, suggesting a small but meaningful relationship. These findings reveal that overall greater exposure to ACEs, an individual's risk-taking tendency is likely to increase. Gender based correlations suggest that these findings are especially true for female participants. Birn et al. (2017) found that participants who were exposed to high level stress during their childhood engaged more in risky behaviours as adults. Their neuroimaging data revealed that such participants showed reduced activation in various brain areas when presented with cues that help in anticipating future rewards and losses. One explanation for this finding as given in the study was that high levels of stress exposure

could have impacted the development of mechanisms that aid in avoiding losses by considering the severity of the possible negative outcomes. Additionally, Abajobir et al. (2017) found that while childhood sexual abuse (CSA) remains a significant risk factor for both the genders, female participants who have experienced CSA are more likely to engage in risky sexual behaviours than male participants.

The second hypothesis proposed that there exists a significant relationship between negativity attentional bias and risk-taking in Indian young adults with adverse childhood experiences (ACEs). The results (table 2) did not support this hypothesis as the Spearman's $\rho$ (rho) value of 0.118 at p=.132 shows insignificant correlation. Gender based correlations for female participants with Spearman's $\rho$ (rho) value of 0.129 at p=.256 and for male participants with Spearman's $\rho$ (rho) value of 0.143 at p=.214 indicate insignificant correlations, failing to reject the null hypothesis.

The third hypothesis proposed that there exists a significant relationship between severity of adverse childhood experiences (ACEs) and negativity attentional bias in Indian young adults. The results (table 2) did not support this hypothesis as the Spearman's $\rho$ (rho) value of -0.028 at p=.718 shows highly insignificant correlation. Gender based correlations for female participants with Spearman's $\rho$ (rho) value of -0.074 at p=.514 and for male participants with Spearman's $\rho$ (rho) value of 0.051 at p=.657 indicate highly insignificant correlations, failing to reject the null hypothesis.

The fourth hypothesis proposed that negativity attentional bias significantly predicts risk-taking in Indian young adults with adverse childhood experiences (ACEs). The results (table 3) suggest that negativity attentional bias is a significant predictor of risk-taking with a small effect size ($\beta$= 0.00029 at p<.001), rejecting the null hypothesis. This indicated that while attentional biases towards negative emotional stimuli influence risk-taking tendencies, other factors likely contribute more to these tendencies. Gender differences were observed as well, with negativity attentional bias significantly predicting risk-taking in female participants ($\beta$= 0.00023 at p=.001) but not in male participants ($\beta$= 0.00013 at p=.075). Figure 7 suggests an overall weak positive treat with a slightly steeper slope for females (pink) as compared to males (blue) aligning with the scores. The wide spread of data points and overlapping confidence intervals reveal high variability and weak predictive power.

Although no direct studies have examined the link between negativity attentional bias and risk-taking in ACE affected individuals, research on related constructs provides valuable insights. Anderson (2015) found value-driven attentional capture to be positively associated with impulsiveness and more noticeable in adolescence, a phase characterised by increased risk-taking behaviours. Given, that risk-taking itself is often pleasurable and reinforcing, it is possible that risky behaviours capture more attention due to their rewarding nature, rather than being avoided due to potential negative outcomes. This interpretation is in line with evidence from several studies that show the tendency of individuals to engage in previously rewarding stimuli even though they are no longer adaptive (Watson et al., 2019).

Several other constructs like emotional dysregulation might show greater predictive power towards risk-taking as compared to negativity attentional bias. McLaughlin et al. (2015) found that maltreated adolescents show increased activity in several neural networks such as in amygdala, putamen and anterior insula, while processing negative stimuli as compared to neutral stimuli. Although, their ability to regulate responses to negative cues is similar to

that of non-maltreated adolescents, they rely heavily on brain regions associated with effortful control, suggesting greater cognitive effort to regulate heightened amygdala reactivity. Hence, engaging in risky behaviours may serve as a mechanism to alleviate the cognitive burden associated with heightened emotional and attentional regulation demands.

The fifth hypothesis proposed that specific types of adverse childhood experiences (ACEs) significantly predict risk-taking in Indian young adults. The results (table 4) suggest that specific types of ACEs significantly predict risk-taking with a small to moderate effect size ($\beta$=0.13 at $p<.001$), rejecting the null hypothesis. These findings highlight the role of peer violence ($\beta$ =.23 at p=.003) and community violence ($\beta$=.10 at p=.030) as significant predictors of risk-taking tendencies among Indian young adults. Other forms of ACEs, including physical abuse (p=.607), emotional abuse (p=.870), sexual abuse (p=.294), household dysfunction (p=.409), emotional (p=.329) and physical neglect (p=.743) did not significantly predict risk-taking behaviour. This adds to the existing evidence where late adolescents who experienced bullying in middle and high school were less likely to use condoms during their college years compared to those who were not involved in bullying, Among males, both bullies and victims had twice the odds of engaging in drunkenness in the past month and were three times more likely to pay for sex, with bullying victims also showing an increased likelihood of engaging in paid sexual encounters. Additionally, male students involved in cyberbullying, either as perpetrators or victims, were more likely to report smoking. In female bullying victims, the relationship with alcohol use was inconsistent, with a lower likelihood of lifetime alcohol abuse but a higher likelihood of recent drunkenness. Overall, emerging adults with a history of bullying victimization, were more prone to engaging in various sexual risk behaviours (Provenzano & Boroughs, 2021; Kritsotakis et al., 2017). A study conducted on Chinese adolescents found a positive correlation between exposure to community violence and Internet Gaming Disorder (IGD). This was likely influenced by associations with risk-taking peer groups, implying that adolescents exposed to community violence may choose peers who engage in risky behaviours which in turn increases their likelihood of developing IGD (Liang et al., 2019).

***Limitations and Future Directions of the Research***

This study provides insights into the relationship between adverse childhood experiences (ACEs), negativity attentional bias and risk-taking in Indian young adults. However, a few limitations must be acknowledged and future research directions should address these gaps to enhance the understanding of these relationships.

Methodological limitations pertaining to the measurement of negativity attentional bias using the dot-probe task primarily assessed momentary attentional shifts and does not fully capture the real-word patterns of attentional biases. Future research can consider incorporating additional methods like neuroimaging techniques for a comprehensive understanding. Moreover, the self-report tool used for risk-taking can be supplemented with behavioural tasks to reduce self-reported biases.

Schwager & Rothermund (2013) experimentally created a positivity bias dot-probe task, which led to greater risk seeking behaviours compared to a negativity bias task.

Participants with a positivity bias also placed greater stakes on risky decisions, ignoring potential losses. This raises a possibility that individuals with a negativity buas maybe be more risk-averse rather than risk-seeking. Hence, various other psychological factors such as

risk-aversion, sensation-seeking and reinforcement learning patterns should be studied to explore possible predictors of risk-taking.

A major limitation of this study is concerned with the overall non-representative distribution. The gender differences in correlational analyses do not account for the category "Others" which included agender and non-binary participants (N=7). This was not explored separately due to small sample size and hence the findings can not to generalised to these gender identities. Additionally, some forms of subtypes in adverse childhood experiences (ACEs) may have been underrepresented, potentially affecting the ability to detect significant associations of various ACEs to risk-taking tendencies. Future research can aim to recruit a larger and diverse sample in order to better understand the associations.

Lastly, the study utilized a cross-sectional design, which limits the ability to establish causal relationships between the variables. To better understand the predictive and mediating roles, experimental and longitudinal research designs could be employed for comprehensive insights.

***Implications***

The findings of this study offer valuable insights for individual-specific interventions and risk prevention programs. Professionals working with individuals who have experiences peer and/or community violence can utilize these findings to facilitate early identification and timely intervention, thereby reducing future risk-taking behaviours. Additionally, gender- sensitive therapeutic approaches can be developed to address the distinct vulnerabilities of different groups, ensuring more effective support.

For researchers and academicians, this study provides a foundation for expanding the theoretical understanding of risk-taking in individuals with adverse childhood experiences (ACEs). Future research can build upon these findings by identifying stronger predictors through methodological advancements. Moreover, exploring gender and culture-based differences can enhance generalizability and promote more inclusive treatment strategies.

This study also contributes to addressing gaps in mental health discourse, particularly in India, by emphasising the need for trauma-informed policies across various domains. Given the observed link between community violence and risk-taking, policy initiatives should prioritize community-based risk-reduction strategies. Finally, these findings highlight the urgency of developing a comprehensive mental health policy tailored to Indian young adults with ACEs, ensuring improved mental health outcomes and long-term well-being.

## CONCLUSION

The findings of the study revealed (i) a moderate positive and statistically significant relationship between severity of adverse childhood experiences (ACEs) and risk-taking in Indian young adults; (ii) that negativity attentional bias serves as a weak yet significant predictor of risk-taking in Indian young adults with adverse childhood experiences (ACEs); and (iii) that exposure to peer and community violence is a significant predictor risk-taking behaviour. These results highlight the complex interplay between childhood adversity, cognitive biases, and environmental influences in shaping risk-taking tendencies.

## REFERENCES


Abajobir, A. A., Kisely, S., Maravilla, J. C., Williams, G., & Najman, J. M. (2017). Gender differences in the association between childhood sexual abuse and risky sexual behaviours: A systematic review and meta-analysis. *Child Abuse & Neglect*, *63*, 249 –260. https://doi.org/10.1016/j.chiabu.2016.11.023

Aces aware. (2025). *ACE Fundamentals*. ACEs Aware. https://www.acesaware.org/ace-fundamentals/

*Adverse Childhood Experiences (ACEs)*. (2021, December 26). PsychDB. https://www.psychdb.com/teaching/childhood-trauma-aces

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Anderson, B. A. (2015). The attention habit: how reward learning shapes attentional selection.

*Annals of the New York Academy of Sciences*, *1369*(1), 24–39. https://doi.org/10.1111/nyas.12957

Araki, T., Kasai, K., Yamasue, H., Kato, N., Kudo, N., Ohtani, T., Nakagome, K., Kirihara, K., Yamada, H., Abe, O., & Iwanami, A. (2005). Association between lower P300 amplitude and smaller anterior cingulate cortex volume in patients with posttraumatic stress disorder: a study of victims of Tokyo subway sarin attack. *NeuroImage*, *25*(1), 43–50. https://doi.org/10.1016/j.neuroimage.2004.11.039

Arnett, J. J. (2007). Emerging Adulthood: What Is It, and What Is It Good For? *Child Development Perspectives*, *1*(2), 68–73. https://doi.org/10.1111/j.1750-8606.2007.00016.x

Babad, S., Zwilling, A., Carson, K. W., Fairchild, V., Razak, S., Robinson, G., & Nikulina, V. (2019). Risk-Taking Propensity and Sensation Seeking in Survivors of Adverse Childhood Experiences. *Journal of Interpersonal Violence*, *36*(19-20), NP10670–NP10687. https://doi.org/10.1177/0886260519876035

Baldwin Lab, McGill University. (n.d.). *Online dot probe task demonstration*. McGill University. https://baldwinlab.mcgill.ca/labmaterials/bbc/dotprobe/onlinedotprobe.html

Balodis, I. M., Kober, H., Worhunsky, P. D., Stevens, M. C., Pearlson, G. D., & Potenza, M. N. (2012). Diminished Frontostriatal Activity During Processing of Monetary Rewards and Losses in Pathological Gambling. *Biological Psychiatry*, *71*(8), 749–757. https://doi.org/10.1016/j.biopsych.2012.01.006

Bellan, V., Gilpin, H. R., Stanton, T. R., Newport, R., Gallace, A., & Moseley, G. L. (2015). Untangling visual and proprioceptive contributions to hand localisation over time. *Experimental Brain Research*, *233*(6), 1689–1701. https://doi.org/10.1007/s00221-015- 4242-8

Bick, J., & Nelson, C. A. (2015). Early adverse experiences and the developing brain. *Neuropsychopharmacology*, *41*(1), 177–196. https://doi.org/10.1038/npp.2015.252

Birn, R. M., Roeber, B. J., & Pollak, S. D. (2017). Early childhood stress exposure, reward pathways, and adult decision making. *Proceedings of the National Academy of Sciences*, *114*(51), 13549–13554. https://doi.org/10.1073/pnas.1708791114

Blais, A.-R., & Weber, E. U. (2006a). A Domain-Specific Risk-Taking (DOSPERT) scale for adult populations. *Judgment and Decision Making*, *1*(1), 33–47. https://doi.org/10.1017/s1930297500000334

Boecker, R., Holz, N. E., Buchmann, A. F., Blomeyer, D., Plichta, M. M., Wolf, I., Baumeister, S., Meyer-Lindenberg, A., Banaschewski, T., Brandeis, D., & Laucht, M. (2014). Impact of Early Life Adversity on Reward Processing in Young Adults:

EEG-fMRI Results from a Prospective Study over 25 Years. *PLoS ONE*, *9*(8), e1041 85. https://doi.org/10.1371/journal.pone.0104185

Boyer, T. (2006). The development of risk-taking: A multi-perspective review. *Developmental Review*, *26*(3), 291–345. https://doi.org/10.1016/j.dr.2006.05.002

Brady, S. S. (2006). Lifetime Community Violence Exposure and Health Risk Behavior among Young Adults in College. *Journal of Adolescent Health*, *39*(4), 610–613. https://doi.org/10.1016/j.jadohealth.2006.03.007

Castillo, M. (2020). Negative Childhood Experiences and Risk Aversion: Evidence from Children Exposed to Domestic Violence. *SSRN Electronic Journal*. https://doi.org/1 0.2139/ssrn.3620635

Chai, J., Qu, W., Sun, X., Zhang, K., & Ge, Y. (2016). Negativity Bias in Dangerous Drivers. *PLOS ONE*, *11*(1), e0147083. https://doi.org/10.1371/journal.pone.0147083

Choi, J.-S., Shin, Y.-C., Jung, W. H., Jang, J. H., Kang, D.-H., Choi, C.-H., Choi, S.-W., Lee, J.-Y.,Hwang, J. Y., & Kwon, J. S. (2012). Altered Brain Activity during Reward Anticipation in Pathological Gambling and Obsessive-Compulsive Disorder. *PLoS ONE*, *7*(9), e45938. https://doi.org/10.1371/journal.pone.0045938

Fani, N., Bradley-Davino, B., J. Ressler, K., & B. McClure-Tone, E. (2011). Home Cognitive Therapy and Research Article Attention Bias in Adult Survivors of Childhood Maltreatment with and without Posttraumatic Stress Disorder. *Cogn Ther Res 35*, 57–67. https://doi.org/10.1007/s10608-010-9294-2

Frey, R., Pedroni, A., Mata, R., Rieskamp, J., & Hertwig, R. (2017). Risk preference shares the psychometric structure of major psychological traits. *Science Advances*, *3*(10), e1701381. https://doi.org/10.1126/sciadv.1701381

Hannan, S. M., Orcutt, H. K., Miron, L. R., & Thompson, K. L. (2015). Childhood Sexual Abuse and Later Alcohol-Related Problems: Investigating the Roles of Revictimization, PTSD, and Drinking Motivations Among College Women. *Journal of Interpersonal Violence*, *32*(14), 2118–2138. https://doi.org/10.1177/0886260515 591276

Harms, M. B., Shannon Bowen, K. E., Hanson, J. L., & Pollak, S. D. (2017). Instrumental learning and cognitive flexibility processes are impaired in children exposed to early life stress. *Developmental Science*, *21*(4), e12596. https://doi.org/10.1111/desc.12596

Hart, H., & Rubia, K. (2012). Neuroimaging of child abuse: a critical review. *Frontiers in Human Neuroscience*, *6*(52). https://doi.org/10.3389/fnhum.2012.00052

Harter, C. L., & Harter, J. F. R. (2021). The Link Between Adverse Childhood Experiences and Financial Security in Adulthood. *Journal of Family and Economic Issues*, *43*(4). https://doi.org/10.1007/s10834-021-09796-y

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, *47*(2), 263–292. https://doi.org/10.2307/1914185

Kerig, P. K. (2019). Linking childhood trauma exposure to adolescent justice involvement: The concept of posttraumatic risk-seeking. *Clinical Psychology: Science and Practice*, *26*(3). https://doi.org/10.1111/cpsp.12280

Kim, Y.-I., & Lee, J. (2014). The long-run impact of a traumatic experience on risk aversion. *Journal of Economic Behavior & Organization*, *108*, 174–186. https://doi. org/10.1016/j.jebo.2014.09.009

Kritsotakis, G., Papanikolaou, M., Androulakis, E., & Philalithis, A. E. (2017). Associations of Bullying and Cyberbullying with Substance Use and Sexual Risk Taking in Young Adults. *Journal of Nursing Scholarship*, *49*(4), 360–370. https://doi.org/10.11 11/jnu.12299

Lakshman, M., Murphy, L., Mekawi, Y., Carter, S., Briscione, M., Bradley, B., Tone, E. B., Norrholm, S. D., Jovanovic, T., & Powers, A. (2020). Attention bias towards threat in African American children exposed to early life trauma. *Behavioural Brain Research*, *383*, 112513. https://doi.org/10.1016/j.bbr.2020.112513

Letkiewicz, A. M., Silton, R. L., Mimnaugh, K. J., Miller, G. A., Heller, W., Fisher, J., & Sass, S. M. (2020). Childhood abuse history and attention bias in adults. *Psychophysiology*, *57*(10). https://doi.org/10.1111/psyp.13627

Liang, Q., Yu, C., Chen, Q., Xie, X., Wu, H., Xing, J., Huang, S., & Dou, K. (2019). Exposure to Community Violence, Affiliations with Risk-Taking Peer Groups, and Internet Gaming Disorder Among Chinese Adolescents: The Moderating Role of Parental Monitoring. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.02074

MacIntyre, E., Pinto, E., Mouatt, B., Henry, M. L., Lamb, C., Braithwaite, F. A., Meulders, A., & Stanton, T. R. (2024). The influence of threat on visuospatial perception, affordances, and protective behaviour: A systematic review and meta-analysis. *Clinical Psychology Review*, *112*, 102449–102449. https://doi.org/10.1016/j.cpr.2024.102449

Majid, M., Ab Rahman, A., & Taib, F. (2023). Adverse Childhood Experiences and Health Risk Behaviours among the Undergraduate Health Campus Students. *Malaysian Journal of Medical Sciences*, *30*(1), 152–161. https://doi.org/10.21315/mjms2023.30.1.13

Maurya, C., & Maurya, P. (2023). Adverse childhood experiences and health risk behaviors among adolescents and young adults: evidence from India. *BMC Public Health*, *23*(1). https://doi.org/10.1186/s12889-023-15416-1

McLaughlin, K. A., Peverill, M., Gold, A. L., Alves, S., & Sheridan, M. A. (2015). Child Maltreatment and Neural Systems Underlying Emotion Regulation. *Journal of the American Academy of Child & Adolescent Psychiatry*, *54*(9), 753–762. https://doi.org/10.1016/j.jaac.2015.06.010

Musa, S., Peek-Asa, C., Jovanović, N., & Selimović, E. (2018). Association of adverse childhood experiences and health risk behaviors among young adults visiting a regional primary healthcare center, Federation of Bosnia and Herzegovina. *PLOS ONE*, *13*(3), e0194439. https://doi.org/10.1371/journal.pone.0194439

Naidich, T. P., Tang, C. Y., Ng, J. C., & Delman, B. N. (2013). Surface Anatomy of the Cerebrum. In *Imaging of the Brain* (pp. 127–153). Elsevier Health Sciences.

Newport, R., & Gilpin, H. R. (2011). Multisensory disintegration and the disappearing hand trick. *Current Biology*, *21*(19), R804–R805. https://doi.org/10.1016/j.cub.2011.08.044

Numssen, O., Bzdok, D., & Hartwigsen, G. (2021). Functional specialization within the inferior parietal lobes across cognitive domains. *ELife*, *10*. https://doi.org/10.7554/elife.63591

Peterson, S. (2017, December 8). *Community Violence*. The National Child Traumatic Stress Network. https://www.nctsn.org/what-is-child-trauma/trauma-types/community-violence

Provenzano, D. A., & Boroughs, M. S. (2021). Past Bullying Victimization Experiences and Current Sexual Risk Taking among Emerging Adults. *The Journal of Sex Research*, 1–9. https://doi.org/10.1080/00224499.2021.2005761

R Core Team (2024). *R: A Language and environment for statistical computing*. (Version 4.4) [Computer software]. Retrieved from https://cran.r-project.org. (R packages retrieved from CRAN snapshot 2024-08-07).

Roalf, D. R., Mitchell, S. H., Harbaugh, W. T., & Janowsky, J. S. (2011). Risk, Reward, and Economic Decision Making in Aging. *The Journals of Gerontology: Series B*, *67B*(3), 289–298. https://doi.org/10.1093/geronb/gbr099

Ross, D. Bruce., Coambs, E., & Johnson, E. (2022). Trauma of the Past: The Impact of Adverse Childhood Experiences on Adult Attachment, Money Beliefs and Behaviors , and Financial Transparency. *Journal of Financial Therapy*, *13*(1). https://doi.org/10.4148/1944-9771.1280

Santelices, M.-P., Velasco-Hodgson, M.-C., Ferreccio, C., Undurraga, C., & Carvajal-Araneda, K. (2025). The Psychometric Properties of the ACE-IQ Questionnaire's Binary and Frequency Scoring Methods in a Chilean Community Sample. *Children*, *12*(3), 340. https://doi.org/10.3390/children12030340

Schwager, S., & Rothermund, K. (2013). Motivation and affective processing biases in risky decision making: A counter-regulation account. *Journal of Economic Psychology*, *38*, 111–126. https://doi.org/10.1016/j.joep.2012.08.005

Shou, Y., & Olney, J. (2023). Assessing a domain-specific risk-taking construct: A meta-analysis of reliability of the DOSPERT scale. *Judgment and Decision Making*, *15*(1).

Shrout, P. E., & Lane, S. P. (2012). Reliability. *American Psychological Association EBooks*, *1*, 643–660. https://doi.org/10.1037/13619-034

Smith, K. E., Xu, Y. (Lillian), & Pollak, S. D. (2025). How childhood adversity affects components of decision making. *Neuroscience & Biobehavioral Reviews*, *169*. https://doi.org/10.1016/j.neubiorev.2025.106027

Steinberg, L. (2008). A social neuroscience perspective on adolescent risk-taking. *Developmental Review*, *28*(1), 78–106.

Swingen, J. K. (2020). *Psychometric Developments of the ACE-IQ: Understanding the Trauma History of Latine Immigrants*.

The decision lab. (2021). *Attentional Bias*. The Decision Lab. https://thedecisionlab.com/biases/attentional-bias

The jamovi project (2024). *jamovi*. (Version 2.6) [Computer Software]. Retrieved from https://www.jamovi.org.

Trapp, W., Kalzendorf, C., Baum, C., Hajak, G., & Lautenbacher, S. (2018). Attentional biases in patients suffering from unipolar depression: results of a dot probe task investigation. *Psychiatry Research*, *261*, 325–331. https://doi.org/10.1016/j.psychres.2018.01.005

Trivedi, G. Y., Pillai, N., & Trivedi, R. G. (2021). Adverse Childhood Experiences & mental health – the urgent need for public health intervention in India. *Journal of Preventive Medicine and Hygiene*, *62*(3), E728–E728. https://doi.org/10.15167/2421-4248/jpmh2021.62.3.1785

Vaish, A., Grossmann, T., & Woodward, A. (2008). Not all emotions are created equal: The negativity bias in social-emotional development. *Psychological Bulletin*, *134*(3), 383–403. https://doi.org/10.1037/0033-2909.134.3.383

Walsh, K., Latzman, N. E., & Latzman, R. D. (2014). Pathway From Child Sexual and Physical Abuse to Risky Sex Among Emerging Adults: The Role of Trauma-Related Intrusions and Alcohol Problems. *Journal of Adolescent Health*, *54*(4), 442–448. https://doi.org/10.1016/j.jadohealth.2013.09.020

Watson, P., Pearson, D., Wiers, R. W., & Le Pelley, M. E. (2019). Prioritizing pleasure and pain: attentional capture by reward-related and punishment-related stimuli. *Current Opinion in Behavioral Sciences*, *26*, 107–113. https://doi.org/10.1016/j.cobeha.2018.12.002

Wenzel, M., Althen, H., Veeh, J., & Reif, A. (2022). Euthymic patients with predominantly manic polarity avoid happy faces in a dot probe task. *International Journal of Bipolar Disorders*, *10*(1). https://doi.org/10.1186/s40345-022-00262-8

World Health Organization. (2020, January 28). *Adverse Childhood Experiences International Questionnaire (ACE-IQ)*. www.who.int. https://www.who.int/publications/m/item/adverse- childhood-experiences-international-questionnaire-(ace-iq)

Yilmaz Balban, M., Cafaro, E., Saue-Fletcher, L., Washington, M. J., Bijanzadeh, M., Lee, A. M., Chang, E. F., & Huberman, A. D. (2021). Human Responses to Visually Evoked Threat. *Current Biology*, *31*(3), 601-612.e3. https://doi.org/10.1016/j.cub.2020.11.035

***Acknowledgment***

The authors extend sincere appreciation to Amity University, Noida for providing support in terms of academic resources and infrastructure in the successful completion of this research.

***Conflict of Interest***

The author(s) declared no conflict of interest.

***How to cite this article:*** Nair, S. & Hassan, Z. (2025). Eyes on the Edge: Role of Negativity Attentional Bias in Risk- Taking Among Indian Young Adults Exposed to Adverse Childhood Experiences. *International Journal of Indian Psychology*, *13*(2)*,* 4723-4743. DIP:18.01.418.20251302, DOI:10.25215/1302.418