Risk Taking in Adolescents and Relevant Factors

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Abstract. Adolescence is a second sensitive period and an important stage for a person to become independent from the family and form self-awareness. Adolescents at this stage of development tend to explore different areas when establishing independence and autonomy. Due to hormonal changes, adolescents may increase the number of risky behaviors, which may have positive or negative effects. This article will examine the key factors that influence adolescent risk-taking behaviors from three distinct perspectives. Firstly, the article will examine the influence of the adolescent's surrounding environment on their risk-taking behavior. It will delve into how the environment shapes the adolescent's personality and if blind obedience leads to risk-taking behavior. Secondly, it will delve into the impact of whether parents encourage their children to develop independent personalities and their role in resolving parent-child conflicts. Lastly, it will delve into how the adolescent's internal patterns shape his or her risk-taking behavior. For example, teens who have a great sense of self-worth are less prone to be swayed by and mindlessly follow their classmates. Low personal self-control is associated with the engagement in risky behavior of adolescents. Future research on adolescent risk-taking behavior should be longitudinal, with more factors integrated and studied at the same time. Moreover, future research should include adolescents growing up in different cultural environments, rather than studying one of them alone.

Keywords: adolescents; risk taking; environmental factors; familial circumstances; self-determination.

1. Introduction

Adolescence is a critical period for forming a person's self-identity as well as for determining the future direction of his or her life. As a susceptible developmental stage, adolescence might result in increased risk-taking and experimentation due to physical and hormonal changes. Because in comparison to other age groups, it is much more common for them to participate in risky behaviors as a proses of establishing their independence and autonomy. Impulsive risk-taking by adolescents may lead to irreversible consequences taking risks encompasses behaviors that, at the same time, involve the chance of a beneficial outcome as well as possible negative or harmful consequences. Teenagers who engage in high-risk activities are more likely to drop out of school early, become victims of crime or commit it themselves, and have trouble finding work. Therefore, the aim of the present study was to examine factors related to risk-taking behavior among adolescents. This study aims to understand the reasons behind adolescents' engagement in risky behaviors, and to provide effective assistance in the subsequent development of relevant intervention and prevention programs [1-2].

Different theories regarding adolescence are reviewed, to first have a better understanding of this period in general. In the study by Sarah and Kathryn, the time between the start of puberty and achieving some degree of relative self-sufficiency is commonly used to characterize adolescence. As a result, a biological event typically marks the start of adolescence, whereas social factors frequently define its end. Compared to other animals, adolescence in human is especially long-lasting. The ability to integrate other people's perspectives and intents when considering fairness is still improving. The rewarding nature of peer connections during adolescence may have an impact on social decision-making processes. Online social cognitive skills develop throughout adolescence. There are numerous ways in which the social contexts of adolescents and adults diverge. Around puberty, students in many school systems go from elementary to secondary school, which might put them in new

environments with different peers, in a different learning framework, and at the bottom of the age hierarchy.

Processing speed, working memory, delay discounting, voluntary response suppression, and future planning are among the cognitive skills that develop throughout adolescence. Adolescent social cognitive processing during adolescences is likely influenced by and affected by developmental advances in executive functioning. Early adolescence (10 to 13 years old) is a critical time for successful emotion regulation. Situational elements of the emotional stimuli and the adolescent's sensitivity to rejection play a role in this. When exposed to social affective stimuli as opposed to nonsocial affective stimuli, young adolescents found it more difficult to control their emotions than older adolescents and adults (14 to 23 years old). Adolescence is portrayed in this review as a time of increased sensitivity to sociocultural cues in the environment, based on research on adolescent social cognitive development. The social circumstances and reasons that may impact behavior during adolescence are covered by this paradigm. Since they affect most adolescent-typical actions, social environment and social acceptance are crucial during adolescence [1].

The brain is ongoing development as well during adolescence. In the study by Casey et al., there is still disagreement over the idea that adolescence is a period of "storm and stress." The elevated prevalence of affective illnesses, suicide, and unintentional deaths during this time of life have been theorized to be explained by intense and frequent unpleasant emotion. The maturation of higher cognitive capacities and goal-oriented behavior is thought to be significantly influenced by the prefrontal cortical growth. When compared to adults, these studies collectively demonstrate that children and adolescence use separate but frequently larger, more diffuse prefrontal regions when completing these tasks. As people age, the activity pattern in brain regions that are crucial for task performance—that is, those that relate to cognitive function—becomes more focused or refined, whereas the activity in regions that are not related to task performance decreases. Overall, these studies offer a converging methodologies approach to understanding the wildly fluctuating stress and turbulence of adolescence [2].

In short, adolescent changes in the social environment may interact with the enhancement of executive function and high social sensitivity, thereby influencing numerous behaviors of adolescents. Theories regarding adolescents' brain development highlight a reward-regulatory neural circuit imbalance. From this, it indicates that research on adolescents continues to concentrate on risk-taking, as the understanding of risk-taking in adolescents remains incomplete. This article will review the latest research progress on risk-taking and examine the influence from their surrounding environment, the role of parents, and the effects of individual factors.

2. Environmental Factors in Risk Taking during Adolescents

2.1. The Role of Surroundings and Peer

Adolescence is a special period in terms of risk-taking. However, these risky behaviors do not occur out of thin air. The surrounding environment likely influences these risky behaviors. They need to engage in some risky behaviors to complete the "task" of breaking away from their parents and becoming independent personalities. Therefore, the environment around teenagers at this stage will greatly affect the form of risky behavior they will exhibit. In the study by Elizabeth et al., they examined whether parental supervision and environmental risk had a direct impact on teenagers' behavioral intention, which predicts adolescent risk behaviors, in the proposed model. The students' ages ranged from 9 to 13 years. Teenagers rated their parents' supervision, adolescent disclosure about risk-taking activities. Assessment of their parents' supervision in risky behavior, the three areas included delinquency, substance use, and sexual risks. The subscales were used to evaluate a youth's engagement in risky behaviors over the previous six months. Self-report environmental risk factors were measured with a 12-item scale, to finding out how often students think they see violence, sexual activity, drinking, and drug usage in their surroundings.

Parental monitoring significantly reduced behavioral intentions and risky behavior, even though environmental risk predicted them. Risky adolescent conduct correlated strongly with behavioral goals. It indicates the strong influence of social and environmental risk factors on teenagers' behavior, intentions, and risk-taking behaviors. Environmental risk factors exhibited a direct positive effect on teenage behavioral intentions and risk behaviors, while parental supervision showed a direct negative (protective) effect on both in the structural equation model. Therefore, parental supervision and environmental risk variables had a significant impact on early adolescent risk-taking behaviors [3].

Peer pressure is one of teenagers' most significant environmental influences, because teens spend most of their time with peers. At the same time, they are all experiencing a period of personality independence, breaking away from their parents to grow into an independent person and exploring the world independently. In the study by Osmont et al., they investigate how mid-adolescent risk-taking behavior is affected by their peers' cautious versus hazardous decisions in both informed and ignorant circumstances. To quantify risk-taking behavior in this setting, they modified the Balloon Analogue Risk Task (BART) based on peers' influence (control, cautious and risky decisions made by peers, and informed versus uninformed risk information). A French secondary school recruited 132 eighth graders (64 men) aged 13–15. Participants were randomly assigned six experimental circumstances—two information levels and three social contexts. Sex distributions were similar across circumstances, according to statistical studies. A novel computerized decision-making task that was finished by the participants. It was modified to alter the degree of risk probability knowledge (i.e., informed, uninformed), as well as social influence (i.e., control, peers' cautious and risky decisions). There are two conditions regarding the degree of risk: informed (Participants were told that the resistance level of the balloons was estimated by a gauge, and they had to modify their decisions accordingly) and uninformed (The gauge was covered in gray). Plus, there are two conditions regarding social influence: cautious (depiction of cautious decisions made by peers) and risky (display of peers' dangerous decision-making). This study found three primary findings. First, teenagers' cautious friends had a big influence on them, which reduced their willingness to take risks when a low or moderate risk would have been better. Second, witnessing peers make risky decisions made teens take more risks, but only in low-risk situations like high resistance balloons. Third, teens relied on their peers' earlier choices, especially on uninformed BART but not knowledgeable BART. Finally, peers' cautious and risky choices boosted positive feelings compared to the control condition [4].

As indicated by above studies, Peers have a great influence on self-esteem, is the result of an individual's self-evaluation of his or her social role. self-esteem is likely to apply a role in their interactions with peers. In the study by Lumei et al., peer pressure makes teenagers more willing to take risks. Since those with low self-esteem are potentially more vulnerable to peer influence, it is unclear if the effect of peer presence is mitigated by personal traits like self-esteem. A risk-taking activity was completed by a final sample of 140 teenage students, aged 14–18 (61 girls), who were split into two groups based on their self-esteem scores: low self-esteem and high self-esteem. The risk-taking task may be completed alone or with the assistance of a same-sex peer. This current study surveyed participants' risk perception of running a yellow traffic light with one item. At the same time, they also assessed risk-taking behavior among adolescents. Risk-taking was measured with a simple driving game. The top of the screen displays an 8-minute-and-30-second countdown clock. The findings showed that while peer presence had no effect on teenagers with high self-esteem, it did enhance risk-taking in those with poor self-esteem. The results have practical implications for preventing and intervening in teenage risk-taking by raising their self-esteem. They also contribute to people's understanding of the moderating impact of the self and peer influence on risk-taking in adolescents [5].

Conversely, peers can more easily influence teenagers with lower self-esteem. In the study by Helene et al., they investigated the role of social and cognitive variables in adolescent risk-taking. Involved were 491 Midwesterner high school pupils. The average ages were comparable, at 15.3 and 15.5, respectively. Risk behaviors, risk assessments, sentiments of invulnerability, thoughts of

consequences, and impressions of their closest friend's dangerous actions were all covered in the questionnaires. Increased perceived invulnerability is linked to risk-taking behaviors in adolescents. Despite explaining only 10% of the variance, adolescent beliefs of invulnerability were positively linked with risk behaviors.

Studies also show that some people feel less susceptible to unfavorable experiences. Teens' risk assessment may depend on whether they feel invincible. Invulnerable youths' feelings predict delinquency and drug use differently. Therefore, risk evaluations and consequence consideration may explain risk-taking behaviors. Although these three conceptions (risk judgment, consequences consideration, and perception of invulnerability) overlap, they are distinct enough to be studied separately. These results showed that risk behaviors were positively linked with perceived best friends and individual awareness of potential consequences for one subgroup. For a subset, the relationships between closest friends' risk-taking, consideration of the repercussions, and personal risk-taking were partially mediated by cognitive factors. The largest contributor to variance was the consideration of personal repercussions; risk assessments and perceptions of invulnerability contributed less variance. When it came to taking risks, social and cognitive elements were involved [6].

2.2. The Role of Parents

Whether parents support adolescents in developing independent personalities also largely affects the intensity of adolescent risk-taking behavior. Parents' lack of support for independent behavior tends to make adolescents more rebellious and riskier. Therefore, the relationship between risk-taking and parent-adolescent conflict is also one of the important factors affecting adolescent risk-taking behavior. In the study by Sarah et al., adolescence is a time of increased risk-taking behavior, which could have detrimental effects compared to childhood and maturity. However, the relationship between risk-taking and parent-adolescent conflict is uncertain. They studied this association using a multi-method experimental approach. They recruited ages 14 to 17, along with their parents. About 50% of the parent research sample was African American, and 54% was male. In order to evaluate dyadic conflict and determine conflict topics, parents and teenagers participated in separate structured interviews. Following this, each dyad was informed of the topic they had been randomly assigned to discuss for five minutes, either as a conflict topic or as a "control" topic (such as planning their ideal vacation). Adolescents conducted a performance-based risk-taking challenge just after the conversation task. Immediately following the conversation task, teenagers performed a performance-based risk-taking propensity index based on real-world risk behaviors. The entire time, study participants wore heart rate (HR) monitors. Finally, the participant's parent or other caregiver filled out a demographic survey. The results demonstrated that there is no relationship between teenage risk-taking and parent-adolescent conflict. However, there was an intriguing conditional indirect effect: in teens who were acting out during the discussion task, lower heart rate variability (HRV), which is a sign of poorer ability to regulate, was the only factor mediating the relationship between conflict and risk-taking tendency [7].

The socioeconomic status of adolescents' families can determine available educational resources. For example, most adolescents from wealthy families will not steal. Instead, they may go racing, gamble, or even take drugs. However, children from families with poor socioeconomic status are more likely to steal or rob. In the study by Brieant et al., this study investigated the possibility that changes in risk-taking behavior and socioeconomic status—which is defined as a composite of parental education and income-to-needs ratio—are mediated by cognitive control. The sample included 167 teens (53% male; Master = 14.07 years at Time 1) and their parents for four years of annual examinations. Parents reported socioeconomic factors. At times 1 to 4, teens took risks. On the questionnaire, teens are asked about risky behaviors like drug and alcohol usage and delinquency (fighting or stealing) from the past year. They completed cognitive control tasks using functional magnetic resonance imaging at periods 2 and 3. Lower SES was connected to lower behavioral (but not neurobiological) cognitive control, which increased risk-taking. Teens took chances constantly. Cognitive control markers influenced the long-term link between SES and adolescent risk-taking.

Identifying intervention targets for at-risk kids requires an understanding of the pathways via which SES may contribute to risk-taking outcomes in adolescence. More specifically, lower SES was connected to lower cognitive control, which predicted increased risk-taking. This independent effect was unique to behavioral cognitive control markers, not neural ones. Their findings suggest that socioeconomic hazards may impair cognitive regulation, leading to maladaptive adolescent behavior. At the time 2, Lower parental education and poverty can harm teens' cognitive control. This pattern complements past research showing that socioeconomic hardship might harm cognition. Change over time, Consistent with earlier findings, reduced BOLD response during the MSIT was linked to stronger cognitive control performance [8].

3. Relevant Individual Factors

In addition to the influence of external environment, whether their internal motivation play a role in their risky behavior as well is a question that needs to be explored. According to Joanna et al.'s study, teenagers are supposed to take greater chances than adults. The goal of the study that was presented was to ascertain if adolescents' propensity for taking risks stems from their high reward sensitivity and lack of cognitive control. They investigate if these variables' effects are more apparent in rewarding than in non-rewarding circumstances. The study included ninety teenagers (ages 13–16) and ninety-five young adults (ages 20–28). To gauge risk-taking, they employed a driving task in both paid and unrewarded scenarios. They also employed measures of impulsivity, cognitive control, and reward sensitivity. They also employed self-report measures of everyday risk-taking, reward sensitivity, and self-control to investigate if the effects seen for self-reports were similar to those seen for behavioral tasks. It is found that, independent of age or circumstance, impulsivity or cognitive control had no effect on risk-taking; rather, the more reward-sensitive teenagers (but not adults) were, the more they would take on in the rewarded condition of a driving task. At the self-report level, results showed that both adults and adolescents showed more regular risk-taking behavior the more reward sensitivity and the less self-control they possessed [9].

From the summary above, it can be inferred that risky behavior is an inevitable part of teenagers' growth process, including both external and internal factors. Numerous factors will influence teenagers' decisions to engage in positive or negative risky behavior. According to Joanna et al.'s study, it is found that while taking a risk has the potential to yield both favorable and unfavorable results, most researchers concentrated on the former. Duell and Steinberg have recently put forth a paradigm that makes clear the characteristics of positive risk-taking.

New measurements have been established, and research comparing positive and negative risk-taking has grown. The goal of the study that was presented was to determine whether the same or distinct characteristics predict positive and negative risk-taking, as well as how they differ or overlap. A total of 258 young adults and adolescents, ages 16 to 29, took part in the study. As potential indicators of both positive and negative risk-taking, they examined self-reported sensitivity to reward and punishment, self-control, tolerance to ambiguity, trait anxiety, and gender. Additionally, they referred to domain-specific risk-taking for both kinds of risk-taking. They discovered that taking positive risks, which are more common in the social sphere, are motivated by sensitivity to reward and tolerance to ambiguity. Negative risk-taking happens in all domains save social ones and is motivated by gender, sensitivity to reward, and (low) sensitivity to punishment. The findings show that people who seek social benefits choose to take good risks for personal growth and exploration, and they do so in a way that is socially acceptable. People who seek out rewards outside of established norms and are not deterred by extreme bad outcomes are the ones who choose to take negative risks [10].

4. Conclusion

Previous studies suggest that parental supervision and environmental risk factors significantly influence young adolescents' risk-taking behaviors. Peers' caution in situations make them less likely to take chances. Adolescents with great self-esteem are unaffected by their classmates' decisions, whereas those with poor self-esteem are more likely to take risks. Risk-taking behaviors in adolescents and parent-child conflict do not directly correlate in the parenting role. Instead, the only factor that mediates the relationship between the two is inadequate regulation. Cognitive control in adolescents may be hampered by low level of parental education and poverty. Adolescents are more likely to engage in risky activities if they have low self-control and great reward sensitivity.

The available literature alone examines the influence of familial circumstances, peer pressure and other environmental factors, on the tendency to take risks. Adolescents, however, nearly always encounter these risk-taking inducing elements simultaneously. As a result, future studies on teenage risk-taking behavior must be more integrated and concentrate on the ways in which various factors interact with one another to influence teenagers' risk-taking behaviors. However, while existing studies concentrate on the risk-taking behavior of adolescents from similar cultural backgrounds, the presentation of adolescent risk-taking behavior can vary across different cultures. Future studies should conduct longitudinal research on adolescent risk-taking behavior to better understand the impact of various factors on adolescents at different stages.

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