RISK-TAKING BEHAVIOR AND JUDGEMENT OF RISK: A DEVELOPMENTAL STUDY

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Abstract - Adolescents and young adults are more prone to rash behaviors, which have serious bearing on their own lives as well as that of others. In this study, adolescents and young adults were comparedon risk taking behavior and judgement of risk. The sample comprised of 37 male adolescents (16-17 years) and 37 young adults (20-21 years). Data was collected using an adapted version of Adolescent Risk-Taking Questionnaire to suit the requirements of the sample from Delhi and National Capital Region. Results revealed that the indulgence in risky behavior was less in adolescents than in young adults.However, given an opportunity in the future, adolescents indicated that they would like to indulge in risky behaviors more than young adults. Moreover, adolescents perceived a given behavior to be riskier than young adults. The major implication of the study issince young adults are prone to risky behaviors, they should be guided and supervised by all the stakeholders including parents, teachers, and policy makers.

Keywords - Risk-taking Behavior, Judgement of Risk, Adolescents, Young Adults.

I. INTRODUCTION

Grier (1980, 1981) stated that concept of risk has been a concern for human race from the earliest days of recorded history or may be even before that. Asipu in 3200 B.C. dealt with predicting risks and risk management. Their approach was to identify likely outcomes, such as profit or loss, success or failure on the various dimensions of the problems. "Code of Hammurabi" in 1950 B.C. has recordings of risk-analysis and risk management.

Concept of risk-taking is multi-dimensional and cannot be done justice to in one definition. Schwing and Albers (1980) defined risk as a compound measure of probability and magnitude of an adverse effect. Zuckerman (1979) referred to risk as an appraised likelihood of a negative outcome. Oppe (1988) referred to risk as an expected loss, the utility of which is calculated from the combination of all input components.Trimpop (1994) defines risk taking as "any consciously or non-consciously controlled behavior with a perceived uncertainty about its outcome, and/or about its possible benefits or costs for the physical, economic, or psycho-social well-being of oneself and others." Risk-taking behaviors can be distinguished from developmentally appropriate exploratory behavior by their potentially serious, long-term, and negative consequences. Some of them are defined by their age of onset, for example, sexual activity, driving a car, or drinking alcohol; but some other are risky regardless of age, such as, cocaine use or driving under the influence of alcohol.

Many developmental theorists (Baum & Locke, 2004; Boyer, 2006) view risk-taking as a necessary and important part of growing up process. Risk-taking behaviors may serve to fulfill many developmental needs of the adolescents, such as, autonomy, identity formation, sexual awareness and intimacy. According to Elkind (1994), adolescents have a reduced sense of vulnerability as they view themselves as reaching great heights of omnipotence. According to Sales and Irwin (2013) logical reasoning abilities mature by the age of 15 years. But the psychosocial capacities such as impulse control, emotional regulation, delay of gratification and resistance to peer influence, which facilitate moderate risk-taking, continue to mature well into young adulthood. Gardner and Steinberg (2005) studied 306 individuals in three age groups: adolescents (13-16 years), youth (18-22 years) and adults (24 and older). They found that the adolescents were more inclined to risky behaviors and risky decision making than adults. They further claimed that peer influence plays an important role in explaining risky behavior during adolescence. Byrnes, Miller, & Schafer (1999) in a meta-analytical review of 150 studies claimed that male participants are more likely to take risks than female participants.

Kahneman and Tversky (1979) defined prospect theory as a psychophysical theory of choice behavior that focuses on valuation of gains and losses relative to a shifting reference point. An important determinant of risk-taking is the decision makers reference point (i.e., loss vs. gain) at the time of choice.

Biological models have covered the role of factors such as genetics, neuroendocrine and other hormonal influences, and the timing of pubertal events (Graber, 2013). The disparity between prefrontal cortex and limbic system is the greatest during adolescence. Since, they support emotion and many other behavioral tendencies their role has been studied in risk-taking behavior too. This imbalance may favor behaviors driven by emotion and response to incentives over rational decision making.The onset of puberty is characterized by interest in sexuality, increased emotional reactivity and intensity, increased appetite, and increased sensation seeking (Crone & Dahl, 2012). Dahl (2004) further used the term "igniting passions" to represent the tendency of

young people to become passionate about their goals and the links between their goals and social identity. Sensation seeking also reaches its peak at the time of puberty, especially in males (Steinberg et al., 2008; Shulman, Harden &Chein, 2015).Elevated levels of testosterone have been associated with aggressive risk-taking in boys; in girls, elevated testosterone is associated with the tendency to affiliate with deviant peers (Vermeersch,T'Sjoen, Kaufman &Vincke, 2008). Both testosterone and estrogen are linked to elevated risk and pleasure.

Ecological theory (Bronfenbrenner, 2001) considers development of risk-taking behavior within the social and environmental context of the individual. The role of peer influences in adolescent risk-taking has emerged as one of the most important factors. Social learning theory also suggests that peers may promote risky behaviors by modelling them and providing opportunities for the same (Newcomb &Bentler, 1989).Parents' monitoring, supervision, emotional responsivity, and demands they put on the child directly influences propensity towards risk-taking behavior.The role models presented in the media influences the risk-taking behaviors. For example, the games such as blue whale and PubG provide access to and motivation for indulging adolescents in risk-taking behaviors. Wade and Brannigan (1998) examined Sampson and Laub'ssocial control theory testing the effects of family structure, family attachment, and peer attachment on a generalized form of risk-taking behavior. Their findings suggested that the effect of family attachment on risk-taking is moderated by school and peer involvement. When family attachment is on the lower side, school attachment inhibits risk-taking and strong peer attachment reinforces it.

Dispositionally based theories focus on individual differences that may be associated with a tendency to engage in risky behaviors (Bromeley& Curley, 1992). Risk-taking is viewed as deviant and pathological, reflecting a form of maladaptive functioning due to hypothesized deficits such as poor self-esteem, depression, inadequate social skills, impulsivity, or general propensity and deviance. (Hunter, Figueredo, &Malamuth, 2010) Individual difference models maintain that certain dispositional characteristics such as sensation seeking increases stimulation and arousal and thus risk-taking. In a study conducted by Anic (2007) on risk-taking and personality, it was found that higher scores in openness and lower scores in neuroticism and agreeableness are associated with risk-taking. Conscientiousness was inversely associated with risk-taking. Extraversion was significantly correlated with single item risk measure. The demographic variables accounted for majority of variance in risk-taking, with gender having the strongest association. All four demographic variables (gender, age, income, and education) were independently associated with risk-taking with one or both risk-taking measures. Male gender and younger age were both associated with both measures of risk.

In view of the above review, the present study was conceptualized as the comparison between adolescents and young adults on risk-taking behavior and judgment of risk. Since participants do not have the opportunity to indulge in some of the activities in present, they were asked to indicate whether they would like to indulge in such activities in the future. There is a dearth of studies in the Indian context pertaining to the phenomenon of risk-taking. This behavior has far reaching implications for the safety, security and well-being of self and others. It was hypothesized that (i) adolescents will have a greater tendency to engage in risk-taking behavior than young adults, and (ii) there will be a difference in judgement of risk between adolescents and young adults. (iii) there will be a difference in the number of risk-taking activities that adolescents and young adults would like to indulge in future.

II. METHOD

2.1. Design

A cross-sectional and quantitative study was done on two age groups– adolescents and young adults.

2.2. Tools

The questionnaire used was adapted by the researchers from theAdolescent Risk-Taking Questionnaire (ARQ) by Gullone and Moore (2000) to suit the requirements of the sample from Delhi and National Capital Region (NCR).The original questionnaire comprised of a Risk behavior scale and Risk judgement scale, with 22 items respectively on a five-point Likert response format. In Adolescent and young adults' risk-taking questionnaire (AYRQ) a total of 37 items were listed out in the form of phrases and activities. The items represented categories such as thrill-seeking activities, rebellious behaviors, reckless behaviors, antisocial activities, and risky sexual behaviors. The five-point Likert format was retained. For each item on the risk behavior scale, participants were required to endorse one of the five responses: (0) never do, (1) hardly ever do, (2) do sometimes, (3) do often, and (4) do very often.For each item on the Risk judgement scale, the participants were required to indicate whether they believe the particular behavior to be (0) not at all risky, (1) not very risky, (2) risky (3) very risky, or (4) extremely risky. The participants were also instructed to mark the activities they would like to indulge in future which they are not able to do so now. A pilot study was carried out on 12 participants. Their responses were collated and the items were edited accordingly. The items were reshuffled to retain participants' attentiveness and avoid monotony. The response format was changed to four-point scale as the middle/neutral option was easier to choose in order to avoid extremes.

Test-Retest reliability was found to be 0.89 (n = 69). Content validity was established checking the relevant items related to risk-taking and all the irrelevant items were removed. This was evaluated by three peer group researchers. Concurrent validity was established by administering the original ARQ after administering AYRQ. This was found to be .60 for Risk-taking Behavior and .40 for Judgement of Risk.

2.3. Participants

The sample consisted of 74 male respondents – 37 adolescents (16-17 years) and 37 young adults (20-21 years). Participants were selected using purposive and convenience sampling. All the participants were male, single, living with their families in Delhi NCR and proficient in English.Only male participants were selected for the study as previous research indicated that males exhibit greater risk taking as compared to females (Byrnes, Miller, Schafer, 1999).

2.4. Procedure

The Adolescent and young adults' risk-taking questionnaire (AYRQ) was individually administered. The questionnaire was given along with instructions to respond to the participants after taking their informed consent and ethical guidelines given by APA were followed in data collection. The total number of responses for each response option was calculated and multiplied with their respective ratings. The total scores of all the four response options were then summed up to obtain the total score on risk-taking scale and risk judgement scale separately. Data was analyzed by computing independent sample t-test using SPSS version 22. Chi-square test was used to find the difference in frequency of activities participants indicated they would like to indulge in future.

III. RESULTS AND DISCUSSION

	Adolescents	Young Adults	t df (72)
Risk-Taking Behavior	21.27 (11.92)	31.62 (12.70)	-3.616***
Judgement of Risk	58.76 (16.81)	50.11 (16.64)	2.360*

Table1: Difference between mean scores of the participants on AYRQ

Note: Standard deviation appears in parentheses below means.
*= p<.05
*** = p<.001

3.1. Risk-taking behavior

In order to test if there is a difference in risk-taking behavior of adolescents and young adults, an independent samples t-test was conducted. This test was found to be statistically significant, t(72) = -3.616, p<.001; d = 0.85 The effect size for this analysis (d = 0.85) was found to exceed Cohen's (1988) convention for a large effect size (d = .80). These results indicate that young adults (M = 31.62, SD = 12.70) are significantly higher on risk taking behavior compared to adolescents (M = 21.27, SD = 11.92).

The results of the present study are not in line with previous research carried out in western cultural context.There are vast differences in value systems and parenting styles between collectivistic cultures like India and individualistic cultures.

Newman, Harrison, Dashiff, and Davies (2008) reviewed research over 20 years which suggested that parent-adolescent relationship impacts the development of risk behaviors. They reviewed studies published between 1996-2007 that addressed specific relationship between parenting style and 6 high risk-behavior in adolescents – alcohol, drug and tobacco use, sexual behaviors, that contribute to unintended pregnancy and sexually transmitted diseases, unhealthy dietary behaviors, and physical inactivity unintentional injuries such as suicide and violence. Adolescents' developmental outcomes and development of risky behaviors are influenced by many dimensions of adolescent-parent relationship such as parental warmth versus coldness, acceptance versus rejection, structure versus chaos, autonomy versus control, involvement versus neglect, strictness versus permissiveness, consistent versus inconsistent discipline, and connection versus distance. Adolescents from authoritative household demonstrated higher protective and fewer risk behaviors than non-authoritative families.

Indian parenting is characterized by parental warmth, acceptance, structure, control, involvement, strictness and connection. Due to constant monitoring dominating style of the parents, the adolescents may be inhibited to explore their risk-taking tendencies. However, when they enter young adulthood, parental monitoring reduces considerably and they may indulge in risky behaviors of their choice to assert their independence.

According to Bapat (2017), helicopter parenting is trending in India. Helicopter Parenting describes an overinvolved style of parenting. Parents tend to have lots of dos and don'ts because of which the child comes under constant pressure.Dr Samir Parikh, director, department of mental health and behavioural sciences, Fortis Healthcare, Delhisays, helicopter parents are both overprotective and overinvolved in their child's life. For example, writing long notes and emails to teachers, questioning them about their child's progress, keeping a tab on seating arrangement in class, whom to share food with and whom to talk to, ambitiously doing their holiday homework and project work, to choosing their career and life partner. According to Dr Deepak Sikriwal, consultant, paediatrics, Fortis La Femme, Delhi,one consequence of helicopter parenting is that children

may become averse to taking and also fail to take a stand even when it is for their betterment. This could also explain lower risk-taking in adolescents as they are more under parental control.

Another fundamental difference between the Indian and the western family environment is that in India, the parents feel responsible for the child till a much later age as compared to the western family environment where the child is given a lot of independence since childhood.In the joint family system prevalent in India, the child is answerable to and monitored by not only parents, but also by grandparents, uncles, aunts, older siblings, and cousins.

Kuczynski (2003) has discussed the nature of parent-child relationship which becomes increasingly bi-directional including parental monitoring. The more parents monitor their child's whereabouts and activities, there is a greater reduction in delinquent acts over time. Parental monitoring encourages responsible youth behavior which leads to greater parental knowledge. They prove to be more effective giving adolescents reduced opportunity and reason to engage in delinquency. Pro-active parents who intervene in the anti-social acts of adolescents set the foundation for more positive parent-child relationship where the teenagers freely share the information. On the other hand, a poor parental monitoring results in increased delinquency and negative parent interaction. Parents may further detach themselves from their role to avoid bitter arguments and to reduce interaction with the child whom they dislike now.

Parental control has different meanings in different cultural settings. In a study conducted by Albert, Trommsdorff, and Mishra (2007) on India and Germany, researchers found that parental control signified protection and care in India whereas it was taken as constraint and overprotection in Germany. Control may be more normal and acceptable for adolescents who grew up in an interdependent culture, whereas parental control conflicted with striving for independence and autonomy in a culture of independence.Maternal control may give feeling of security and acceptance to Indian teenagers but not their German counterparts.

3.2. Judgment of Risk

Table 1 also indicates if there is a difference in judgement of risk by adolescents and young adults. The t test was found to be statistically significant, $t(72) = 2.360$, $p<.05$; $d = 0.56$ The effect size for this analysis ($d = 0.56$) was found to exceed Cohen's (1988) convention for a medium effect size ($d = .50$). These results indicate that adolescents ($M = 58.76$, $SD = 16.81$) are significantly higher on judgement of risk compared to young adults ($M = 50.11$, $SD = 16.64$).

The higher the judgement of risk, the less prone is the individual to risk-taking behavior.Reniers et al. (2016) also reported that participants who perceived behaviors as less risky, took more risks.Authoritative parenting style as well as parental monitoring may also aid in developing a sharp sense of judgment of risk leading to reduced vulnerability and enhanced safety of the adolescents. Moreover, parental control in collectivist and interdependent cultures is perceived in terms of protection and care. it gives the feeling of security and acceptance. This parental control may lead to enhanced judgement of risk in the adolescents in such cultures which is very much in conjunction with the findings of the present study.

3.3. Risk-taking in future

Adolescents	Young Adults	Chi-Square
334	280	4.749*

Table 2: Number of risk-taking activities likely to do in future
*** = p<.05**

Table 2 indicates that adolescents are significantly more likely to indulge in risk-taking activities when they grow up as compared to young adults. The results support the rest of the findings. Since the adolescents do not have the opportunity to indulge in some activities like driving due to legal bindings and high parental control. But they aspire to do the same in future.

IV. CONCLUSIONS

In Indian cultural context, it can be said that parenting practices lead to safer and healthier lifestyle choices and better judgment of risk in adolescence. These practices should be encouraged and retained. The western models should not be followed indiscriminately. As far as young adults are concerned, since they are more vulnerable to risk-taking behavior and have lower judgement of risk, parental involvement and monitoring should be continued but in a subtle and least invasive manner so that young adults can experience privacy but at the same time be safe.

All stakeholders including family, school, peers, media, workplace, policy makers, and law-enforcement agencies should be aware of the phenomenon of risk-taking and serious consequences it can have for the well-being of adolescents and young adults. Adequate precautionary measures should be taken while dealing with this age group.

The present study was carried out only on males. Similar studies can be carried out on females and LGBTQI community. Random sampling technique was not used. While constructing the questionnaire factor analysis could have been utilized in order to identify the dimensions under which the various items belonged. But, due to paucity of time this could not be done and a total score based on all the 37 items was obtained. No subscales were identified. In view of the results obtained from the present research, it is

suggested that the future studies should examine the correlates of risk-taking, including parental styles. The study has not focused on positive aspects of risk-taking such as learning new skills, overcoming fear of failure, breaking through self-imposed limits, becoming more creative, breaking free from average, uncover unforeseen opportunities, growth in self-confidence, greater trust, and not playing safe and thus achieving your dreams.

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