

## BIOLOGICAL AND PARENTAL PREDICTORS: IMPACT ON ADOLESCENT BEHAVIOR

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### Abstract

Adolescence is defined as a span of formative biological and social transition, which reflects a sensitive period influencing a number of adolescent behaviors. At this stage the physical appearance changes and hence, he becomes more conscious of the changes. The physical changes include - increase in height and body weight the development of secondary sexual characteristics and the overall body development. Biological changes can be caused due to factors which can be internal to adolescent such as under nutrition and it can be external factors such as stress in the family. (Kaplowitz, 2008). In the same way early puberty may have different changes in adolescent girls and boys. (Y Wang, 2002)

**Key words:** Adolescence; biological; adolescent behaviors; parenting; family structure; family economic status

### Introduction

**“There is nothing permanent except change.”—Heraclitus**

We as living beings develop in terms of physical, emotional, social, cognitive, and moral development from time to time. The human life cycle explains various stages of development. It starts first with the infant which ranges from ages 0-3, and then the Early Ages which lies between 3 to 6 the next is Middle age which is 6 to 8 and next is Late ages which range from 9-11 after that the, Adolescence ages which range from 12 to 20 years. (Armstrong, 2007). According to 1 a German psychoanalyst every human being passes through a chain of eight interrelated stages in the entire life cycle. Adolescence is 5th in the series and is for people of the age group between 12 to 18 years (Erikson, 1993). This stage is dominated by exploring who they are as individuals (identity and roles they play). The Piaget Stage theory of Cognitive Development emphasizes on four distinct stages in children. He even emphasized on the serial where the stages will fall. The first stage is sensorimotor stage that starts from birth to 2 years old and next stage is preoperational stage which starts from age 2 to 4 and the third stage is concrete operations which starts from the ages 7 to 11 and the last stage is formal operations which starts at ages 11 to 15 (David, 2014).

### Adolescence Defined

Adolescence is defined as the period between the child is between the age of 10 to 19 years old. (World Health Organization [WHO], 2008).

When a child enters middle school there is changes in terms of physical, social as well as cognitive development. (Burke, Brennan, & Roney, 2010).

“Adolescence in that span of years during which boys and girls move from childhood to adulthood, mentally, emotionally, socially and physically.” (Jersild, 1963)

“A process rather than a period, a process of achieving the attitudes and beliefs needed for effective participation in society.” (Rogers, 1981)

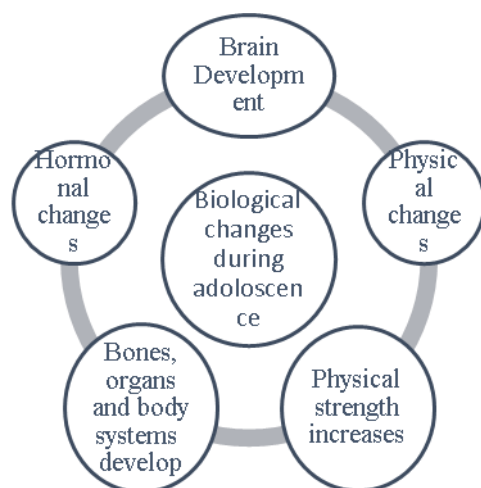
In the words of Piaget he defined “adolescence as the age of great ideals and the beginning of theories as well as the time of simple adaptation of life.”

Stanley Hall defined adolescence as “a period of great stress and strain, storm and strife.”

E.A. Peel defined “the adolescent is beset by problems of divided loyalties, accentuated by the lack of adult privileges and responsibilities. He thus appears excessively aggressive and then excessively shy, excessively affectionate and then quite suddenly detached and cool. All these problems arise due to stresses and strains of transition.”

G.R. Medinnus and R.C. Johnson state, “When there is a sign of sexual growth adolescent starts from that time and ends when the individual reached adulthood. The developmental period is described in adolescence when the childhood and adulthood is characterized by considerable physical, social and cognitive changes. (Lerner & Steinberg, 2004). *It is the most interesting and highly complex stage in the life cycle. It starts with biological changes with the onset of puberty leading to growth. At this stage the physical body grows, sexual characteristics appear and fertility is attained. These changes do not occurs at one time but the changes range from the age of 8 to 14 in females and 9 to 15 in males. Not just the physical attributes but also the brain starts developing. These changes help the children to plan, implement and to resolve issues. At times the children react in a strange way and show a lost type of feeling because of the transition phase of the brain. The brain re-sets the body clock and hence changes in the sleep pattern. The bones, organs and body systems develop. The performance of the organs improves. This is the time when the sweat glands and oil glands are activated leading to increased body odor and problems of acne. The muscles strengthen and so does the physical strength. The nutritional requirement of children increases because of it.* (Network, 2016).

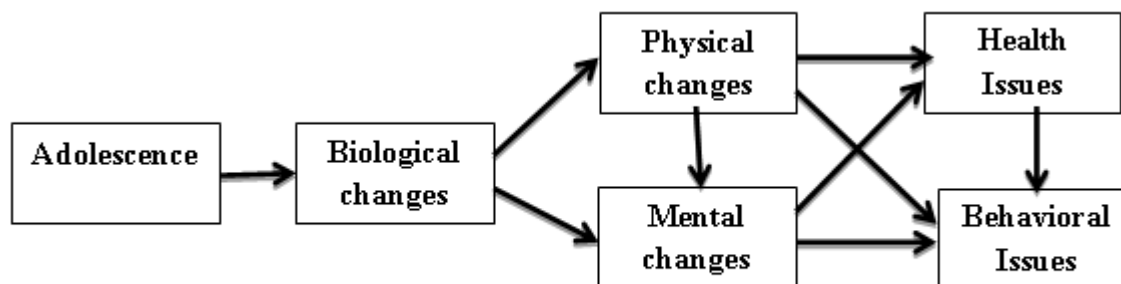
Fig 1: Biological changes during Adolescence



These biological changes lead to psychological variations impacting the behavior of adolescents.

According to Neurobiological model developed by Steinberg and Colleagues there are two brain systems developing through adolescence. The first brain system leads to changes in social & emotional system and this occurs because of brain dopamine system. This emphasize on the increase sensational seeking behavior of adolescence. Because of this adolescent get attracted towards rewards and novel stimuli. The second system is cognitive control system which controls impulsive behavior and helps adolescents to plan and take decisions. In this stage the first brain system is highly developed but the cognitive control system is not adequately developed. This increases to their behavior to take risk. The risk taking attitude of adolescents leads to rash driving, consumption of drug and alcohol and risky sexual behavior etc.

Fig. 2: Impact of biological changes on behavior of adolescents



### Research Objectives

- To study the changing behavior of adolescence
- To study the biological changes during adolescence and its impact on adolescent behavior.
- To analyze the relationship of family characteristics on the adolescents behaviour
- To study the relationship of parenting on the adolescents behavior.

### Research Methodology

The study proposed by researcher is based on both Primary as well as Secondary data. Some objectives were met through secondary data and one objective i.e. the impact of parenting on the behavior of adolescents a structured questionnaire was made and data was collected. Collected data further analyzed through appropriate statistical tools like CFA and regression has been applied to analyze the data. regression model has been used to relate the dependent and independent variables based on theoretical support from existed literature.

### Literature Review

The study focuses review of literature related to adolescents' behavior and family characteristics like economic status of family, family structure, social life of family also focuses on the parenting style and adolescents' behavior. All plays a significant role in adolescents' life.

### Behavioural / Emotional problems

Various researches indicated that behavioral and emotional problems among adolescents may be classified into two broad dimensions: externalizing and internalizing behavior problems. (Achenbach, 1991)

Mostly researchers believe that external disorder in behaviors can be seen in the form of aggression, drug use, underage drinking and internal disorder in behavior can be seen in the form of depression and fearfulness. (Costello et. al, 2006) Relationship between health problems and behavioral problems during adolescence was found. (Uema, et.al, 2006) In an outpatient clinic the study was conducted on children and adolescents who has sleep disorders. External disorder was found in one quarter. (Pirinen, 2014) This study studies the relationship between sleep and psychosocial symptoms in adolescents with inflammatory bowel disease (IBD). The adolescents who have IBD have different behavioural issues like aggressive behaviour, they also suffer from problems related to sleep and depression. (BS, 2013) Insufficient sleep is associated with adverse behavioral, and psychosocial problems among adolescents, which lead to youth violence. This study is done to understand the relationship between insufficient sleep and violence behaviour conducted by adolescents. In the study it was found that majority of school violence-related behaviors arises because of insufficient sleep disorders compared to students who have sufficient sleep.

The hypotheses were laid down keeping in mind the problem of research and proved through literature review.

### Family Characteristics and Adolescents behavior

Family characteristics were further split into the following variables

### **Economic status of Family**

H1 has been developed to check the how economic status of the family effects adolescent's behavior.

**H1:**Economic status of the family effect emotions and behavior of parents' as well as children

Some studies had proved that economic factors play a role that affect families. The adolescents whose families who come out of poverty shows improvement in both psychiatric symptoms i.e. internalizing problems and conduct problems i.e. externalizing problems. Costello(2003). In this study he has studied that intervention in adolescents which reduced poverty and increased employment and this also affect child behavior(Huston et.al 2003)

**H1a:** Family economic status leads to stress in the family.

**H1b:** Family stress negatively impacts the adolescents 'behavior.

There are three primary models which tell how economic factors influence families and adolescent behavior are interactionist model, family stress model and the investment model,

#### **Child behavior and its relationship with Family stress model**

Research on the family stress model was done in 1930s. (Conger and Conger, 2008) Conger in his research explained how parents impact the behavior of child. When parents become have increased conflict, the parenting becomes consistent. It can affect adolescents which increase in risky behavior. In his study he also found that distress may also affect different family also that is when the parents are under stress or challenge is high they have more emotional or behavioral problems which effect family and increase the risk for children.

#### **Child's Behavior and its relationship with Investment Model**

The IM explains that families with have larger economic resources managed to spent large amount of money in the development of their children whereas the families who don't have these resources can't do. (Bradley & Corwyn, 2002)

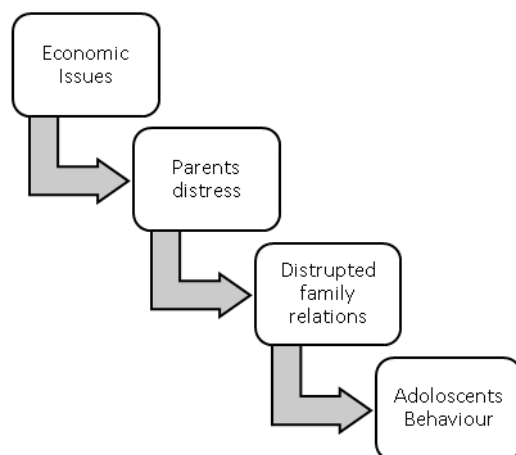
The relationship between family income during adolescence has a positive impact on financial and other stress in adult years (Bradley & Corwyn, 2002; Mayer, 1997; Teachman, Paasch, Day, & Carver, 1997).

#### **The Interactionist model and Child's Behavior**

Conger, Conger and Martin (2010) studied the impact of socioeconomic status (SES) on child behavior in interactionist model. Wickrama and his colleagues (2008) and Haas (2006) studied that children of low SES families suffer from more mental and physical problems this is reason of economic hardship in adulthood.

We integrate H1 through H1b into a holistic model to depict how the family economic status on the behavior of the adolescents. The model is represented in the **Figure 3**.

Fig 3: Holistic model of the relationship of family economic status on the Adolescents Behavior



**Source:** Conger and Conger, 2008

### **Family Structure**

Family structure has been studied and analyzed in relation to adolescent behavior, and researchers developed H2 to check the impact of family structure on adolescent's behavior. And it was found in various studies that family structure plays an important role in youth's lives.

Youth whose parenting is done by single mother are supported as compared to those who are living in nuclear or joint families (Zimmerman, Salem, & Maton, 1995).

Researches show that youth which are raised in single-parent family make decisions independently without their parent consultation. (R. F. Oman S. K. Vesely, 2007)

After reviewing it was concluded that H2 i.e. Family structure influences adolescents' behavior. is justified and accepted.

### **Parenting and adolescents' behavior**

The parenting during adolescent time affects the behavior in adulthood. Every parent tries to provide an environment that is safe, secure, and supportive; this makes them a child to become cheerful and physically fit.

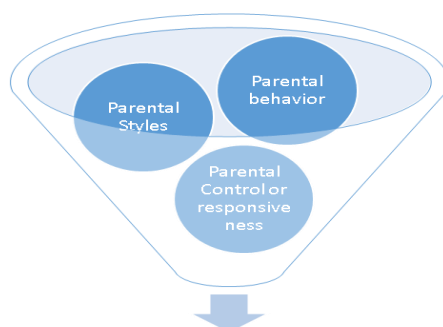
At this premise we developed H3 to check the impact of parenting on adolescents.

H3: Parenting has impact on adolescents' behavior.

Type of parenting helps the child to develop his knowledge, values, and behavior, which is essential for the adult, and it will help the overall growth of an individual and provide contribution to family and society. (Lerner, et al., 1995).

Parenting includes style of parenting, parenting behavior, and parental responsiveness. Baumrind worked on the parenting style; he explained parental control and different parenting styles, which included authoritative, authoritarian, and permissive.

Parental control is explained as "the claims parents make on children to become integrated into the family as a whole, by their maturity demands, supervision, and disciplinary efforts and willingness to confront the child who disobeys" (Baumrind, D. 1991). While parenting behaviors include monitoring and discipline practice followed by parents.



**Fig 4: Parenting**

Source: Baumrind, D.1991

Parenting styles assist in explaining adolescent behavior. If an adolescent is raised in a secure environment, the adolescents are more psychosocially mature and competent. Because of the emotional support communicated by parents, these adolescents are able to effectively handle difficult situations or events (Yeh, 2003). Adolescents today have many problems because of pressures of family.

If the changes are not properly managed between parents and children it creates tension among them and the risk taking behavior get increased such as consuming of alcohol, drugs etc. (Costello, Foley, &Angold, 2006; Dallo& Martins, 2011).

In this stage of adolescence poor mental health is also associated with substance use and abuse, violence, poor reproductive and sexual health. (Patel, 2007)

Children and adolescents experiencing difficulties with mental health also tend to have problems with physical health, relationships with peers and their family members well as with functioning at school. (Jane- L Lopis, 2008)

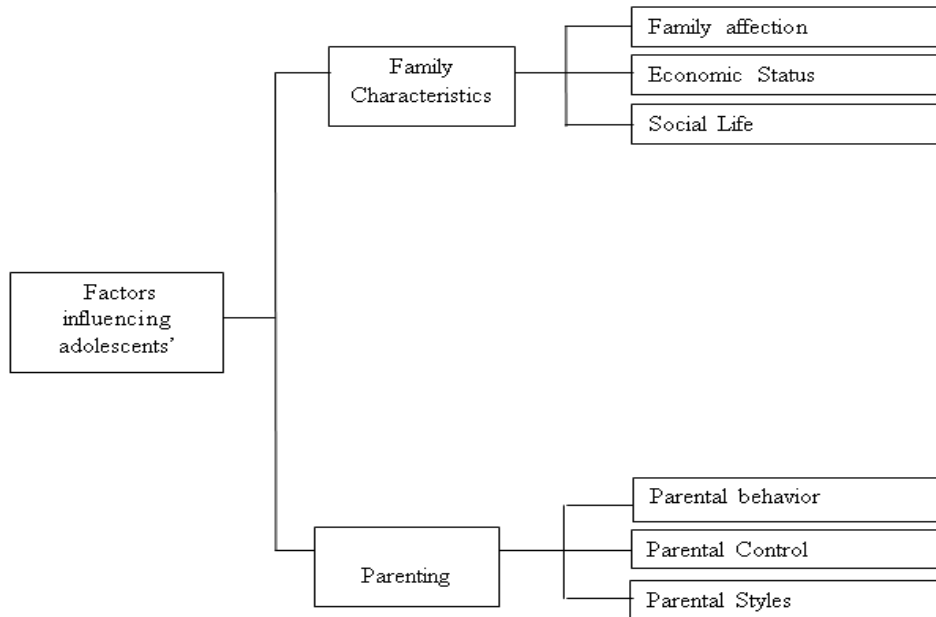
JurgitaNarusyte found that Mothers get more emotionally overinvolved in their parenting as a response to internalizing behavior problems in their children. Also mothers' critical behavior seems to be evoked by externalizing behavior in adolescents. It has also been found that fathers' criticism was found to influence the development of externalizing problems in an environmental way. (Narusyte, 2009)

Juliet Harper and John K. Collins studied the problems related to sharing and adjustments during the mid-adolescent years. In their research they found that girl face more problem in adjustment as compared to boys.

Table 1: Excerpts from Literature

Authors	Year	Findings
Lazar et al,	2004	The relationship between mother- adolescent can be change due to divorce. There are several factors which can effect this such closeness prior to divorce, and socio-economic status
Fagan	1999	In their study he found that divorced mothers can have less affection and communication with their adolescent which can create inconsistencies in their relationship
Richardson &McCabe	2001	In their study they found that conflict of the parents prior before and after the divorce also affect the adolescent behavior.

Fig 5: Conceptual Model



## Data Analysis

Our H3 was related to the impact of parenting over adolescents' behavior. It was tested through secondary as well as primary data and data was analyzed through CFA.

Table 2: Confirmatory Factor Analysis

Factor	Items	Mean	Variance	Factor Loading	Cronbach's alpha
Behaviour	I like indulging in risky activities like driving rash, partying hard etc.	1.88	1.715	0.862	0.974
	I like indulging in substance use	2.05	1.672	0.763	
	I often indulge in fighting with others	1.82	1.299	0.856	
	I feel like leaving home	1.84	1.563	0.609	
	I feel like committing suicide	1.85	1.485	0.907	
	I feel like leaving academics	3.1	2.804	0.803	
	I score well in exams	3.17	2.147	0.882	
	I won lots of awards	3.37	3.01	0.862	
	I am liked by people around me	3.4	3.12	0.651	
	I feel like helping others	3.5	3.33	0.823	
Parenting	Disagreement between you and your	2.46	1.863	0.877	0.969

The IWK-Parent Adolescent Communication Checklist	parents				0.931
	Not being taken seriously by your parents	2.62	1.865	0.863	
	Little or no control over life	2.48	2.050	0.896	
	Abiding by petty rules	2.24	2.695	0.836	
	Arguments at home	3.12	2.279	0.81	
	Lack of trust from adults	2.85	2.808	0.608	
	High expectations from parents	3.13	3.386	0.855	
	I am often criticized when I am discussing things with my parents	3.1	2.804	0.803	
	My Parents is often sarcastic about my ideas	3.26	3.419	0.68	
	I can talk to my parents about things that are important to me	3.2	2.140	0.794	
	My parents shows me that he/she loves me	3.12	2.470	0.838	
	My Parents shows me that he/she trusts me	3.19	2.060	0.827	
	My Parents often says something calming or positive before discussing something difficult	3.16	2.100	0.836	
	It is very easy for me to express my true feelings to my parents	3.2	2.140	0.794	0.972
	During my night out my parent(s) are aware about that	3.12	2.470	0.838	
	I generally discuss with my parents the plans I have with my friends	3.19	2.060	0.827	
	I have to take permission to stay out late in the evening.	3.16	2.100	0.836	

#### Confirmatory Factor Analysis:

After finding the measures suitable to study all the constructs, the confirmatory factor analysis was performed to analyze the items in the measures used. After applying CFA two items of behavior and two items of parenting, which had alpha value less than 0.7, were dropped.

The value of Chi-Square is 48.03. Since the value of  $P < .05$  i.e. ( $< .0001$ ). We can infer that parenting significantly influence behavior of adolescents.

The Non- Linear options to identify the best fit equation has also been done.

$$Y = -9.181 + 1.157X$$

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
	.974	.948	.931	8.260



Unstandardized Coefficients		Standardized Coefficients	t stat	p-value
B	Std. Error	Beta		
-9.181	9.828		-0.934	0.419
1.157	0.156	0.974	7.42	0.005

The acceptable model fit which is indicated by measurement model with the result of chi square as ( $\chi^2$ ) = 410.534, p value < 0.001; CMIN/ df ( $\chi^2$  / df) = 2.868 which is less than 5. We can infer that parenting significantly influence behavior of adolescents.

The other values were also recorded as CFI = 0.955, TLI = 0.945 and IFI = 0.95. The value of NFI = .933 and PNFI = 0.764, PCFI = 0.782 and RMSEA = 0.08. Further the evidence of reliability of scale was done by calculating value of average variance explained & composite reliability.

It has been found Composite reliability of latent variable is more than the tolerable limit of 0.70 whereas the average variance found for various factors is more than acceptable limit of 0.5. All the items resulted in significant loadings onto the respective latent constructs ( $p < .001$ ) with values ranging from 0.77 to 0.968. The average variance found is greater than 0.5 for each construct supports the convergent validity of the constructs.

Regression Analysis was done and the following equation was obtained to show the relationship

$$Y = -7.181 + 1.157X$$

The equation indicates that parenting is positively related to adolescents' behavior. If the value of X is Zero the value of Y would never be zero. Hence it can be said that parenting influences behavior but in the absence of parenting there would be a behavior.

Model	R	R Square	Adjusted Square	Std. Error of the estimate
	.774	.748	.731	6.260

The coefficient of determination which shows the relationship adolescent behavior and parenting is 0.748. This shows that 74.8% of the variance in behavior is due to parenting. The remaining 25.2% is due to other factors that were not taken into account during analysis which can be peers, school environment etc.

## Discussion and Implications

Through literature review we found that there is an impact of economic status of the parents on adolescents' behavior. This status if negative increases the stress level in the family which in turn negatively impacts the adolescents' behavior. We also found that the Family structure and family affection influences their behavior. Further researchers analyzed primary data using Confirmatory factor analysis and regression that parenting has a positive impact on adolescents' behavior.

This research is beneficial to the society. Adolescents are the future of the country. Alarming rate of crime by adolescents shows almost 60% crimes which was done against minors are done by age 16 and 18. It requires their proper grooming and initiatives to make them civic. The grooming will depend upon parents' involvement and school's intervention. Educational programs for parents can be created to learn effective parenting techniques for the upbringing of their children. Schools can also offer programs both for the children as well as for the parents for creating a special bond. This special bond can decrease the probability of the adolescent to turn into deviant behaviors.

## Conclusion

It was analyzed that economic status of family, family structure and Family Social life and parenting style influences adolescent behavior and their risk-taking attitude. Parents directly and indirectly affect their adolescent's deviant behaviors. Based upon the results, it is suggested that development programs for parents are

to be conducted so that parenting skills can be improved may be started for the maintenance of healthy relationship with their child. Other factors which cause high risk behaviors in the adolescents should also be focused. Monitoring of the child as well proper support should be given as an when required and also consistent punishments if they do anything wrong is important while we are dealing with adolescents..

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**Scales Used**

Harter's Perceived Competence Scale for Adolescents and Rosenberg's Self-Esteem Scale.

**Abbreviations Used**

- IBD: Inflammatory Bowel Disease
- FSM: Family Stress Model
- IM: Investment Model
- SES: Socioeconomic status