

The Relationship between Adolescent Risk Behaviors and Family Structural and Process Factors: The Impact of Gender.

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Abstract: Family factors are important protective variables for adolescent development, risk behavior and outcome. Gender influences impact family interactions, rules and relationships. Adolescent cognitive, social and psycho emotional development is evidenced to have gender differences. It is expected that boys and girls respond differently to family factors. The interaction between family factors and risk behaviors is expected to have gendered nuances. Evidence of this is needed in exploration, planning and implementation of interventions for at risk adolescents. Aim was to determine the prevalence of risk behaviors, their relationship with family factors and pattern of gendered differences. Over 400 senior secondary school students randomly selected participated using customized self-administered instruments including the Family Circle and APGAR Questionnaire. P value = 0.05. Findings included a prevalence of risk behavior of 26.5%. Risk behavior status had significant negative correlation with maternal attachment and family functioning for girls and only family functioning for boys. Parental separation, maternal and paternal educational status had significant positive correlation only with truancy for girls and sexual debut for boys. Alcohol use had significant negative correlation with maternal attachment for all irrespective of gender. Inter correlations among the risk behaviors showed alcohol as differentiating link for boys and truancy for girls to the common central risks of sexual debut and smoking. Inter correlations among the risk behaviors was stronger for girls than for boys except with alcohol. These findings confirm that gender significantly impacts the trajectory from impaired family process and structural factors to diverse risk behaviors among adolescents.

Key words: adolescent, parental attachment, family structure, functioning, risk behavior.

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I. Introduction

One of the many challenges of adolescent transition is exposure to risk behavior opportunities and achieving self-efficacy in behavioral control. All adolescents are faced with this challenge many will toy with risk taking but majority emerge from this phase successfully. Risk behavior has been defined as any behavior that may endanger the wellbeing of the self or others either through immediate risk of physical injury or by violating rules, laws or norms established to prevent negative consequences.¹ Risk behaviors constitute the major cause of morbidity and mortality among adolescents². They also lay the foundation for life style choices that determine morbidities in adulthood.² Most importantly they determine the success of adolescent transition as some risk behaviors have the capacity to adversely change the life course of the adolescents. Risk behaviors include early, unprotected sex with its adverse sequelae, alcohol, tobacco and substance use, truancy, dangerous driving, violence and delinquency. The adolescent transition transforms the individual from the child adolescent to the adolescent adult with dramatic and rapid changes in physical, cognitive, social and psychological domains.³

The tendency to engage in risk behaviors depends on a host of factors, intrinsic and extrinsic in the adolescent. Fundamental intrinsic factors are personality type including traits like self-esteem, self-efficacy, impulsivity, sensation seeking tendencies, motivation, goal orientation, age, gender, intellectual capacity, religiosity, psychological and psychiatric disorders etc.⁴

Environmental factors operating at micro and macrosystem levels also influence the tendency to engage in risk behaviors.⁵ These include at the microsystem level, parenting and family functioning. At exosystems level, peer pressure and media influence. At macrosystem level, socio-political, cultural and economic conditions impacting the families and neighborhoods and affecting adolescent development and outcome including, schools and school connectedness, recreational and vocational opportunities.^{6,7} The period is naturally a time of experimentation and discovery which necessitates "risk taking" but the adolescent is expected to make appropriate choices that result in positive growth.

The unique psychosocial tasks of adolescent phase include achieving individuation, self-esteem and self-regulation, autonomy, plans for the future and academic achievements in view of those plans. This is

essentially a psychosocial process in the context of socio cultural milieu of the child affected by gender, family, religious and cultural values.⁸ Decision on what to incorporate into the emerging personality requires some degree of risk taking and experimentation which if adaptively managed will result in positive outcome⁴ Cultural role expectations for the adolescent and the family are influenced by gender. Biological development and expression of character traits are also influenced by gender⁹

The structures of the brain constituting the socio emotional network located in subcortical regions including the amygdala and ventral stratum develop rapidly during adolescence increasing their responsiveness to socio emotional cues. This is however not counter balanced by cognitive control as the prefrontal cortex involved in self-control, decision making and judgement does not mature until early adulthood.¹⁰ The consequence is that adolescent reasoning is in favour of immediate rewards without cognizance of long term consequences (temporal discounting).¹¹

Evidence has established the high impulsivity of the adolescent which reduces as maturity approaches. However it has been shown that adolescent decision making is not altogether explained by impulsivity or lack of awareness of the risks inherent in their actions. Adolescent decision making is similar to that of adult to the extent that it is goal oriented and seemingly in favor of the risk benefit analysis. Given the immediate task of establishing autonomy (independently establishing oneself in his social sphere) risk benefit analysis in favor of autonomy and peer acceptance defines their reasoning unlike the adult who has experience, a holistic appraisal and capacity for individualizing their context in a situation.⁸ It has also been shown that adolescents are similar to adults in rejecting known risks but are different from them in having a higher tolerance for ambiguity and seeing unknown risks as opportunities for growth.¹² The adolescent is transitioning from verbatim based reasoning of childhood to the adult “gist based” reasoning and consequently often using both mechanisms and being highly susceptible to contextual influences. This has been termed the “fuzzy trace” reasoning.⁸ Adolescent brain has also been shown to be more sensitive to peer induced rewards and more susceptible to the stress of peer rejection than the adult brain. The right ventro lateral prefrontal cortex responsible for coping with peer rejection and the lateral prefrontal cortex responsible for self-regulation are also immature in the adolescent leaving them more susceptible to this stress of peer rejection and increased risk behaviour.⁸ There are gender differences in the development of these neuronal channels and the pace of maturity as girls mature faster than boys.¹¹

Personality traits, values, and resilience are major factors determining the capacity of the adolescent to make the right choices about risks. There are gender based differences in the expression of these traits. These factors are essentially developed by the family, supported by other institutions of society like schools and religious organizations. The family has the primary responsibility for nurturing, protecting and socialization of children. It has fundamental responsibility and influence on physical, psychological, social and emotional wellbeing of her members. Studies have established that personal and family factors are the most important factors that impact on adolescent outcomes.¹¹ All these are possible where family processes are functional. Where there is dysfunction it constitutes a crucial risk factor for negative outcome for her members especially the adolescent. It has been well established in literature that transmission of values, molding of character and embedding of resilience in the adolescent in a functional home is made possible by parent child connectedness, which embodies a warm and mutual parent adolescent relationship that transmits child centeredness.^{13,14,15} Other parenting practices that facilitate positive adolescent development include monitoring and supervision, rules and discipline, modelling of values and sharing quality time.^{10,13,14} Parenting is done under the influence of gendered biological and cultural norms impacting parenting practices and relationships between parents and their adolescents.^{16,17} Parental roles are gender influenced with mothers assigned the role of nurturing and fathers the role of providing and protecting the family. Boys are taught to be strong, engage themselves outside the home, and be less emotionally expressive and dependent, while girls are taught to be gentle, affectionate, obedient, and generally house bound.⁹ The dynamics of the parent adolescent relationship is also nuanced by these gender considerations and outcome is expected to reflect these differences. Other factors include differences in biopsychological parameters, parental expectations and discipline, cultural expectations, socialization patterns and impact of peer pressure.¹

Impulsivity and sensation seeking are more common among males than females and is associated with higher prevalence of risk behavior among men. Among the adolescents especially boys, self-disclosure is made possible by a warm parent adolescent relationship in truancy, alcohol and drug use and delinquency.^{18,19}

Parents tend to inculcate high self-control in their girls and tolerate low self-control among the boys. This has been linked to emotional problems in female adolescents and behavioral problems among male adolescents.²⁰ The adolescent perception of family processes is important in evaluation as this determines their mental representation and internalization of these processes and how it impacts their behaviour.^{21,22}

It is therefore imperative that in the personalized care of adolescents, in screening and intervention regarding risk behavior status, related family risk and protective factors, their perception of family factors and impact of gender must be taken into consideration.²³

Justification: Health maintenance for adolescents requires screening for risk behavior practice as this has been shown to be the major cause of morbidity and mortality among them.² Screening for family risk factors has been advocated to enable focused intervention initiated by the health care provider especially Family Physicians.^{24,25} Patient centered personalized care requires understanding of the individual's perspective. In the dynamics of the family, roles, relationships and rules are all influenced by gender. The adolescent's view of these processes determines its impact on their adjustment and behaviour.²¹ The need to study the relationship between perceived family processes and adolescent risk behavior and the associated gendered influences is imperative.²³ In targeted interventions for at risk adolescents, this would facilitate exploration and interpretation of observed family processes, understanding the pathway to psychological outcomes and instituting corrective measures. There is a dearth of literature in this area in our environment. This study has made an effort in this regard to determine which family factors are related to various risk behaviors among male and female adolescents.

Aim and Objectives: to determine the prevalence of risk behaviors, their relationship with family factors and the pattern of gender based differences among adolescents.

II. Materials and Method

Study Design: The study had a cross sectional descriptive design.

Study Area: Secondary schools in Benin City, the capital of Edo State Nigeria. There are both private and public schools in the city. The low to middle class citizens generally attend the public schools while the private ones are attended by children from the middle to upper class homes. The secondary schools are divided into junior and senior schools of three years each.

Study population: The adolescents in senior secondary schools in Benin City. The adolescent population in Edo state was estimated at 344, 024.²⁶ The prevalence of adolescent risk behavior in Benin City was assumed to be 50%.

Selection criteria:

Inclusion: all senior secondary students within age 10-19 who consented to participate.

Exclusion: All students in senior class who were below 10 years or above 19 years or refused to consent.

Sampling method: Random sampling by balloting was used to select two mixed non boarding schools, one private and one public. non boarding mixed schools were chosen because there is expected to be some important contextual differences between these schools and single sex schools, boarding schools (mixed or single sex), faith based schools and secular schools. Non Boarding schools also have the additional advantage of having children who are in constant contact with their parents, the school and the society. They offer the highest likelihood of adolescents in their natural milieu.

Calculated sample size was 322. Over four hundred students were recruited from the two schools.

Ethical consideration: Ethical approval was obtained from the Ethics and Research Committee of University of Benin Teaching Hospital. Certificate No ADM/E 22/A/VOL.VII/1349. In the schools, permission was obtained from the Principals in writing and informed consent obtained from the students.

Method of Data collection: The study instrument was a semi structured self-administered questionnaire which was distributed to the students after permission and consent had been obtained. The filled questionnaires were retrieved same day at break time.

Study Instrument: Consisted of three sections: Section A: covering sociodemographic variables including information on family structure and parent adolescent communication on sexuality.

Section B: the APGAR Questionnaire. It is a standardized validated self-administered family function screening instrument developed by Smilkstein.²⁷ It consists of one question in each of five domains testing the candidate's perception of processes in his family. 1) Adaptation: tests the way the family harnesses resources internal and external to solve problems. Partnership: tests how the family involves members in dealing with issues. Growth: tests the family's support for members' interests in new ventures for their growth. Affection: how the family shares and expresses affection. Resolve: assesses satisfaction with the amount of time the family spends together. Response to each question is scored 0 (hardly ever), 1 (sometimes) 2 (almost always). Total score ranges from 0-10. Scores 8-10 denotes highly functional, 4-7 denotes moderately dysfunctional and 0-3 denotes severe dysfunction.

Section C: Family Circle; it is a self-drawn graphic representation of an individual and his family.²⁸ It may include other important people in their life. It consists of a large circle representing the individual's life sphere. A small circle in the center represents the candidate. Other small circles are drawn bearing the names of those they represent. Those within the circle are important and the closeness of their circle to the center depicts

the strength of emotional bond between them and the candidate. Those drawn outside the circle are not important to the candidate. Maternal and paternal attachment were represented on 4 levels.

Very close: if their circle intercepts that of the candidate. Close: if their circle is close to the center.

Not close: if their circle is on or close to the periphery

Not important: if their circle is outside the sphere.

Summing up maternal and paternal attachment to derive parental attachment, 3 levels were defined: Very Healthy Attachment; if the candidate is close or very close to both parents. Healthy Attachment: if candidate is close or very close to one parent.

Poor Attachment: if candidate defines both parents as not close or not important.

Study Duration: Data collection was done over about 4weeks.

Data Management: Data was collated using the excel spread sheet and analyzed using the SPSS version 21. P value was set at 0.05. Inferential statistics was done using the chi square test and Spearman’s correlation for bivariate correlation between variables.

III. Results

Only three hundred and thirty-six questionnaires were found adequate for analysis. Most of respondents (70.3%) were in the middle phase of adolescence with a mean age of 15.39yrs (SD= 1.454 yrs). Sex distribution was equal. Majority of the respondents were Christians (97.3%). More than 88% of their mothers and fathers had secondary education or more. Majority of them were from monogamous families (86.3%) in which they lived with both parents (72.3%). Of the 27.7% who had separated parents, cause of separation was evenly spread between divorce, work and widowhood

Table 1: Distribution of Demographic Variables among the Respondents.

Demographic variable	Response	Frequency	Percentage
Age:	Range: 11-19years Mean= 15.39 years. SD= +/- 1.454years		
Adolescent phase:	Early adolescence (11-13yrs)	28	8.3
	Middle adolescence(14-16yrs)	236	70.3
	Late adolescence(17-19Yrs)	72	21.4
Sex	Male	168	50
	Female	168	50
Religion	Christianity	327	97.3
	Islam	8	2.4
	African traditional religion.	1	0.3
Father’s educational status	None	14	4.2
	Primary	11	3.3
	Secondary	76	22.6
	Tertiary	235	69.9
Mother’s educational status	None	16	4.8
	Primary	22	6.5
	Secondary	101	30.1
	Tertiary	197	58.6

Distribution of demographic variables (contd)

Variable	Response	Frequency	Percentage
Family Type	Monogamous	290	86.3
	polygamous	46	13.7
Family cycle stage	Stage 4	245	72.9
	Stage 5	91	27
Living conditions	Living with both parents	243	72.3
	Living with separated parent	93	27.7
Parental separation type		27	29.0
	Divorce	31	33.3
	Work	35	37.7
	Death		

Table 2: Distribution of Risk Behaviours among the Respondents.

Majority (74.4%) of the respondents did not engage in any risk behaviour. The prevalence of risk behavior was 25.6%. The prevalence of sexual debut among the respondents was 10.1%. Alcohol use occurred in 10.1% of the respondents. Truancy was found in 11%, smoking was 1.5% and marihuana use was 2.1%.

Variable	Response	Frequency	Percentage
Risk Behavior	Yes	86	25.6
	No	250	74.4
Distribution of type of Risk Behaviours			
Sexual activity	Yes	34	10.1
	No	302	89.9
Alcohol use	Yes	34	10.1
	No	302	89.9
Smoking	Yes	5	1.5
	No	331	98.5
Marihuana	Yes	7	2.1
	No	329	97.9
School Truancy	Yes	37	11.0
	No	299	89.0

Table 3: Relationship between Gender and Risk Behaviors among the Respondents.

There was a statistically significant relationship between gender and sexual debut ($X^2 = 15.838$, $p=.000$), truancy ($X^2 = 5.133$, $p=.023$), and risk behaviour status ($X^2 = 9.002$, $p=.003$). There was no statistically significant relationship between gender and alcohol use ($X^2 = 0.131$, $p=.718$), smoking ($X^2 = 1.827$, $p=.176$) and marihuana use ($X^2 = 1.313$, $p=0.252$).

Gender	Category 1	Category 2	Total	X^2 df P value	Remark
Female	Alcohol Use. Yes 16(9.5)	Alcohol Use No 152 (91.5)	168(100)	$X^2 .131$ df= 1 P=.718	Not Significant
Male	18(10.7)	150 (89.3)	168(100)		
Total	34(100)	302(100)	336(100)		
Female	Smoking Yes 1(0.6)	Smoking No 167(99.4)	168(100)	$X^2 1.827$ df = 1 P= .176 Fisher's exact =.186	Not Significant
Male	4(2.4)	164 (97.6)	168(100)		
Total	5(100)	331(100)	336(100)		
Female	Marihuana Yes 2(1.2)	Marihuana No 166(98.8)	168(100)	$X^2 1.313$ df = 1 P= 0.252 Fisher's exact =.224	Not Significant
Male	5(3)	163 (97)	168(100)		
Total	7 (100)	329(100)	336(100)		
Female	Truancy Yes 12(7.1)	Truancy No 156(92.9)	168(100)	$X^2 5.133$ df = 1 P= 0.023	Significant
Male	25(14.9)	143(85.1)	168(100)		
Total	37(100)	250(100)	336(100)		
Female	Sexual Debut Yes 6(3.6)	Sexual Debut No 162(96.4)	168(100)	$X^2 15.838$ df = 1 P= 0.000	Significant
Male	28(16.7)	140(83.3)	168(100)		
Total	34(100)	302(100)	336(100)		
Female	Risk behav. Yes 31(18.5)	Risk Behavior No 137(81.5)	168(100)	$X^2 9.002$ df = 1 P= 0.003	Significant
Male	55(32.7)	113(67.3)	168(100)		
Total	86(100)	250(100)	336(100)		

Table 4: Spearman Correlation of Risk Behaviors, Adolescent phase and Family Process Factors among the Respondents. N=336

Among the total respondents, phase of adolescence had a significant negative correlation with sexual debut ($r = -.126, p=.021$) and a significant positive correlation with mother attachment ($r=.162, p=0.003$). Sexual debut had significant negative correlation with father attachment ($r = -.168, p=.002$) and parental attachment ($r=-.182, p=.001$). Alcohol use had significant negative correlation with family functioning ($r= -.108, p=.047$) and mother attachment ($r= -.177, p=.001$). Marihuana had a significant negative correlation with parental attachment ($r=-.148, p=.007$). Smoking and truancy had no significant correlation with any of the family process factors. Risk behaviour had significant negative correlation with family functioning ($r= -.182, p=.001$) mother attachment ($r= -.150, p=.006$) and parental attachment ($r= -.123, p=.024$).

	Phase of Adol.	Family Function	Mother Attach.	Father Attach	Parental Attach.
Phase of Adol.	1.000	.006	.162**	.082	.055
Alcohol	.022 .683	-.108* .047	-.177** .001	-.027 .621	-.086 .117
Smoking	-.063 .253	.062 .259	-.066 .230	-.074 .177	-.109 .046
Marihuana	-.041 .451	.015 .782	-.074 .175	-.107 .050	-.148** .007
Truancy	-.094 .085	-.072 .185	-.083 .127	-.063 .251	-.023 .679
Sexual Debut	-.126 .021*	-.092 .094	-.085 .122	-.168** .002	-.182** .001
Risk behaviour status	-.068 .217	-.182** .001	-.150** .006	-.101 .066	-.123* .024

*Sig <.05. ** sig <.005

Table 5: Spearman Correlation of Risk Behaviors, Adolescent Phase and Family Process Factors among the Female Respondents. N=168.

There was a significant positive correlation between phase of adolescence and alcohol use ($r =.190, p=.014$). Alcohol use had a significant negative correlation with family functioning ($r= -.247, p=.001$) and mother attachment ($r= -.184, p=.017$). Smoking, marihuana use, truancy, sexual debut had no significant correlation with any of the family process factors. Risk behaviour had significant negative correlation with family functioning ($r= -.190, p=.013$) mother attachment ($r= -.292, p=.000$) and parental attachment ($r= -.152, p=.049$).

	Phase of Adoles.	Family Function	Mother Attach.	Father Attach	Parental Attach.
Phase of Adoles.	1.000	-.060	.055	.053	-.051
Alcohol	.190* .014	-.247** .001	-.184* .017	-.010 .894	-.144 .062
Smoking	.007 .924	.065 .403	.062 .425	-.081 .295	-.068 .378
Marihuana	.011 .892	-.002 .980	-.050 .522	-.115 .137	-.144 .063
Truancy	-.165 .033	-.044 .575	-.131 .092	-.123 .113	-.044 .570
Sexual Debut	-.114 .140	-.030 .697	-.142 .066	.088 .255	-.141 .069
Risk behaviour status	-.025 .745	-.190* .013	-.292** .000	-.083 .284	-.152* .049

*Sig <.05. ** sig <.005

Table 6: Spearman Correlation of Risk Behaviors, Adolescent phase and Family Process Factors among the Male Respondents. N=168.

There was a significant positive correlation between phase of adolescence and mother attachment ($r=.262, p=.001$). Sexual debut had significant negative correlation with father attachment ($r= -.231, p=.003$) and parental attachment ($r=-.222, p=.004$). Alcohol use had significant negative correlation with mother attachment ($r= -.169, p=.028$). Smoking cigarettes, marihuana use and truancy had no significant correlation with any of the family process factors. Risk behaviour had significant negative correlation with family functioning ($r= -.182, p=.018$).

	Phase of Adoles.	Family Function	Mother Attach.	Father Attach	Parental Attach.
Phase of Adoles.	1.000	.066 .395	.262** .001	.107 .167	.149 .054
Alcohol	-.102 .186	-.027 .729	-.169* .028	-.044 .575	-.026 .739
Smoking	-.080 .305	.066 .399	-.135 .081	-.077 .322	-.141 .069
Marihuana	-.056 .474	.027 .729	-.092 .237	-.107 .167	-.157 .042
Truancy	-.019 .810	-.097 .209	-.049 .527	-.020 .793	-.002 .980
Sexual Debut	-.089 .254	-.136 .079	-.061 .433	-.231** .003	-.222** .004
Risk behaviour status	-.048 .532	-.182* .018	-.032 .681	-.119 .124	-.095 .219

*Sig <.05. ** sig <.005

Table 7: Spearman Correlation of Risk Behaviors and Family Structural Factors among the Respondents. N=336.

In the total sample population, father’s educational status was correlated positively with smoking (r=.148 p=.006), truancy (r=.163 p=.003), sexual debut (r=.162 p=.003), and risk behaviour (r=.140 p=.010). Mother’s educational status had significant positive correlation with sexual debut (r=.163 p=.003), truancy (r=.109 p=.046), and risk behaviour (r=.118 p=.031). Parental separation was negatively correlated with truancy (r=-.144 p=.008), sexual debut (r=-.145 p=.008), and risk behaviour (r=-.171 p=.002) in the total population.

	Using alcohol	Smoking	Using marihuana	School truancy	Sexual Debut	Risk behaviour
Father Edustat	.058 .291	.148** .006	.099 .071	.163** .003	.162** .003	.140** .010
Mother Edustat	-.018 .738	-.049 .372	-.024 .656	.109* .046	.163** .003	.118* .031
Parents’ separation	-.035 .522	-.089 .104	-.096 .079	-.144** .008	-.145** .008	-.171** .002

*Sig <.05. ** sig <.005

Table 8: Spearman Correlation of Risk Behaviors and Family Structural Factors among the Female Respondents. N=168

Among the female respondents, father’s educational status had significant positive correlation with smoking (r=.169 p=.028) and truancy (r=.271 p=.000). Mother’s educational status was positively correlated with truancy (r=.222 p=.004). Parental separation was negatively correlated with truancy (r=-.234 p=.002).

	Using alcohol	Smoking	Using marihuana	School Truancy	Sexual Debut	Risk behaviour
Father Edustat	.014 .853	.169* .028	-.088 .254	.271** .000	.048 .535	.114 .143
Mother Edustat	.076 .329	.150 .052	.070 .365	.222* .004	.019 .810	.094 .224
Parents’ separation	-.064 .409	-.122 .114	-.174 .024	-.234** .002	.019 .810	.094 .224

*Sig <.05. ** sig <.005

Table 9: Spearman Correlation of Risk Behaviours and Family Structural Factors among Male Respondents. N=168.

Among the male respondents, sexual debut was significantly positively correlated with father educational status (r=.189 p=.014), mother educational status (r=.178 p=.021) and negatively correlated with parental separation (r=-.198 p=.010).

	Using alcohol	Smoking	Using marihuana	School truancy	Sexual Debut	Risk behaviour
Father Edustat	.084 .280	.132 .088	.093 .231	.074 .339	.189* .014	.132 .088
Mother Edustat	-.114 .142	-.026 .742	-.023 .767	-.005 .944	.178* .021	.083 .283
Parents’ separation	-.008 .920	-.082 .291	-.052 .501	-.087 .262	-.198** .010	.151 .051

*Sig <.05. ** sig <.005

Table 10: Spearman Correlation Matrix of Risk Behaviours among the Respondents. N=336. Sig (2 tailed)

Among the total respondents, smoking and sexual debut correlated with all the other risk behaviors. The strongest inter correlations were found between smoking/ marihuana ($r=.670$ $p=.000$), smoking /alcohol ($r=.366$, $p = .000$), marihuana /alcohol ($r=.297$, $p= .000$) and smoking /sexual debut ($r=.285$, $p= .000$).

	Using alcohol	Smoking	Using Marihuana	School Truancy	Sexual Debut
Using alcohol	1.000	.366** .000	.297** .000	-.103 .060	.215** .000
Smoking		1.000	.670** .000	.192** .000	.285** .000
Using Marihuana			1.000	.082 .134	.227** .000
School truancy				1.000	.134* .014
Sexual Debut					1.000

*Sig <.05. ** sig <.005

Table 11: Spearman Correlation Matrix of Risk Behaviours among the Female Respondents. N=168. Sig (2 tailed).

Among the female respondents, smoking and sexual debut correlated with all the other risk behaviors. Truancy had significant correlations with other risk behaviors except alcohol. The strongest inter correlations were found between smoking/ marihuana ($r=.705$ $p=.000$), smoking /sexual debut ($r=.405$, $p= .000$) and smoking /truancy ($r=.279$, $p = .000$).

	Using alcohol	Smoking	Using Marihuana	School Truancy	Sexual Debut
Using alcohol	1.000	.239** .002	.151 .050	.067 .385	.156* .043
Smoking		1.000	.705** .000	.279** .000	.402** .000
Using Marihuana			1.000	.183* .134	.275** .000
School truancy				1.000	.196* .011
Sexual Debut					1.000

*Sig <.05 ** sig <.005

Table 12: Spearman Correlation Matrix of Risk Behaviours among the Male Respondents. N=168. Sig (2 tailed).

Among the male respondents, smoking and sexual debut correlated with all the other risk behaviors. Truancy had significant correlations only with smoking. Alcohol had strong correlations with all the other risk behaviors except truancy. The strongest inter correlations were found between smoking/ marihuana ($r=.662$, $p=.000$), Alcohol/smoking ($r=.451$, $p=.000$), Alcohol / marihuana ($r=.392$, $p=.000$), alcohol /sexual debut ($r=.258$, $p= .001$).

	Using alcohol	Smoking	Using Marihuana	School Truancy	Sexual Debut
Using alcohol	1.000	.451** .000	.392** .000	.126 .105	.258** .001
Smoking		1.000	.662** .000	.154* .046	.244** .001
Using Marihuana			1.000	.025 .746	.204* .008
School truancy				1.000	.082 .289
Sexual Debut					1.000

*Sig <.05. ** sig <.005

Table 13: The relationship between gender and multiple risk behaviour status among the respondents.

Multiple risk behaviour status occurred in 22(6.5%) participants. The relationship between gender and multiple risk behaviour status was not significant. Calculated Chi square = 4.093 df =1 p= 0.04. fisher exact test p= 0.07.

Gender	Single Risk Behavior	Multiple Risk Behavior	Total
Male	37(67.3)	18(32.7)	55(100)
Female	27(87.1)	4(12.9)	31(100)
Total	64(100)	22(100)	86(100)

IV. Discussion

The prevalence of risk behavior in this sample population was low (25.6%) compared to that in USA where more than 50% of high school students have engaged in one risk behavior or other.²⁹ Alcohol use in this sample population (11%) was higher than that found in Ibadan(5%) among secondary school students.³⁰ It is however low compared to USA and a study in Benin City by Akanni et al. which found a prevalence of 55.9% for “ever use” of alcohol among a similar population.³¹ This difference may be accounted for the difference between use status (ever use and current use) in the study instruments. There was no significant gender predilection for alcohol use in this study unlike in the US study and the Akanni study. There was also no significant relationship between alcohol use and social class in this study unlike the Enugu study.³² The reason for this may be found in the family process correlates of alcohol use in this study showing that alcohol use may have been “precipitated” by family problems.

Cigarette use was very low (1.5%), less than in the USA and the Enugu study (8.6%) and Akanni (9.2%) study. Gender was not significantly associated with smoking cigarette and this finding was different from the Akanni study.³¹

Marihuana use in this study (2.1%) was similar to the Akanni study and in Ibadan (3%) but much lower than in Lagos (7.7%)³³ and in America (19.8%).²⁹ Gender was not significantly related to marihuana use in this study similar to Akanni’s findings but different from the Lagos and American studies. The reasons for these differences are not readily obvious.

Sexual Debut (10.1%) was lower than in America (39.5%) but similar to the study in Enugu (16%) and also similar in having male predominance. The details of correlates of sexual debut in this sample population have been extensively discussed in another paper.²⁴

Prevalence of truancy was moderate (11%) and was similar to the Enugu study (13%), Epe study (19%)³⁴ SW Nigeria (16.5%).³⁵ This study found a significant male predominance for truancy as in the study in SW Nigeria³⁵ but unlike the Enugu study.³¹ The study in Epe found no relationship between truancy and gender and socioeconomic status. This is different from findings in this study showing a significant relationship with gender and correlation with parents’ educational status and supported by the Enugu study which also found a relationship between socioeconomic status and truancy. The difference may be in the study instruments or school related factors encouraging truancy.

Correlation with family process factors: family functioning, mother attachment and father attachment.

The gender based differences in the relationship between risk behaviors and family variables are not very consistent.³⁶ However Jaccard has advocated that efforts to understand them especially in the context of unique determinants for specific risk behaviors in view of intervention is important.³⁶ In this cohort, the pattern of perceived parental attachment and family functioning was similar for both genders but in correlation with specific risk behaviors, important differences emerged. Risk behavior status, alcohol use, sexual debut and marihuana use had significant correlation with family process factors while truancy and smoking had none.

Included in the construct of family functioning, are relationships (especially parental harmony), roles, rules, discipline structure and communication. These provide the physical and affective milieu in which parenting practices are carried out including parent child attachment, monitoring and supervision, provision of instrumental and affective needs and socialization etc. It is well established that parenting practices and parental warmth combine to buffer adolescents against risk behaviour.^{13,14} These factors have been evidenced to show gender differences in their impact on adolescent adjustment and behaviour.¹⁰ Monitoring is an important tool for reducing risk behavior opportunities and is facilitated by self-disclosure by the adolescent which is made possible by a warm parent adolescent relationship.^{18,19} The impact of these factors on the adolescent has shown gendered influences confirmed by this study. Being involved in risk behavior was significantly negatively correlated with family functioning, mother attachment, and parental attachment for all the participants. Among the girls, it was maintained for all three family process factors with a stronger correlation than for boys. Among the boys, it was significant only for family functioning. Family factors promoting development of the resilience required to resist engagement in risk behavior has gendered differences with boys requiring families with a male role model, greater structure and more rules than girls.¹⁰ Other research has evidence that parental consistency, monitoring and parental separation were more important in predicting externalizing symptoms in boys.^{9,36,37} while girls have been shown to have more social control, more family protective factors (parent adolescent bonding, communication etc.), are more home bound and so are less exposed to risk situations.^{36,38}

Among all the respondents not differentiated by gender, mother attachment was positively correlated with adolescent phase. This relationship was maintained for boys but not for girls suggesting that as boys

mature, their relationship with the mothers improve. Among girls, educational status was negatively correlated with mother attachment indicating that girls consider their educated mothers deficient in providing affective care. This may be attributed to the greater need for emotional warmth among girls and their educated mothers being in demanding career jobs limiting their capacity for affective care.

Alcohol use had significant negative correlation with mother attachment among the total respondents. This effect was maintained for both boys and girls but the correlation was stronger for the girls. This finding is supported by the study by Akanni et al in Benin city in which alcohol use was related to unsatisfactory adolescent-parent relationship and by findings in a European study where parental bonding reduced intense alcohol use.³⁹ Another study found that uninvolved parenting style resulted in alcohol and tobacco use twice as much as those from authoritative homes.⁴⁰ The impact of mother attachment on alcohol use is supported by the finding that having an uninvolved mother was significantly worse than having uninvolved fathers.⁴⁰ This is explained by the fact that mothers are primary attachment figures for children and that mother attachment is known to provide a secure base for adolescents from which to explore the world and establish themselves.⁴¹ Where this security is lacking, alcohol probably offers a means of dealing with the resultant psychoadversity especially depression. This has been demonstrated by a study showing that depression predisposes to alcohol use for both adolescent boys and girls.²³ The role of depression as mediator of the relationship between family dysfunction and adolescent girls' alcohol use has been evidenced by a study by Ohanessian et al.²³ Similar to this the importance of the adolescent perception of family processes in this regard is stressed by the finding that alcohol and substance use correlated more with adolescent rating of parenting practices than with parental assessment.²²

Alcohol use was also significantly negatively correlated with family functioning in the total sample population, but was maintained only for the girls and not the boys. This is also similar to findings earlier cited.²³ This can be explained by the fact that girls are more emotionally affected by dysfunctional processes in the family and may use alcohol to cope. These findings suggest that adolescent alcohol use has a strong link with psycho emotional disturbances associated with perceived family process disorders with impact more on girls than boys. Parental separation was not correlated with alcohol use unlike in the study on European adolescents where alcohol use was more intense among single parent households.³⁹

Among the total respondents, sexual debut was significantly more prevalent among boys showed a significant negative correlation with father attachment and parental attachment. This effect was maintained only for the boys but not the girls. This could be explained by the fact that both physical and emotional father absence means that the boys lacked the needed values transfer, positive behavioral modelling, monitoring and discipline needed to teach them sexual morals and delay sexual debut.¹⁰ This is also very important in our culture which is male dominant and discipline for boys is more possible from the fathers than mothers. It is also supported by literature showing that father attachment is very important in preventing risk behavior for boys.⁴¹ It has also been found that monitoring (especially by fathers) was more important in preventing sexual risk behavior for boys and parental warmth and emotional connection for girls.^{10,14} Other authors present contrary evidence where father absence (physical or emotional) was associated with early sexual debut for girls.⁴⁰ These findings suggest the need for gender considerations in specific family focused prevention programs targeting sexual debut.

Marihuana use had a significant negative correlation with parental attachment but this effect disappeared in the gendered subgroups. This indicates that deprivation of parental warmth predisposes to marihuana use as with other drugs.⁴⁵ Other studies including larger numbers of marihuana users are needed to further explore this relationship in our environment and its gendered implications.

Family structural factors: father and mother educational status and parent's separation.

All three family structural factors had significant negative correlation with truancy for girls and with sexual debut for boys. The effects in the gendered sub groups was stronger than in the total population. Also the correlation with risk behavior status disappeared in the gender subgroups showing that the "gender specific behaviors" of truancy among girls and sexual debut among boys were the main contributors to that effect in this sample population. The "gender specific risk behaviors" of truancy for the girls and sexual indulgence for the boys may represent gateway to other risk behaviors in this sample population. Truancy has been tagged a signal behavior indicating the adolescent is headed for engagement in other risk behaviors and losing focus on achieving a positive outcome in life.⁴² Sexual debut has also been found to have impact on multiple risk behavior involvement.⁴³ The findings in this sample population that girls' perception of maternal attachment reduced with increasing mother educational status and for the boys, that sexual debut was also correlated with father attachment demonstrate that family structural problems predispose to process deficiencies in the pathway to risk behavior among adolescents.

Parental education especially the father's determine socioeconomic status (SES) which has been evidenced to influence parenting practices and family functioning. Lower SES increases parental stress which

affects parental behavior and capacity for emotional bonding and providing good functional home environment.⁸ However, high SES when associated with over indulgent parenting also leads to poor outcome.^{8,40}

Another contributory factor for the relationship between risk behaviors and parental education may be the fact that educated parents are most likely engaged in demanding career jobs reducing the capacity for monitoring and supervision especially for the mothers.⁵ Also, educated parents are likely to be able to afford more luxuries for their children and coupled with lack of supervision create an indulgent environment promoting risk behaviors.^{39,40} The positive correlation between smoking and father's educational status among the girls may be attributed to this.

Parental separation was significantly correlated with sexual debut, truancy and risk behavior. The relationship between sexual risk behavior and parental separation among adolescents is supported by evidence from other authors.⁴⁰ This is a consequence of impaired family functioning and parental attachment found in single parent homes.¹⁸ It has been attributed to a number of factors including reduced capacity for child bonding due to stress, reduced capacity for provision of instrumental and affective needs and also negative psychopolitical negotiations involving any parent substitutes where they are present.⁴⁴

Inter correlation among the risk behaviors.

In the total population the only risk behavior that was not correlated with truancy was alcohol use. It is possible that this is due to the fact that alcohol is more difficult to access in the day time. Truancy was correlated with smoking for both boys and girls. This correlation was positive and stronger among the girls than for the boys. A positive correlation was also established between truancy and marihuana use only among the girls. The inter correlation between marihuana use and smoking was very strong and the highest inter correlation among all the risk behaviors. This was maintained for both boys and girls but was stronger among girls than boys. This suggests that when girls smoke, it has greater adverse implications than in boys. Given the fact that smoking has strong correlation with all the other risk behaviors, this indeed confirms truancy as an important gateway risk behavior among the girls in this study. The impact of truancy among the girls is negatively remarkable given that these correlations exist despite the finding that truancy was significantly more prevalent among boys in this sample population. Also truancy signifies loss of focus on educational development with grievous future implications.⁴²

For both gender, smoking and sexual debut were correlated with all the other risk behaviors. Alcohol was the differentiating link for the boys and truancy for the girls. The inter correlations for smoking, marihuana, sexual debut and truancy was stronger among the girls than the boys. The inter correlation between alcohol, smoking, marihuana and sexual debut was stronger among the males. This is in keeping with other studies where use of stimulants was correlated with sexual risk behaviour.^{29,45,46} The inter correlations between risk behaviors has been well documented.⁸ It has been attributed to co-occurrence of opportunities and the potentiating effect of one on the others and also to personal predisposition to multiple deviant behaviors as in the problem behavior theory of Jessor.¹¹ The need to study the correlates of specific risk behaviors despite the inter correlations has also been stressed.⁸

Multiple risk behavior status.

Engagement in multiple risk behavior occurred in about a quarter of the participants engaged in risk behavior (about 6.5% of the participants) and there was no gender difference. This finding is supported by findings in other studies.⁷ This implies that active screening and intervention will be useful in early detection to curb the progression to multiple risk engagement.

Summary: This study found that gendered influences exist in the relationship between adolescent risk behavior status and family process factors with maternal attachment and family functioning being significant for girls and only family functioning for boys. All three family structural factors of parental separation, maternal and paternal educational status had positive significant correlation for truancy for girls and sexual debut for boys. Alcohol use was significantly negatively correlated with maternal attachment for all the participants irrespective of gender. Inter correlations among the risk behaviors showed alcohol as differentiating link for the boys and truancy as differentiating link for the girls to the common central risk behaviors of sexual debut and smoking. Inter correlations among the risk behaviors was stronger for girls than for the boys except for alcohol.

V. Conclusion

This study has confirmed that gender significantly impacts the trajectory from impaired family process and structural factors to diverse risk behaviors among adolescents.

VI. Recommendations

1) The findings from this study indicate that gender considerations should be employed in interpreting family correlates of adolescent risk behavior in planning and deployment of interventions for at risk adolescents.

2) More studies are needed globally and in our locale to further explore these interactions and establish their pathway to risk behavior.

Limitations: The risk behavior prevalence recorded in this study depended on the participants' report and may have been subject to bias.

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