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Adolescent Transition: Impact on Pattern of Perceived Family Functioning, Parental Attachment and Relationship with Family Structure and Risk Behavior

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Abstract:
Background: Family approach to adolescent care is advocated to harness family protective factors and reduce adverse factors for adolescent risk behavior. Family Physicians can take the lead in providing this care but data on adolescent transition and perception of their family processes is lacking in our locale. There is need to bridge this gap and broaden the perspectives for successful adolescent care.**Aim and Objectives:** To determine the pattern of perceived family functioning and parental attachment, the impact of family structure and relationship to risk behavior among adolescents using the APGAR Questionnaire and Family Circle.**Method**: Over four hundred secondary school adolescents randomly selected participated using self administered customized instruments. Data was analyzed using the SPSS 21.p value was set at 0.05.**Results**: Most respondents (56.3%) rated their families as highly functional but deficient in the Growth and Affection domains of the APGAR. Parental attachment was healthy for majority (91.4%) with mother attachment (86.9%)significantly higher than father attachment (57.7%). Divorce had significant negative impact on functioning and all dimensions of attachment worse than families with a deceased parent. Work separation negatively impacted functioning, parental attachment was preserved. Risk behavior prevalence was high (25.6%), had significant relationship with family structure, functioning and parental attachment.**Conclusion**: Parental attachment mediates the impact of family structure and functioning on adolescent risk behavior. Most adolescents had healthy parental attachment, in functional families but with deficiency in the Growth and Affection domains and Father attachment indicating needed intervention to optimize family conditions for positive adolescent development.
Keywords: adolescent, family functioning, family structure, parental attachment, risk behavior.

1. Background

Adolescent health is one of the domains of generational medicine offered by the family physician. Holistic care for the adolescent clients demands a good understanding of the multi dimensional changes they undergo, impact on their behavior and interaction with the family.[1,2,3]The family is the primary socialization and nurturing agent for her members and also the context in which health, disease and recovery are domiciled. The adolescent is that person between the ages of 10 and 19years transiting from childhood to adulthood. The developmental tasks and challenges for the child and the family at this stage are unique. The population of adolescents in the world is about 1.8 billion and 37.8 million in Nigeria.[4,5] The social and health burden of adolescent risk behavior is rising and health system led interventions have become necessary.[6]The socio medical challenges in adolescence include risky sexual behavior and it's adverse consequences of unwanted pregnancies, interrupted education, unsafe abortions, STI and HIV/AIDS. Other risk behaviors include alcohol use, smoking, and substance abuse, pathological internet use, truancy, reckless driving and violence resulting in accidents and injuries. Psychopathologies including anxiety, depression and suicide may result from maladjustment to these challenges.[2]

The adolescent transition occurs in three phases, early adolescence from age 11-13,mid adolescence age14-16 ,and late adolescence 17-19years. The changes progress with the phases and span biological, psychological, cognitive, emotional and social domains. The changes are rapid and the pace varies with domains within the same child and between children. The social and emotional developmental tasks at this stage include individuation, development of self identity, esteem and self efficacy, goal setting for the future, educational attainment and career planning, management of social domain and regulation of peer influence and risk taking.[7,8]Puberty signals the onset of adolescent transition occurring earlier for girls than boys. Along with the appearance of secondary sexual characteristics and growth spurt, the child develops a heightened interest in sexuality and the opposite sex.[7] Cognitive development in the early phase progresses from concrete thinking to a growing interest in the abstract, expanding intellectual interest, and moral thinking but with greater preoccupation with present than the future. This further progresses in middle phase to deeper moral reasoning, meaning of life and matures in the late phase, to good judgement, stable moral reasoning, ability to delay gratification, set goals and plan for the future.

Psycho emotional development involves an increased awareness of self, capacity for independent thinking, and growing demand for autonomy. The influence of peers begins to compete with that of parents. These

changes intensify in the middle phase, with intense self involvement, high expectations, low self concept, defiance of rules and norms and limit testing. In the late phase, maturity sets in with a firmer self identity, emotional stability and becoming less self centered. Sociocultural norms regain their meaning and importance. There is increased capacity for independence and self reliance. Peer relationships remain important and serious romantic relationships are more likely[7,8].

The adolescent transition impacts on the family and its dynamics in keeping with the family systems theory. Family Functioning defines the way in which family members interact to meet the goals of the family unit and her members.[3] The most essential tasks of the family include to reproduce, nurture and socialize their children and provide social support for their members. The family with adolescents is in the fourth stage of Duvall's family life cycle.[3,9] The developmental tasks of the family and it's dynamics varies with the stages. The family grows through it's life cycle with transitions from one stage to the next. The transition through these stages is towards greater differentiation and independence of her members. Transitory periods create stress that threatens the stable state of the dynamics of the family.[9] Adolescent transition is widely known to be turbulent and impacts major negative stress on the dynamics of the family. Successful management of earlier stages with appropriate parenting styles and practices and adequate understanding of expected changes in adolescence enables the management of stage 4.[10]

The dimensions of family functioning include cohesion, flexibility and communication.[11] Cohesion refers to the degree of togetherness, mutual separation and boundaries between members, sharing and expression of affection, unity in managing family and individual's problems and issues and sharing of tasks for benefit of all and protection of both physical and psychological integrity. On the APGAR, it is measured by the Adaptation, Partnership and Affection domains.[12.] Optimum functioning achieves connectedness which allows for growth of individual members while retaining the mutual interdependence that sustains the system.[3,11]

Flexibility determines the structure (leadership and organization) and capacity to adapt while maintaining the balance in the system. Constant evolution of members as they grow requires flexibility in rules, roles, relationships and regulation. This dimension addresses the capacity to allow for differentiation of members and individuation with reduction in control appropriate to achievement of milestones and self efficacy.[13] It is measured by the Growth domain in the APGAR. It determines psychological autonomy granting. The structure established, coupled with parental attachment provides an essential secure base for the children from which they can explore the world and establish themselves.[13] Psychological autonomy granting is approximated on the APGAR by the Growth domain.

Communication is the matrix that enables all interaction and should be adaptive encouraging cohesion and evolving in content and style as the children grow.[9] Transfer of family values, moral values and regulation, expression of affection etc. depend on the content, clarity and style of both verbal and non verbal communication, freedom of expression and respect for others' feelings. Time spent together for the family encourages good communication and cohesion and is also a reflection of successful dynamics in those dimensions. This is measured by the APGAR in Resolve domain.

The parental dyad is the subsystem that leads the family and determines its functional state. The parent child subsystem derives from the global family functioning and impacts it[9,14]The harmony of the parental dyad affects the family functioning and development of self-esteem, sense of physical and psycho emotional security in the children. Parenting style determines the manner parenting functions are executed. It refers to the balance between warmth, show of love and affection and demandingness (demand for appropriate standards of behavior and achievements) with which parents interact with their children. Parenting style is established before adolescence but arrival at Stage 4 meets the challenges posed by opposition and questioning of the individuating adolescent, requiring adaptation to meet these challenges.[15]The subsisting dynamics is a result of the bidirectional effects between parents and the adolescents, their personalities, adaptive capacity and sociocultural circumstances.[16,17] Authoritative parenting has been shown to have the best outcome for adolescents through it's main components of parent child connectedness(PCC) and psychological autonomy granting [13,15] PCC describes the quality of emotional bond between parent and child (Parental Attachment) and the degree to which this bond is both mutual and sustained over time. It's essential elements include a climate of trust providing emotional bonding and physical, psychological and material support, protection and encouragement, communication that signals love and affection and transmits shared values, flexibility, empathic responsiveness to evolving changes in the child, appropriate structure in discipline, monitoring, guidance and shared time together [9,18] A warm emotional bond or parental attachment (PA) enables the connection that makes the child receptive to other components of PCC and which in turn reinforces the parent's ability to sustain it.[13] Parental attachment mediates the impact of parenting on adolescent behavior , achievement, risk taking and mental health.[19]. Lack of PA predisposes children to depression, anxiety, and risk behavior with internalizing symptoms in girls and externalizing symptoms in boys.[10]

Psychological autonomy granting refers to the freedom for the adolescent to develop his own thoughts and ideas, express them and gradually take control of their decisions and actions.[15]Autonomy spans various domains

including personal, moral, conventional and prudential domains. Authoritative parenting grants autonomy over personal matters but maintains some degree of control over the others.[15.]

Factors influencing family dynamics include, family structure, personality type and compatibility of members especially the marital dyad, socioeconomic status, educational status, culture, religion, social support net work of the family including extended family and friends, social welfare, schools, religious organizations, their availability and the capacity of the family to harness them effectively. Family structural factors like divorce, death and work separation alter the dynamics by affecting the capacity of the parents to provide good functioning, parental attachment, monitoring and supervision and therefore influence adolescent outcome.

Adolescent transition results in rapidly changing needs, roles, skills, competencies and personality in the child demanding that parents and family struggle to make rapid adjustments in these functioning dimensions to maintain homeostasis while battling with relinquishing control over their child amidst concerns on the threats in the outside world.[9] The emotional and cognitive changes in the adolescent provoke conflict as they test limits, defy rules and seek to experiment. It is a necessity in the child's development to adulthood and so it's impact on the family dynamics is a normative stressor.[20]

The functional status of the family affects all the members and subsystems in the family and is evidenced by their behavior, psycho emotional well being and sense of social support. [21]. Most families adapt successfully with a good outcome for the child and family but a minority fail to adapt .The result is a negative outcome for the child, psycho emotional adversities for the child and parents especially the mother and dysfunction for the family necessitating intervention[17,21,22,23]

Adolescent health care is essentially about risk behavior screening, education and counselling. Prevention science requires a strengthening of protective factors and reduction of risk factors.[2,24] Family functioning and parental attachment mediate the influence of the family on adolescent risk behavior. The ability to achieve positive behavioral change or harness the families in interventions requires understanding of the family and its dynamics for the index adolescent. Use of the Family Circle and the APGAR Questionnaire in routine care can identify abnormalities in the family early and facilitate interventions ensuring the strengthening of family protective factors for positive adolescent development. This has been advocated by many authors with calls for strategies for action.[2,6] Strengthening the capacity of Family Physicians (FP) to take the lead in this regard using these simple instruments is the goal of this study.

1.2 Justification: A large body of evidence exists on the impact of parental attachment and family functioning on adolescent transition outcome but the incorporation of this evidence in routine clinical care is lacking. This is evidenced by lack of measures for family factors in adolescent screening instruments. Physicians therefore face challenges in successful preventive behavior modification for their adolescent clients because family is not involved especially prior to initiation of risk behavior. There is a dearth of health system structures and personnel for comprehensive adolescent health in our locale as in most LMIC. Studies in this domain are also lacking and hence this study seeks to fill the gap and raise the awareness of FPs and policy makers on the need to broaden the perspectives and facilities for adolescent care.

1.3 Aim and Objectives: To determine the pattern of perceived family functioning and parental attachment, the impact of family structure and their relationship with risk behavior among adolescents using the Family Circle and APGAR questionnaire with a view to facilitating family approach to adolescent care.

2. Materials and Method

Study Design: The study was 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 is estimated at 344, 024.[5]The prevalence of perceived highly functional families among adolescents is 84.5% [25]

Selection criteria:

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

Exclusion: All students in senior class who were below 10years or above 19years 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 179. 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 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 socio demographic variables including information on family structure and risk behavior.

Section B: the APGAR Questionnaire. It is a standardized validated self administered family function screening instrument developed by Smilkstein.[12] 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.[26] 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. Comparism of means was done using student t test for continuous variables and Wilcoxon rank test for ordinal paired variables.

1.5 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. 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 (8%), work (9.2%) and widowhood (10.4%). Most of the families (72.9%) were in the fourth stage of the family life cycle. Prevalence of risk behavior was high at 25.6%. Majority (74.4%) of the respondents did not engage in any risk behavior (Table 1).

To facilitate the test of association, the categories, none and primary in maternal and paternal educational status were merged into one as primary.

Most of the respondents were very close to their mothers (58.3%) 28.6% were close, 8.3% were not close and 4.8% considered their mothers as not important.(Table2)

Father attachment was spread among the respondents with 31.5% being very close to their fathers, 26.2% were close 30.1 % were not close and 12.2 % considered their fathers as not important. (Table2)

The difference between father attachment and mother attachment was significant. Wilcoxon Rank test Standardized test statistic =8.199. Asymp. sig =0.000

To facilitate the test of association, the categories, not close and not important in maternal and paternal attachment were merged into one as not important.

Most of the respondents had Very Healthy Attachment to their parents (53.9%). Healthy Attachment was found in 37.5% and Poor Attachment in 8.6% (Table 2).

Most of the respondents rated their families as highly functional (56.3%). Moderate dysfunction was found in (32.7%) and severe dysfunction in 11.0% (Table 2).

For all the respondents, the mean total APGAR score of 7.12 put most of them in the highly functional category. The highest mean scores occurred in the Partnership and Resolve domains of the APGAR. (1.51) the least scores were found in the Growth and Affection domains. For both sexes, a similar distribution was found but females scored lower in the Growth domain than the males. While the males scored significantly lower in the Partnership domain than the females (Mann Whitney U. test =0.013). Both sexes had almost equal low scores in the Affection domain (Table 3)

Respondents' gender had no significant relationship with any of the family factors: Family Functioning: Calculated X^2 = 1.008 at df 2 p value=0.604. Parental Attachment: Calculated X^2 = 5.812 at df 2 p value=0.055. Father Attachment: Calculated X^2 = 0.991 at df 2 p value=0.609.Mother Attachment: Calculated X^2 = 0.548 at df 2 p value=0.761. (Table 4)

Phase of adolescence had no significant relationship with perceived Family Functioning (Calculated X^2 = 2.172 at df 4 p value=0.704.) and Parental Attachment. (Calculated X^2 = 2.197 at df 4 p value=0.699). (Table 5)

Both Father and Mother Attachment significantly reduced from early to late adolescence.(Father Attachment: Calculated X^2= 10.509 at df 4 P value=.033. Mother Attachment: Calculated X^2 = 9.940 at df 4 p value=.041)(Table5).

Respondents' parents' educational status had no significant relationship with family functioning. Father's Education:CalculatedX^2 chi square = 4.244 at df=4.p value=0.374.Maternal education:CalculatedX^2 chi square = 3.800 at df=4.p value=0.434. (Table 6)

There was no significant relationship between Paternal Education and Father Attachment. Calculated X^2 = 7.202 at df=4.p value=0.126.(Table 7)

There was no significant relationship between Maternal Education and Mother Attachment.CalculatedX^2 = 3.968 at df=4.p value=0.410.(Table 7)

There was a significant relationship between Parents' Separation and both Parental Attachment and perceived Family Functioning.(PA: CalculatedX^2 = 11.565 at df 2 p value=0.003. FF: CalculatedX^2 = 8.519 at df 2 P value=0.014).(Table 8)

Among the respondents whose parents were divorced, the scores in the domains of the APGAR showed deficiencies in adaptation, growth, affection and resolve domains much worse than the mean scores for all the respondents and compared to the other types of separation. The respondents in death separation subset had deficiencies only in partnership and affection domains compared to the total respondents. The respondents in the work separation subset had better scores compared to the total respondents in the adaptation, affection, and resolve domains.(Table 9)

Parents' separation by divorce had a significant relationship with all family factors: Family Functioning. Calculated X^2 =7.189. at df =2. P value =0.027. Parental Attachment: Calculated X^2 = 16.801 at df 2.p value =0.000. (Table 10)

Father Attachment. Calculated X^2 =9.545 at df=2 p value =0.008. Mother Attachment: Calculated X^2 =15.206 at df =2.p value =0.000. (Table 10)

There was no significant relationship between Parents' separation by death and Family Functioning.(CalculatedX^2 = 1.781at df=2.p value =0.441) and Mother Attachment.(CalculatedX^2 =1.407 at df 2. p value= 0.495). (Table 11)

There was a significant relationship between Parents' separation by death and Parental Attachment.(Calculated X^2 =10.270 at df 2. p value= 0.006.) and Father Attachment.(Calculated X^2 =7.777 at df 2. p value= 0.020.) (Table 11)

Parent separation by Work had a significant relationship with perceived Family Functioning. Calculated X^2 =16.913at df 2. P value = 0.000. (Table 12)

Parents' separation by Work had no significant relationship with all Attachment dimensions. Parental Attachment. CalculatedX^2=3.488 at df 2. p value= 0.175. Father Attachment: Calculated X^2 = 0.918 at df=2. P value=0.632 Mother Attachment: CalculatedX^2 = 1.365 at df=2. P value= 0. 505. (Table 12)

Risk Behavior had a significant relationship with Perceived Family Functioning. (Calculated chi square = 12.248 at df 2 P value=0.002) and Parental Attachment. Calculated chi square = 18.185 at df 2 P value=0.000. (Table 13) and Parents' Separation. Calculated X^2 =9.787. at df 1. P value =0.002. (Table 14)

1.6 Discussion

The majority of the respondents rated their families as highly functional at 56.3%, similar to findings in Japan using the APGAR[29] but lower than 80% and above found in USA [28] and in two teaching hospital based studies using the APGAR questionnaire by Muyibi at al[25] in Ibadan and Olowokere[27] at Ife both in SW Nigeria. This suggests that good health seeking behavior is an attribute of highly functional families. Moderate dysfunction was found in 37% of respondents in this study showing that a significant proportion of adolescents are living in

family circumstances not optimal for their development. Moderate dysfunction is often transitioning and amenable to light intervention by the Family Physician which could be addressed by family conferencing, facilitating insight and strategies for correction.[29] The burden of severe dysfunction was low but very significant because of its adverse consequences on positive adolescent development. Severe dysfunction is usually more complex and requiring major specialized intervention which unfortunately is lacking in our environment. There is a dearth of clinical psychologist, marital and family therapists.

The adaptation and resolve domains received the highest mean scores and the growth and affection domains were lowest. This pattern was similar among males and females but the boys scored significantly lower in the partnership domain. The high rating of the adaptation domain shows that most of the respondents were satisfied with the way their families work together to meet challenges and they have a good sense of family social support. The partnership domain was significantly lower for the boys suggesting gender based differences in the way the family involves adolescents in issues or gives them audience for personal concerns. This could be attributed to the earlier maturity of girls making them valid participants in planning and execution of family plans earlier than boys.[8] Functional Father absence could also be another reason as the boys may model non involvement displayed by their fathers.[14] On personal grounds, they may not want to discuss gender sensitive issues with their mother and given the poor father attachment found in this study, they are left without any confidant within the family. This has been demonstrated in studies showing that boys more than girls find it difficult to discuss issues that bother them with their parents.[30] The growth domain approximates psychological autonomy granting and received low scores for both sexes. This is in keeping with the nature of adolescent transition and reflects the conflict between the adolescent and parents in trying to balance the need for individuation and autonomy and parental control.[1,10]Where there is no autonomy granting, there is tendency to increased peer orientation often with adverse outcome.[31]

The domain of affection also received low scores showing the respondents were unsatisfied with the sharing and expression of affection in their families. This in keeping with literature and adolescent transition and reflects the internal conflict in the personality of the adolescent. Drive for autonomy creates conflict and distance between them and parents.[18] Peer influence discourages overt expression of affection between them. However the low score in this domain demonstrates their need for affection and calls for modification of family process especially to increase parent child connectedness.

The domain of resolve had a high mean score suggesting the respondents were satisfied with the amount of time spent with the family. However the amount of time spent with the family was not explored. This rating could apply either way as the peer oriented child will be satisfied with less time spent with the family. There is need to ascertain this in personalized clinical care in order to make valid conclusions about the domain. Studies have however shown that adolescents value time spent with the family.[32]

Father and mother educational status did not have significant relationship with family functioning. This is different from the Ibadan study where they found a significant relationship between social class and family functioning.[25] Respondent's gender also had no relationship with perceived family functioning unlike in the study earlier cited where females had better perceived family functioning. The hospital based nature of the study is probably attributable for this as earlier mentioned.

The distribution of Parental Attachment showed that over 90% of the respondents had healthy attachment to at least one of the parents. This finding is similar to that in a study at Ogbomoso Nigeria showing that more than 90% of the school adolescents were close to their parents.[33]This was better than the distribution of family functioning. It reflects good dynamics of the parent child sub system despite the state of the global dynamics of the family and therefore, why it has more direct impact on the child's behavior.

Parental attachment has been shown to mediate the impact of parent child connectedness on adolescent behavior and achievements and is associated with their psycho emotional wellbeing.[10,34] Lack of parental attachment results in internalizing behaviors in girls and externalizing behavior in boys.[35] Emotional bonding enables adolescent identification with family values which facilitates the capacity of the parents to provide PCC.[13] It also affects adolescent self disclosure and therefore facilitates monitoring of adolescent behavior.[36]

Age of the respondents captured as phase of adolescence did not have a significant relationship with family functioning and parental attachment but was significantly related to mother and father attachment. This is in keeping with literature and the nature of adolescent transition with increasing independence of the child. Parental attachment remains stable because the child depends on the structure and stability offered by PA to explore and establish himself in the world. Evidence has shown that individuation is supported and nurtured to positive outcome by PA.[13]Parental attachment varies through the phases of adolescence challenged by conflict provoked by the demand for autonomy. Conflict starts in early adolescence rises through middle and settles in late adolescence.[17,18,21] The resulting dynamic is a result of the bidirectional effect of adolescent behavior on parental support.[28] Pathological conflict sometimes occurs over core family values, religion or drugs resulting in violence in about 18% of families with consequent physical and psycho emotional adversities for children and parents. [37]Successful transition results in an equitable peer like relationship between parents and the children with

restoration of close emotional bonds.

Parent educational status did not have significant relationship with parental attachment contrary to the expectation that educational status determines socioeconomic well being and should affect parenting practices.

Mother attachment was healthier and more prevalent than father attachment and accounted for most of the effect in parental attachment in keeping with literature.[27,28] Naturally mothers do most of the nurturing in the home and account for the secure base that enables the adolescent to explore the world and establish himself.[13,18] Parenting functions differ for fathers and mothers but both need to practice authoritative parenting and provide PCC.[13]Father attachment was poor among the respondents as more than 40% of them rated their fathers as not close or not important. This is important as lack of paternal nurturing provides a negative modelling for the boys and has been demonstrated to be significantly associated with sexual risk behavior and externalizing behavior in boys. [18,38]

The impact of parents' separation on family factors was explored. Separation of the marital subsystem was significantly associated with parental attachment and family functioning as the proportion of the respondents in this subset that rated their families as dysfunctional or less healthy attachment was higher than the respondents from intact families.

The prevalence of divorce among the parents of the sample population was low at 8% and less than the 13% found in the Ibadan study and far less than the rate in the developed countries.[39,40] This is no comfort as divorce is trending upwards among the younger generation in our country. Parent's separation by divorce had a significant association with all family factors. Perceived family function was adversely affected by divorce. The scores in the domains of the APGAR show deficiencies in adaptation ,growth, affection and resolve domains much worse than the mean scores for all the respondents and compared to the other types of separation. This signifies severe global dysfunction and need for intervention. Divorce signifies severe dysfunction in the parental subsystem resulting in breakdown of the family unit. This has been shown to adversely affect the psycho emotional health and self esteem of the children and induce anger, guilt and fear.[14,39] In our culture, the mother is usually forced to leave with the children. She faces multiple challenges in trying to provide all parenting functions alone, stigma and disapproval from family and society and sudden loss in socioeconomic status as the father usually will not provide for the estranged family. The negative dispositions under the circumstances causes her to fail to function well, family dynamics breaks down and mother attachment may be hindered. There is often negative psycho political negotiation between the parents also hindering father attachment. In severe cases parent alienation syndrome occurs where one parent triangulates with the children to alienate the other parent.[41] This scenario has also been shown to be similar to developed countries.[39] The impact of divorce on the children has also been shown to transcend generations with the children often ending up in dysfunctional marriages or divorce. However where the parents can provide Parent child connectedness in spite of the constraints, outcome is not always negative.[13] This should be the aim of intervention where divorce can't be prevented. Also where separation reduces the exposure of the children to the negative environment of parental conflict, divorce may be a positive trade off. [9,13,39] The dysfunction in the marital subsystem significantly disrupts all dimensions of parental attachment depriving the children of the secure base and resources to develop into positive youth with consequences in psycho emotional adversities and risk behaviour.[19,39]

Parent's separation by work demands had a significant association with family functioning but not with any of the dimensions of parental attachment. Separation of the marital dyad creates psycho emotional strain on the couple, and tilts the family responsibilities in favour of one parent. However, all attachment dimensions are stable showing that parents can still provide parent child connectedness and the children are protected. Most of the respondents in this subset, rated their family as moderately dysfunctional suggesting that the dysfunction is transitioning and amenable to non complex interventions as can be provided by FP through Family Conferencing, facilitating insight and measures to correct the dysfunction. This is important as it represents a negative environment for adolescent development with a potential to deteriorate. Flexibility in role sharing with father participation in domestic work and child care has been shown to have positive impact in developed world but that culture is yet to take root in our environment.[18]

Parents' separation by death had no relationship with family functioning and maternal attachment but was significantly related to parental and father attachment. This could be attributed to functional father absence because where the father is alive, he often re marries or gives the child to his own parents or other substitutes effectively depriving the child of father attachment. Parental attachment is also consequently affected.

In all forms of separation, the presence of a step parent often worsens family dynamics and attachment to the biological parent due to negative psycho political negotiations involving the step parent.[13,39,40]

The prevalence of risk behavior in this study was higher than that found in the Ibadan study and confirms the impact of good family functioning on risk behaviour.[25]Risk behavior was significantly related to family functioning and parental attachment confirming the impact of family processes on adolescent outcome in keeping with literature.[6,9,13,23] The impact of disrupted family structure on adolescent risk behavior mediated through impaired family processes was demonstrated in a significant relationship with risk behavior. This is in

keeping with literature and underscores the need to screen at risk adolescents and provide focused intervention to them and their families.

The utility of the APGAR Questionnaire in assessment of Family Functioning lies in its subjectivity and simplicity. This is important as it can be readily applied in the clinics and demonstrates the areas of dysfunction specific to the subsystem dynamics of the index adolescent, enabling non complex intervention as can be offered by FPs[29]. Where the dysfunction is severe and global, the FP will harness the social support net work for intervention or refer for specialist intervention where available.[29]The Family Circle proved it's utility in eliciting parental attachment by it's ease of utilization and simplicity and therefore it is a valuable tool in preventive assessment of adolescents in the clinic.

1.7 Conclusion: This study used the APGAR Questionnaire and Family Circle to elicit the pattern of perceived Family Functioning and Parental Attachment among adolescents showing that most of the families were highly functional but most boys and girls rated their families deficient in the growth and affection domains. Majority of the respondents had healthy parental attachment with mother attachment being significantly more prevalent than father attachment. Risk behavior prevalence was high. Divorce had a low prevalence but global negative impact on all family factors worse than families with a deceased parent. Work separation significantly impacted functioning but parental attachment was preserved. Family functioning and structure mediated through parental attachment were all associated with risk behavior. The deficiencies in the Growth and Affection domains and Father attachment indicate needed intervention to optimize family conditions for adolescent development.

1.8 Limitation: the effect of extended family members, step parents or parent substitutes on family functioning and parental attachment was not explored in this study and constitutes questions for further studies.

1.9 Recommendations: Screening for Family Factors should be included in routine preventive care for adolescents by Family Physicians and other professionals working with adolescents.
Education of parents and adolescents on the process of adolescent transition will facilitate their adjustments through this stage.
The governments in LMIC should rise up to the responsibility of creating and implementing policies and programs for adolescent health and development.

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Tables:

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**	**50.0**
	Female	168	50.0
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
Parent Separation type			
	Divorce	**27**	**8.0**
	Work	31	9.2
	Death	35	10.4
Risk Behavior	**Yes**	**86**	**25.6**
	No	250	74.4

Table 2: Distribution of Family Factors among the Respondents

Variable	Response	Frequency	Percentage
Mother Attachment	**Very close**	**196**	**58.3**
	Close	96	28.6
	Not close	28	8.3
	Not important	16	4.8
Father Attachment	**Very close**	**106**	**31.5**
	Close	88	26.2
	Not close	101	30.1
	Not important	41	12.2
Parental Attachment	**Very healthy attachment**	**181**	**53.9**
	Healthy attachment	126	37.5
	Poor Attachment	29	8.6
Family Functioning	**Highly Functional**	**189**	**56.3**
	Moderately dysfunctional	110	32.7
	Severely dysfunctional	37	11.0

Table 3: Pattern of APGAR Scores in the Domains among the Respondents.

Respondent	Adaptation Mean(SD)	Partnership Mean(SD)	Growth Mean(SD)	Affection Mean(SD)	Resolve Mean(SD)	Total Score Mean(SD)
Females	1.50(.718)	1.58(.678)	1.19(.742)	1.34(.732)	1.50(.683	7.10(2.67)
Males	1.49(.709)	1.43(.688)	1.33(.706)	1.39(.743)	1.59(.628	7.14(2.33)
Total Respondents	1.50(.712)	1.51(.687)	1.26(.727)	1.37(.737)	1.51(.655	7.12(2.50)

Table 4 : Relationship between Respondent's Gender and Family Factors among the Respondents

Sex of Respondent	Category1	Category 2	Category 3	Total	X^2 df P value	Remark
	Fam. Function Highly Functional	**Fam. Function Moderately Dysfunctional**	**Fam. Function Severely Dysfunctional**			
Male	95(56.5)	52 (31)	21(12.5)	**168(100)**	X^2 1.008	Not
Female	94(56)	58 (34.5)	16(9.5)	**168(100)**	df= 2	Significant
Total	**189(100)**	**110(100)**	**37(100)**	**336(100)**	P=0.604	
	Parental Att. Very Healthy Att.	**Parental Att. Healthy Att.**	**Parental Att. Poor Att.**			
Male	95(56.5)	54 (32.2)	19(11.3)	**168(100)**	X^2 5.812	Not
Female	86(51.2)	72 (42.9)	10(5.9)	**168(100**	df = 2	Significant
Total	**181(100)**	**126(100)**	**29(100)**	**336(100)**	P= 0.055	
	Father Att. Very close	**Father Att. Close**	**Father Att. Not Important**		X^2 0.991	Not
Male	55(32.7)	40 (23.8)	73(43.5)	**168(100)**	df = 2	Significant
Female	51(30.4)	48 (28.6)	69(41.0)	**168(100**	P= 0.609	
Total	**106(100)**	**88(100)**	**142(100)**	**336(100)**		
	Mother Att. Very close	**Mother Att. Close**	**Mother Att. Not Important**	**168(100)**		
Male	100(59.5)	45 (26.8)	23(13.7)	**168(100)**	X^2 0.548	Not
Female	96(57.1)	51 (30.4)	21(12.5)	**336(100)**	df = 2	Significant
Total	**196(100)**	**96(100)**	**44(100)**		P= 0.761	

Table 5: Relationship between Phase of Adolescence and Family Factors among the Respondents

Phase of Adolescence	Category1	Category 2	Category 3	Total	X^2 df P value	Remark
	Fam. Function Highly Functional	**Fam. Function Moderately Dysfunctional**	**Fam. Function Severely Dysfunctional**			
Early Adolescence	16(57.1)	7 (25)	5(17.9)	**28 (100)**	X^2 2.172	Not
Middle Adolescence	134 (56.8)	77(32.6)	25(10.6)	**236 (100)**	df= 4	Significant
Late Adolescence	39(54.2)	26(36.1)	7(9.7)	**72(100)**	P=0.704	
Total	**189(100)**	**110(100)**	**37(100)**	**336(100)**		
	Parental Attachment: Very Healthy Att.	**Parental Attachment: Healthy Att.**	**Parental Attachment: Poor Att.**			
Early Adolescence	16(57.2)			**28 (100)**	X^2 2.197	Not
Middle Adolescence	131 (55.5)	9 (32.1)	3(10.7)	**236 (100)**	df = 4	Significant
Late Adolescence	34(47.3)	85(36.0)	20(8.5)	**72(100)**	P= 0.699	
Total	**181(100)**	32(44.4)	6(8.3)	**336(100)**		
		126(100)	**29(100)**			
	Father Att. Very close	**Father Att. Close**	**Father Att. Not Important**			
	13(46.4)	2 (7.2)	13(46.4)	**28(100)**	X^2 10.509	Significant
Early Adolescence	78(33.1)	62 (26.2)	96(40.7)	**236(100)**	df = 4	
Middle Adolescence	15(20.8)	24 (33.4	33(45.8)	**72(100)**	P= 0.033	
Late Adolescence	**106(100)**	**88(100)**	**142(100)**	**336(100)**		
Total	**Mother Att. Very close**	**Mother Att. Close**	**Mother Att. Not Important**			
	20(71.4)	5 (17.9)	3(10.7)	**28(100)**	X^2 9.940	Significant
	145(61.4)	63 (26.7)	28(11.9)	**236(100)**	df = 4	
	31(43)	28 (28.9)	13(18.1)	**72 (100)**	P= 0.041	
Early Adolescence	**196(100)**	**96(100)**	**44(100)**	**336(100)**		
Middle Adolescence						
Late Adolescence						
Total						

Table 6: Relationship between Respondents' Parents' Educational Status and Family Functioning

Parents' Educational Status	FF: Highly Functional	FF: Moderately Dysfunctional	FF: Severely Dysfunctional	Total	X^2 df P value	Remark
Mother's Educational Status						
Primary						
Secondary	18(47.4)	14 (36.8)	6(15.8)	**38 (100)**	X^2 3.800	Not
Tertiary	54 (53.5)	38(37.6)	9(8.9)	**101 (100)**	df= 4	Significant
Total	117(59.4)	58(29.4)	22(11.2)	**197(100)**	P =0.434	
	189(100)	**110(100)**	**37(100)**	**336(100)**		
Father's Educational Status						
Primary						
Secondary						
Tertiary	15(60.0)	6 (24.0)	4(16)	**25 (100)**	X^2 4.244	Not
Total	45 (59.2)	27(35.5)	4(5.3)	**76 (100)**	df = 4	Significant
	129(54.9)	77(32.8)	29(12.3)	**235(100)**	P=0.374	
	189(100)	**110(100)**	**37(100)**	**336(100)**		

Table 7: Relationship between Respondents' Parents' Educational Status and Parental Attachment

Parents' Educational Status	**Category 1**	**Category 2**	**Category 3**	**Total**	**X^2 df P value**	**Remark**
Mother's Educational Status	**Mother Attachment Very Close**	**Mother Attachment Close**	**Mother Attachment Not Important**		X^2 3.968 df= 4	
Primary	22(57.9)	11 (28.9)		**38 (100)**	P =0.410	Not
Secondary	52 (51.5)	36(35.6)	5(13.2)	**101 (100)**		Significant
Tertiary	122(61.9)	49(24.9)	13(12.9)	**197(100)**		
Total	**196(100)**	**96(100)**	26(13.2)	**336(100)**		
			44(100)			
Father's Educational Status	**Father Attachment Very Close**	**Father Attachment Close**	**Father Attachment Not Important**		X^2 7.202 df = 4	
Primary	6(24.0)	3 (12.0)		**25 (100)**	P =0.126	Not
Secondary	20 (26.3)	23(30.3)		**76 (100)**		Significant
Tertiary	80(34.0)	62(26.4)	16(64.0)	**235(100)**		
Total	**106(100)**	**88(100)**	33(43.4)	**336(100)**		
			93(39.6)			
			142(100)			

Table 8: Relationship between Respondent's Parents' Separation and Family Factors.

Parents' Separation	**Category 1**	**Category 2**	**Category 3**	**Total**	**X^2 df P value**	**Remark**
	Parental Att.: Very Healthy Att,	**Parental Att.: Healthy Att,**	**Parental Att.: Poor Att,**			
	144(59.3)	78 (32.1)				
Yes	37(39.8)	48 (51.6)	21(8.6)	**243(100)**	X^2 1.565	Significant
No	**181(100)**	**126(100)**	8(8.6)	**93(100)**	df= 2	
Total			**29(100)**	**336(100)**	P=0.003	
	Fam. Function: Highly Functional	**Fam. Function: Moderately dysfunctional**	**Fam. Function: Severely Dysfunctional**			
	148(60.9)	69 (28.4)				
	41(44.1)	41 (44.1)				
Yes	**189(100)**	**110(100)**	26(10.7)	**243(100)**	X^2 8.519	
No			11(11.8)	**93(100**	df = 2	Significant
Total			**37(100)**	**336(100)**	P =0.014	

Table 9: Pattern of APGAR Scores by the Domains among Respondents living with Separated Parents.

Respondent	**Adaptation** Mean(SD)	**Partnership** Mean(SD)	**Growth** Mean(SD)	**Affection** Mean(SD)	**Resolve** Mean(SD)	**Total Score** Mean(SD)
Total Respondents	1.50(.712)	1.51(.687)	1.26(.727)	1.37(.737)	1.51(.655)	7.12(2.50)
Parental Separation type:	1.22(.751)	1.47(.761)	1.09(.819)	1.31(.82)	1.37(.793)	6.45(3.058)
Divorce subset	1.64(.639)	1.44(.694)	1.25(.554)	1.31(.749)	1.47(.696)	7.11(2.29)
Death subset	1.55(.685)	1.50(.688)	1.26(.685)	1.42(.551)	1.55(.601)	7.28(1.814)
Work subset						

Table 10: Relationship between Respondents' Parents' Separation by Divorce and Family factors

Parents' Separation by Divorce	Category 1	Category 2	Category 3	Total	X^2 df P value	Remark
	Parental Attachment: VeryHealthy Attachment	**Parental Attachment: Healthy Attachment**	**Parental Attachment: Poor Attachment**			
Yes	5(18.5)	16 (59.3)	6(22.2)	**27(100)**	X^2=16.801	
No	176 (57)	110 (35.6	23(7.4)	**309(100**	df 2	Significant
Total	**181(100**	**126(100)**	**29(100)**	**336(100)**	P= 0.000	
	Mother Attachment: Very Close	**Mother Attachment: Close**	**Mother Attachment: Not Import.**			
Yes	10(37.0)	7 (26)	10(37.0)	**27 (100)**	X^2 15.206	Significant
No	186 (60.2)	89(28.8)	34(11)	**309 (100)**	df=2	
Total	**196(100)**	**96(100)**	**44(100)**	**336(100)**	P=0.000	
	Father Attachment: Very Close	**Father Attachment Close**	**Father Attachment: Not Import.**			
Yes	4(14.8)	4 (14.8)	19(70.4)	**27 (100)**	X^2 9.545	
No	102(33)	84 (37.2	123(39.8)	**309 (100)**	df=2	Significant
Total	**106(100)**	**88(100)**	**142(100)**	**336(100)**	P=0.008	
	Family Functioning: Highly Functional	**Family Functioning: Moderately. Dysfunction.**	**Family Functioning Severely Dysfunction.**		X^2 7.189	
Yes	11(40.7)	9(33.3)	7(26.0)	**27 (100)**	df 2	Significant
No	178(57.6)	101(32.7)	30(9.7)	**309 (100)**	P=0.027	
Total	**189(100)**	**110(100)**	**37(100)**	**336(100)**		

Table 11: Relationship between Respondents' Parents' Separation by Death and Family Factors

Parents' Separation by Death	Category 1	Category 2	Category 3	Total	X^2 df P value	Remark
	Parental Attachment: Very Healthy Attachment	**Parental Attachment: Healthy Attachment**	**Parental Attachment: Poor Attachment**			
Yes	10(28.6)	21 (60.0)	4(11.4)	**35(100)**	X^2=10.270	
No	171 (56.8)	105(34.9)	25(8.3)	**301(100**	df 2	Significant
Total	**181(100**	**126(100)**	**29(100)**	**336(100)**	P= 0.006	
	Mother Attachment: Very Close	**Mother Attachment: Close**	**Mother Attachment: Not Important**			
Yes	18(51.4)	13 (37.2)	4(11.4)	**35 (100)**	X^2 1.407	
No	178(59.1)	83(27.6)	40(13.3)	**301(100)**	df=2	Not
Total	**196(100)**	**96(100)**	**44(100)**	**336(100)**	P=0.495	Significant
	Father Attachment: Very Close	**Father Attachment: Close**	**Father Attachment: Not Important**			
Yes	5(14.2)	8 (22.9)	22(68.9)	**35(100)**	X^2 7.777	
No	101(33.6)	80 (26.5)	120(39.9)	**301 (100)**	df=2	Significant
Total	**106(100)**	**88(100)**	**142(100)**	**336(100)**	P=0.020	
	Family Functioning: Highly	**Family Functioning: Mod.**	**Family Functioning: Severely**			
Yes	**Functional**	**Dysfunctional**	**Dysfunctional**		X^2 1.781	
No	16(45.7)	14(40.0)	5(14.3)	**35 (100)**	df 2	Not
Total	173(57.5)	96(31.9)	32(10.6)	**301 (100)**	P=0.441	Significant
	189(100)	**110(100)**	**37(100)**	**336(100)**		

Table 12: Relationship between Respondents' Parents' Separation by Work and Family Factors

Parental Separation by work	Category 1	Category 2	Category 3	Total	X^2 df P value	Remark
	Parental Attachment: Very Healthy Attachment	**Parental attachment: Healthy Attachment**	**Parental Attachment: Poor Attachment**			
Yes	17(54.8)	14 (45.2)	0(0)	**31(100)**	X^2=3.488	Not
No	164 (53.8)	112 (36.7)	29(9.5)	**305(100**	df 2	Significant
Total	**181(100)**	**126(100)**	**29(100)**	**336(100)**	P= 0.175	
	Mother Attachment: Very Close	**Mother Attachment: Close**	**Mother Att.: Not Important**			
Yes	19(61.2)	10 (32.3)	2(6.5)	**31 (100)**	X^2 =1.365	Not
No	177 (58.0)	86(28.2)	42(13.8)	**305 (100)**	df=2	Significant
Total	**196(100)**	**96(100)**	**44(100)**	**336(100)**	P=0.505	
	Father Attachment: Very Close	**Father Attachment: Close**	**Father Attachment: Not Important**		X^2 =0.918	Not
Yes	10(32.3)	6 (19.4)	15(48.4)	**31 (100)**	df=2	Significant
No	96(31.5)	82(26.9)	127(41.6)	**305 (100)**	P=0.632	
Total	**106(100)**	**88(100)**	**142(100)**	**336(100)**		
	Fam Function: Highly	**Fam.Function: Moderately Dysfunctional**	**Fam. Function: Severely Dysfunctional**		X^2	
Yes	**Functional**	20(64.5)	0(26.0)	**31 (100)**	16.913	Significant
No	11(35.5)	90(29.5)	37(9.7)	**305 (100)**	df 2	
Total	178(58.4)	**110(100)**	**37(100)**	**336(100)**	P=0.000	
	189(100)					

Table 13: Relationship between Risk Behavior and Family Factors among the Respondents

Family Factors	Risk Behavior Yes	Risk Behavior No	Total	X^2 df P value	Remark
Parental Attachment					
Very Healthy Att.	41(22.7)	140 (77.3)	**181(100)**	X^2 18.185	Significant
Healthy Attachment	28(22.2)	98 (77.8)	**126(100)**	df = 2	
Poor Attachment	17(58.6)	12(41.4)	**29(100)**	P =0.000	
Total	**86(100)**	**250(100)**	**336(100)**		
Family Functioning					
Highly Functional	35(18.5)	154 (81.48)	**189(100)**		Significant
Mod. Dysfunctional	36(32.7)	74 (67.27)	**110(100)**	X^2 12.248	
Severely Dysfunctional	15(40.5)	22(59.5)	**37(100)**	df= 2	
Total	**86(100)**	**250(100)**	**336(100)**	P =0.002	

Table 14: Relationship between Respondents' Parents' Separation and Risk Behavior

Parents' Separation	Risk Behavior (Yes)	Risk Behavior (No)	Total
Yes	51(21)	192(79)	**243 (100)**
No	36(38.7)	58(61.3)	**93(100)**
Total	**86(100)**	**250(100)**	**336(100)**

The relationship between Parents' Separation and risk behavior is significant. Calculate X^2 =9.787. at df 1. P value =0.002.

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