

Parent-Child Connectedness as Predictor of Risky Sexual Behaviour among Adolescents in the Assin South District, Ghana

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Abstract

Background: Lack of connectedness between adolescents and their parents has been found to affect adolescent development and decision-making negatively. This study investigates the specific elements of parent-child connectedness (PCC) that influence closeness in a relationship using Assin South District as a case study.

Methods: A cross-sectional descriptive design was employed with 354 respondents which comprised parents aged 30-59 years and older adolescents aged 15-19 years. Data were analysed using descriptive statistics, Pearson's chi-squared test of independence and binary logistic regression.

Results: The study revealed that, a climate of trust, communication, structure of home and time shared constitute important elements of PCC that support closeness in a relationship. It was also emerged in the study that parents' own awareness on sex education was the main predictor for sexuality communication with adolescents. The study discovered that some of the adolescents had ever had a date and also practised risky sexual behaviour.

Conclusion: Based on this, the study recommends that parents provide adolescents with the requisite information aimed at reducing any harmful consequences of behaviour when occurs to the adolescents. Also, parents in the Assin South district should endeavour to encourage their children to talk openly with them (parents) about their ideas, needs, and worries for redress.

Keywords: Child discipline; Climate of trust; Communication; Monitoring; Parent-child connectedness; Risky sexual behaviour; Structure; Time shared

Introduction

As kids, we come into the world without knowing how to cater for ourselves [1]. For survival, we rely solely on our parents for everything such as food, emotional warmth and protection [2]. Parents' control on infants, from babyhood to adolescence, is much more significant than any other influence (Minnesota Student Survey Interagency Team, 2010). Studies that focus on adolescents' sexual decision-making attitudes display that parents have a potent control on health outcomes for their children [3,4].

According to Lezin et al. (2004), parents, as part of their basic roles, endeavour to foster and provide a climate of trust which includes physical support, openness, protection, warmth, attachment and encouragement; communication which allows for the exchange of feelings and ideas among parents and children; an appropriate structure of home which attempts to syndicate discipline, monitoring, and guidance which leads to independence; and lastly, time shared together which also curtails meaningful interaction, guidance, support with laughter, play and fun. The above roles performed by parents were endorsed by Lezin et al. (2004) as the key elements of parent-child connectedness (PCC).

Notwithstanding, adolescents encounter aggregate hitches during their passage to maturity [5]. Many of these challenges could prevail throughout their lifetime [6]. The reason for this problem might be attributable to the information gap about sexually related matters. Therefore, risky sexual behaviour such as multiple sexual partnerships, unprotected sex, mouth-to-genital contact, anal sex, exposure to sexual acts at a younger age and transactional sex are common among adolescents [3,5,7]. These behaviours predispose them to multiple catastrophes of sexually transmitted infections including HIV and AIDS, unintended teenage pregnancy and unsafe abortions [8-10].

Nevertheless, there is accelerative indication that the roles that adults play matter a lot in the lives of adolescents. Studies from the developed world [11,12] and sub-Saharan Africa have endorsed adults to be paramount sex educators.

Connectedness is regarded as a basic human need that guarantees a sense of belonging and prevents the feeling of social alienation and solitude [13]. Lack of connectedness between adolescents and their parents has been found to affect adolescent development and decision-making negatively [13]. In Western societies, the value of the family unit for adolescents can be shaded by the tendency to see adolescence as an important developmental stage into adulthood which involves increased independence and decision-making responsibilities [14,15]. The family as a unit sustains its importance since it equips children with a sense of identity, physical support, social and emotional development [16,17]. Being attached and feeling loved and wanted is central to adolescents' well-being and identity development [18,13].

In parent-child connectedness (PCC), parents help to convey information, sexual values, beliefs and expectations to adolescents in order to influence their attitudes towards risky sexual behaviour [19,20]. This connectedness, therefore, empowers adolescents to pull off the many problems connected with adolescence. There is an indication

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that when PCC is established, maintained and increased in a family, the outcome is a permanent bond among parent and the children based on mutual respect, love, trust and affection [3]. These are exhibited in daily interactions and uttered loosely as both parents and children migrate through their relationship together [21,22].

Parental talks on risky sexual related matters and adolescents' decision-making can possibly stick only when the state of connection among parents and children is high [23,24]. This 'stickiness', according to Jerman and Constantine (2010), adds up to the effective role that PCC plays in delaying and reducing adolescents' risky sexual behaviour. Moreover, when PCC is high among parents and children, the climate that is created seems to be friendlier with less conflict [19]. This climate helps parents and adolescents to get along well in the family.

On the other hand, in families that PCC is low, the climate that is created is unpleasant coupled with misunderstanding and violence. An unsettled dispute is high in such a family [14,15]. Sharing of thoughts, feelings, sympathy, and regard are devoid of the family. Instead of attachment there is detachment in that family. Many negative consequences might happen in the forms of attachment to bad friends, risky sexual behaviours and difficulties forming one's own intimate connection later in life.

Importantly, the news about adolescent sexuality in the world is better. Teen pregnancy is down and it has been declining steadily. Adolescents are delaying having sex today than a few years ago [25,26]. However, putting these judgements in perspective, there is little reason to believe that the ideal situation has been achieved. This is because at the international level, it has been estimated that about 21 million adolescent girls aged 15 to 19 years become pregnant while 2 million adolescent girls aged less than 15 years become pregnant in developing regions every year [27,28]. In addition to the above, about 3.9 million unsafe abortions among adolescent girls aged 15-19 years happen each year, adding up to the maternal mortality, morbidity and long lasting health issues. More so, maternal mortality risks are high among adolescent girls less than 15 years. In most developing countries, pregnancy complications and childbirth are the major causes of death among adolescent girls.

Again, adolescents worldwide have been seen to have the highest prevalence rates of sexually transmitted infections (STIs) including HIV and AIDS since the majority of them engage in sexual intercourse without any protection. Though these adolescents have enough messages on STIs including HIV and AIDS from different areas yet, they fail to put this information into practice for a change in their behaviours [29]. Most cases of STIs including HIV and AIDS, together with unintended pregnancies, observed in high communities are all indicators of the happenings on the ground [30]. Recent health menaces for adolescents are mostly behavioural rather than biomedical and more of these contemporary adolescents are engaged in risky sexual behaviour with potential hazardous effects [31].

Currently, sub-Saharan Africa is recognised as the area with high prevalence rates of teenage births. For instance, in 2018, birth rates among teenager's amounted to over 100 births per 1000 girls aged 15-19 compared to lower rates in other countries in the world. For instance, United Nations Population Fund [UNFPA], (2015) stated that most studies in the sub-region have as well documented ever-increasing sexual immoralities among teens. This is because teenagers often encounter tremendous pressure to indulge in sex, particularly from bad friends, exposure to unaccredited adult videos and the tendency for economic benefits (United Nations Population Fund [UNFPA],

2015; WHO, 2020). This, consequently, leads a reasonable number of teenagers to engage in risky sexual behaviours at early stages of their lives [32,33].

These teens need appropriate guidance and attention to enable them to reduce such risky sexual behaviours (UNICEF, 2019). According to UNICEF (2019), the Central African Republic, Niger, Chad, Angola and Mali have high teenage birth rates above 178 per 1000. Furthermore, between 2010 and 2015, more than 45 per cent of women ranging between the ages of 20 and 24 years reported that they had their first babies by age 18.

In Ghana, teens aged 10-19 years and are with high sexual activity represent 23 per cent of the entire population [34]. Exposure to sexual activities starts early and this trend has multiplied in magnitude over the past decades. The 2014 GDHS reported that, the proportion of adolescent girls aged 15-19 years who had had their first sexual encounter by age 15 has increased by 61.6 per cent in a 15 year interval; from 7.3 per cent in 1998 to 11.8 per cent in 2014. On the other hand, the sexual debut by 18 years old adolescents has also declined from 56.7 per cent to 43.3 per cent for the 20-24 years old age group for the same period.

The median age of first sexual activity for the 20-24-year age group has remained relatively unchanged from 1998 to 2014 at around 18 years for women and about 19.5 for men. Risky sexual practices are prevalent among adolescents. This is exemplified by continuous multiple sexual partners, concurrent partners, and non-use of condoms by those who are sexually active (GDHS, 2014). Despite this, condom usage at first sexual encounter is 25.9 per cent among females aged 15-19-years old and 31.4 per cent for males [35]. The prevalence rate of teenage pregnancy for adolescents aged 15-19 years is 14 per cent of all pregnancies in Ghana [36]. This has become a national social vice in Ghana due to the increasing number of teenagers indulging in premarital sex.

In the Central Region, adolescent pregnancy rate is comparatively high than in some regions in Ghana [37]. As postulated by the Population Council, UNFPA and UNICEF (2016), the proportion of adolescent girls who had begun childbearing in the Central Region decreased from 33.3 per cent in 1993, which was the highest, to 18.7 per cent (the lowest in Central Region from 1993-2014) in 1998. However, it increased to 24.1 per cent in 2003 and thereafter, declined to 23.2 per cent in 2008 and further declined to 21.3 per cent in 2014. Despite the decrease in adolescent fertility in 2014, child births to females less than 20 years remain high in the region, indicating an early engagement in sexual activity, leading to early pregnancy.

The importance of the well-being of teenagers in any society is based on the fact that teenagers constitute a major source of potential human resource which, when given the necessary guidance to grow into adulthood, will shape the socioeconomic future of a country. Adolescent pregnancy in a country could weaken the development of that potential [38]. Reducing adolescents' birthrate and attending to the many factors underlying it are essential for improving sexual and reproductive health and the socioeconomic well-being of teens [39]. According to Edilberto and Mengjia (2013), there is evidence that supports that immediate action should be taken to protect the rights of adolescents most especially, adolescent girls and also, to guarantee their education, health needs as well as to eradicate the risks of violence and pregnancy among these girls who are below 18 years. In essence, PCC has surfaced in many studies recently as a powerful super-protector in a family life that may buffer teens from the many problems

they encounter in today's world. As evidence accumulates about PCC being a super-protector for the reduction of many health and social problems (example, drug abuse, violence, risky sexual behaviour and unplanned pregnancy), there is currently a paucity of data regarding which elements of PCC influence closeness in a relationship and aid the super protective role that PCC plays and, therefore, must be promoted.

PCC emphasises a climate of trust, structure, communication and time shared as key elements [1] which, when observed, the outcome is an everlasting bond between parents and their children [40]. In Ghana, the elements of PCC have not been well explored, so, it becomes difficult to predict specific elements of PCC that are considered to be important, influence closeness in a relationship and aid the effective role that PCC plays in delaying and reducing risky sexual behaviour among adolescents. A search from libraries and electronic databases has disclosed that little research has been done on PCC. The few research available was all limited in scope, coverage and assessment. For instance, Adu-Mireku (2003) only examined family communication about HIV and AIDS, Kumi-Kyereme, Awusabo-Asare, Biddlecom and Tanle (2007) studied sexual communication by characterizing persons who have talked about sex-related matters with the adolescent while Manu, Mba, Asare, Odoi-Agyarko and Asante (2015) explored sexual communication by targeting both parents and children.

It should be noted that none of the aims drawn in the above studies is about the parent-child connectedness and risky sexual behaviour among adolescents. Moreover, to the best of my knowledge, no study in Ghana as well as Assin South District has empirically sought to examine the four key elements of PCC let alone, to document those that are considered to be important, support closeness in a relationship and aid the effective role that PCC plays in delaying and reducing risky sexual behaviour among adolescents. Given this, the research article attempts to investigate parent-child connectedness and risky sexual behaviour among adolescents in the Assin South District by specifically assessing if the kind of climate of trust parents build and maintain with children predicts risky sexual behaviour among adolescents in the Assin South District, ascertaining how parents' intention to engage children in communication influences risky sexual behaviour among adolescents in the Assin South District, determining whether the kind of structure parents build with children influences adolescents' risky sexual behaviour in the Assin South District, analysing whether the time parents and children share together predicts risky sexual behaviour among adolescents in the Assin South District; and lastly document the specific elements of PCC that are considered to influence closeness in a relationship. This paper hypothesised that parent-child connectedness is not related to adolescents' risky sexual behaviour.

Theoretical perspective

This article employed the Theory of Reasoned Action (TRA) which guided the researchers to explain how parent-child connectedness (PCC) influences behaviour. The Theory of Reasoned Action is based on several related constructs and hypotheses proposed by social psychologists to understand and to predict human behaviour [41]. TRA came up from the long-standing cooperative studies done by famed psychologists [42]. This happened from attitude studies using the Expectancy Value Models [43]. The renowned psychologists did this formulation of TRA after trying to figure the disagreement that existed between attitude and behaviour. From the start of TRA in behavioural studies, it has been used to study a broad variety of issues and is now recognized as one of the most powerful theories about volitional human behaviour [44]. It is founded on the premise that human beings

unremarkably act sensibly, as the name of the theory implies; that is, they take account of accessible information and consider the implications of their actions. The theory contends that a person's intention to carry out or not to carry out behaviour is the proximate determinant of that action; without unanticipated events, people are predicted to act in conformity with their intentions. Intention to postpone and cut down risky sexual behaviour in the Assin South District can also be noted to reckon on the adolescents' voluntary behaviour. Adolescents in Assin South District might take account of the available message about risky sexual behaviour and think about the outcomes of delaying and reducing or not delaying and reducing. The message well thought out by the adolescents might be the adverse effects, how silent others will think about them, commitment required to be able to delay and reduce risky sexual behaviour.

The stronger the intention to delay and reduce risky sexual behaviour, the more the adolescents in the Assin South District are supposed to try to delay and reduce risky sexual behaviour, and therefore, the greater the expectation that the behaviour will, in reality, be acted upon. Thus, the basic interest is with characterizing the constituents underlying the formation and change of behavioural intent [45]. An adolescent in Assin South District's intention to act in a definite way may be influenced by their 'attitude' about the behaviour understudied and their perception of the societal forces on them to act in that manner, that is, 'subjective norms'. The relative contribution of attitudes and normative belief varies per the behavioural circumstance and the person concerned. Attitudes are predicted by the beliefs about the results of undertaken the behaviour and the assessment of these anticipated results. The subjective norm depends upon the beliefs about how different people feel the adolescent in the Assin South District should act and their motivation to abide by these expectations from the different people. Most of the adolescents in the Assin South District who engage in risky sexual behaviour might hold fast to normative norms in that they might assess the behaviour before they perform it. As a result of this, any behaviour they engage in might think about how such behaviour will influence their peers. They might also consider how positively or negatively their behaviour will shackle other community members. That is the basic rationale why this paper is based on TRA.

Understanding the kind of relationship PCC attempts to capture

Of course, as identified in any human relationship, an enduring mutual fulfilling connection between parents and children can take various diverse ways and is influenced by differences in personality, family history, culture, and other features. It is identified that each of these components highlighted above might be available, but in different degrees without compromising the general quality of PCC. Broadly speaking, the assumption is that a parent-child dyad that embraces all or most of these components, as early as possible in a child's life, and continuous from that moment on, is extremely likely to capture the type of relationship that PCC attempts to establish than if these components were lacking, inconsistent, and/or introduced later in a child's life.

Also, for a child to recognize and take notice of this climate of trust in the family, the support, openness, protection, encouragement, autonomy, closeness, warmth, and attachment are all communicated orally or otherwise by parents in the family. However, it is not only love, warmth, and affection alone that are expressed in the family, but also feelings and ideas are also exchanged and acknowledged. This has an iterative consequences which conveys the impression that, the

more and more these components are communicated, it is the more and more they add to a climate of trust that, in return, makes future communication more productive and even more resilient to unhealthy behaviours. In view of this, both communication and an underlying climate of trust become mainly significant as parents offer structure, discipline, monitoring, and guidance (attitude). Communication and climate of trust also stimulate the mutual influence of spending time together which in return becomes another prospect for communication, for fun as well as serious interaction, and for even more incremental building of trust. Therefore, the result is an everlasting intimacy between parents and children that is mutual, continuous over time, and resilient to risky sexual behaviour.

In sum, parents who openly express their beliefs and expectations to their adolescents, communicate their interests and emotions to them early and frequent. They also endeavour to monitor them in many ways including the selection of playmates and role models for their wards. These parents bring up children who are much more likely to avert a host of risky sexual behaviour than parents who fail to do that. The greater benefit of parent-child relationships seems to be the best protection of all. The review has unearthed that researchers in Ghana have not explored the elements of parent-child connectedness effectively to predict those elements that are considered to be important, influence closeness in a relationship and support the defensive role that PCC plays in delaying and reducing adolescents' risky sexual behaviour and, therefore, should be promoted. Also, no published studies are addressing parent-child connectedness and risky sexual behaviour among adolescents in the Assin South District, hence, the need for the study.

Materials and methods

Study context

The study was carried out at Assin South District in the Central Region, Ghana where risky sexual behaviours still seems to be a common practise. Therefore the main aim of the article was to understand the influences of parent-child connectedness on adolescents' risky sexual behaviour. The researchers therefore investigated the influences of climate of trust parents built and maintain with their children, parents' intention to engage children in communication, appropriate structure of home parents built with children and finally parent-child time shared on adolescents' risky sexual behaviour. The findings of the study

might provide to parents the hints about how PCC works to serve as a super protective barrier to adolescents' risky sexual behaviours in the Assin South district.

The Assin South District shares boundaries with Twifo Hemang Lower Denkyira District on the West, Abura Asebu Kwamankese District on the South, Asikuma Odoben- Brakwa District and Ajumako Enyan Essiam District on the East and Assin North Municipal on the Northern border .

According to the 2010 Population and Housing Census, the total population of the District is 104, 244 with 2.9 per cent as the growth rate. The population is made up of a slightly high number of 53, 308 females (51.1%) compared to 50, 936 males (48.9%).

Assin South District has not been spared from the global HIV and AIDS pandemic (GSS, 2012). The total number of cumulative AIDS cases at the end of December 2006 was 100 (Assin-South District Mutual Health Insurance Scheme, 2006). The District recorded 22 maternal deaths among adolescents aged 15-19 years from 2004 to 2006 and family planning coverage by the District from 2003 to 2006 was 20 per cent [46].

The Assin South District recorded 19.6 per cent and 17.5 per cent of births attributed to teenagers between the ages of 15 and 19 years in 2015 and 2016 respectively [47,48] identifies that the phenomenon of adolescent pregnancy has become one of the serious challenges of social welfare in Ghana. However, a greater number of adolescents are being identified with the situation which therefore requires immediate and pragmatic attention. Figure 1 shows the map of the study area (Figure 1).

Respondents

Respondents, parents and adolescents in the Assin South District constituted the target population. The accessible population covered parents aged 30-59 years and adolescents aged 15-19 years. Based on this, parents aged 30-59 years and adolescents aged 15-19 years in the Assin South District were enrolled in the study and the results were used to describe the whole larger group of adolescents in the district.

Sampling procedures and sample size

A multistage sampling procedure was adopted for the study. The first stage was the random selection of Assin South District out of the

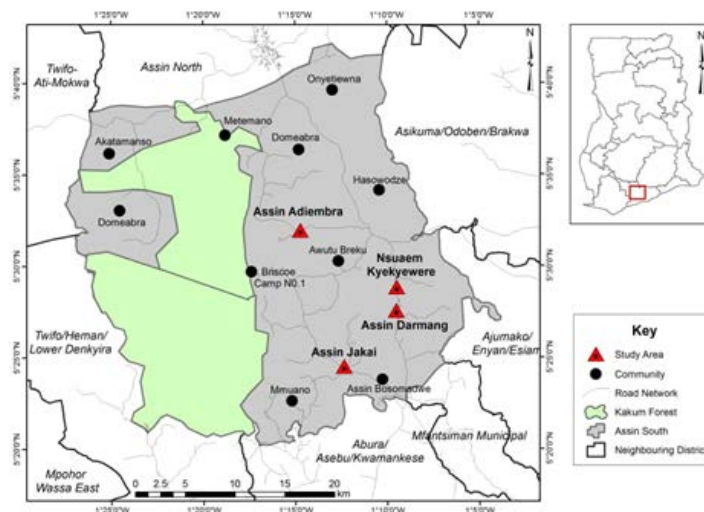


Figure 1: Map of Assin South District showing study locations (Source: Geographic Information System; Remote Sensing and Cartography Laboratory, University of Cape Coast).

22 metropolitan, municipals and districts assemblies within the Central Region. To ensure that the entire district is covered in the study, the district was divided into four (4) zones where each zone constituted three settlements. Out of the four zones, one settlement each was selected for the study. Zone One constituted Assin Adiembra, Assin Anyinabrim and Assin Asamankese. The following settlements also formed Zone Two; Assin Darmang, Assin Ongwa (Aworoso) and Assin Ngresi. Zone Three was made up of Gyakai, Ongua, Nsuaem-Kyegyewere, while Zone Four constituted Nsuta, Assin Jakai and Assin Akyiase.

The second stage was the selection of a settlement from each of the zones to form a study site for the study; simple random sampling approach was applied. With this approach, the names of all the settlements in each zone were written on pieces of paper and folded. The folded papers were kept in a separate box and well shaken to adequately mix them up. A volunteer was called to pick one folded paper at a time from each of the boxes and the names of those settlements picked constituted the chosen settlements for the study. The selection was done without replacement.

One hundred (100) respondents were selected from each study site. In each study site, 50 per cent of the sample was allocated to parents (50 respondents per study site) and the other 50 per cent to the adolescents (50 respondents per study site). Based on the male-female ratio of the population of parents and adolescents aged 15-19 years based on the 2010 Ghana Population and Housing Census, 27 females and 23 male respondents were selected from each study site.

Finally, the third stage was the selection of the respondents. Now, to reach the respondents, the researcher made a rough estimation of the number of houses within each selected study site. Then, a probability sampling method utilizing a systematic random sampling approach was employed to select the respondents for the study. Systematic random sampling is settled on the selection of respondents placed at a certain predetermined interval called the sampling fraction. This is relevant for small scale studies and one advantage of it is that one can use it without having a sample frame as in a location where dwellings are well arranged in rows, blocks or along a river or main road.

To select the first respondents, a sample fraction was determined. So, based on the sample fraction, the first respondent was selected. The sample fraction was determined by dividing the total number of houses within each study site by the number of females, (i.e., 27) and males, (i.e., 23) to be selected within each study site. For example, if the number of houses within a study site is say 150, then, the sampling fractions will be $150/27 = 5.5$ for females and $150/23 = 6.5$ for males. Since the sampling fractions are decimal numbers, the rounding was done after adding the sampling fraction to the decimal number found in the previous step. In this regard, for the female sample, a random number between 1 and 5 was first generated. So, for example, if the random number generated is 2, then, starting from a major landmark such as lorry station/bus stop, post office, clinic/hospital, and church/mosque and so on, following a serpentine order, the 2nd house was selected, followed by the $2 + 5 = 7$ th house, $7 + 5 = 12$ th house and so on. In each selected house, one parent and one adolescent were randomly sampled for the study and this served as parent-child pair. Adolescents were the index respondents and were used as leads for selecting parents. In the case where there were sampled house(s) with no eligible respondents, the researcher repeated the above process, starting from another major landmark, until the required sample was attained. The same procedure was adopted for a parent-male sample and also the adolescents aged 15-19 years at all the study sites (Table 1).

Table 1: List of Study Sites by Zones.

Zone	Name of study site
One	Assin Adiembra
Two	Assin Darmang
Three	Nsuaem-Kyegyewere
Four	Assin Jakai

Sample size estimation

In order to calculate the sample size manually, Cochran's sample size formula for estimating sample size was employed to estimate the sample size for the study. It is recommended to be the most befitting formula for calculating sample size. To utilize this formula, the preferred level of precision and the population size should be known [49]. With the help of this formula, sample size was estimated at 354 as follows:

$$n = \frac{z^2 p(1-p)}{d^2}$$

n = sample size

Confidence level set at 95% (1.96)

The p-value was set at 0.05.

z = standard normal deviation set at 1.96

d = degree of accuracy desired at 0.05

p = proportion of parents aged 30-59 years and adolescents aged 15-19 years was 36 percent

This proportion was obtained by adding the proportion of parents aged 30-59 years (26475) to that of adolescents aged 15-19 years (11099) which is equal 37574. The figure obtained (37574) as the proportion of parents aged 30-59 years and adolescents aged 15-19 years was further divided by the total population of the Assin South District (104244) to obtain 0.36. Mathematically, $37574/104244 = 0.36$.

$$n = \frac{1.96^2 * 0.36(1-0.36)}{0.05^2} = 354.041, \text{ approximately } 400$$

Sample size was, therefore, estimated at 400 respondents for the study. The extra 46 respondents were added to cater for refusal, incomplete information and non-responses.

Ethical issues

Ethical approval was sought from the University of Cape Coast Institutional Review Board (UCCIRB) and a letter of introduction from the Population and Health Department. Subsequently, permission was obtained from the Assin South District Assembly. In the field, informed consent was obtained from the parents and adolescents aged 18-19 years and adolescents below 18 years also assented after their parents have consented. The researchers personally identified themselves to the respondents and the option of opting out of the study reiterated at each stage of the interview. The rationale and nature of the research were explained in clear terms to respondent's right from the beginning of the study. Anonymity and free choice of participation with no undue consequences to respondent's decisions were ensured. During the fieldwork, all forms of identification including respondents' names, addresses and telephone numbers were avoided.

Research instruments for data collection

In line with the quantitative approach which was employed in the study, structured questionnaires were used to obtain data from

both parents aged 30-59 years and adolescents aged 15-19 years. The structured questionnaires were used to elicit data on the climate of trust parents build and maintain with children; parents' intention to engage children in communication; the kind of structure of home parents build with children; parent-child time shared and the specific elements of parent-child connectedness that are considered to support closeness in a relationship and also influence the effective role PCC plays in delaying and reducing risky sexual behaviour among adolescents. Separate questionnaires were used to solicit similar data from parents and adolescents. The questionnaires served as a framework for the researcher which composed of close and open-ended questions and also posed specific and structured questions on the key issues proposed in the objectives and the conceptual framework of the study. The research instrument formulated was based on literature and the conceptual framework of the study. Already compiled and tried survey instruments were also reviewed and those deemed appropriate to the study were integrated into the design of the research instrument. Items on the research instrument measuring PCC were extracted from PCC survey. Parental attitude items were compiled from conceptual models and a systematic review survey [50]. Moreover, dating and risky sexual behaviour items were extracted from parent-child sexuality communication as well as parental factors and sexual risk-taking surveys [51]. The questionnaire was preferred because according to Sansoni (2011) it ensures a wider coverage and enables the researcher to reach out to a large number of respondents in a short period and helps to provide data which cannot be provided when using other approaches in same short period. This minimizes the problem of no-contact which other methods face (Figure 2).

Pretesting of questionnaires

To check for the ambiguity of the questionnaires for the study, they were given to course mates, peers and the supervisor to read through. Suggestions that were made helped in modifying and restructuring the questionnaires appropriately. The researcher also carried out a pilot study on parents aged 30-59 years and adolescents aged 15-19 years in the Assin North Municipality which shares a border with the Assin South District to ensure the acquisition of adequate knowledge about

the respondents. The Assin North Municipality was chosen for the pilot study because it is considered to share common characteristics with the Assin South District. This is in line with the assertion by Bordens and Abbott (2002) that "... once you have organized your questionnaires, it should be administered to a pilot group of respondents matching your main sample to ensure that the items are free from ambiguity" (p. 225). They further posited that after the piloting in a small sample, you then administer your questionnaires to your main sample. The pilot study took place 11 days before the actual data collection week. This was just to allow for final adjustments and modifications to the questionnaire. After the pilot study, questions found not relevant were reformulated.

Variables and measurements

The independent variable was parent-child connectedness (PCC) and the outcome variable was risky sexual behaviour. All the variables were chosen based on the PCC, the conceptual framework adapted for the study and the literature [52,53].

According to Lezin et al. (2004), measurement of PCC dwells on the following constructs: attachment/bonding, warmth/caring, cohesion (closeness and conflict), support/involvement, communication, monitoring/control and autonomy. Lezin and colleagues in 2004 highlighted 71 examples of measures from each of the constructs. These measures were assumed to be possible risk and protective factors of PCC. Positive ("+") and the negative ("-") symbols were used to illustrate possible risk and protective factors. For instance, the positive ("+") symbol signals a possible protective factor while the negative ("-") symbol shows a possible risk factor. In addition, 27 other possible risk and protective factors are listed for which measures were not found, but are supported in the literature as influences on the PCC construct. This positive ("+") and the negative ("-") symbols approach used to illustrate possible risk and protective factors were emerged to be a bit technical to the current study because binary logistic regression analysis does not give negative ("-") odds ratios therefore, the current study adopted odds ratios less than 1 as a possible protective factor to risky sexual behaviour while odds ratios greater than 1 as a possible risk factor to risky sexual behaviour.

The possible variables that were endorsed by Lezin and colleagues (2004) to measure attachment/bonding construct are; parent and child share thoughts and feelings, parent and child feel close, child wants to be like mother/father (identification), parent and child seem "in tune", mutual warmth, happy emotional tone, smiling, and laughing.

Those that measure warmth/care construct are; parents help child, parents understand what child needs and wants, empathy, affection, reciprocity, rejection, coldness, indifference, parent's "child-centeredness", perceived caring, feeling loved and wanted, neglect, acceptance, understanding, respect, and responsiveness.

Concerning cohesion (closeness and conflict) construct measurement, the possible variables agreed on by Lezin et al. (2004) are: mutual satisfaction with relationship, spend time together, joint activities, arguments, supportiveness, togetherness, get along well, commitment, religious values, family stresses, keep in touch with relatives, family rituals, joint decision-making, problem-solving.

Furthermore, regarding measurement of support/involvement construct, the following variables were outlined by Lezin et al. (2004) namely: parent affirms child's ideas, perspectives, stories, encouragement, appreciation, attend school, sports events, help choose courses, meet with teachers/counselors, parents set high expectations and parents provide guidance.

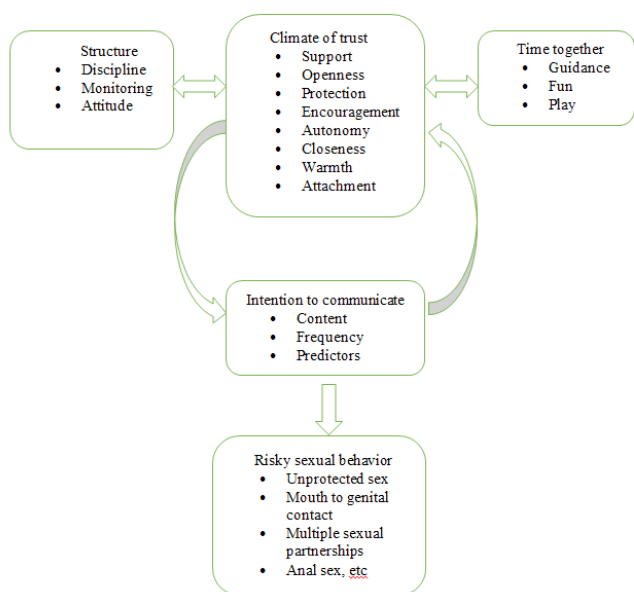


Figure 2: An adapted conceptual framework that links the various concepts that emerged from the literature review. (Source: Adapted from Lezin et al. (2004)).

With respect to communication construct, Lezin and colleagues (2004) outlined: intrusiveness [parent interrupts, dominates child's conversation], use of explanation and reasoning, frequency of discussions, spend time talking together, share thoughts and feelings, clarity of messages about risk behaviour and values, child's comfort discussing problems with parent, openness and listening.

For monitoring/control construct, the variables were: a. rules governing; bedtime, homework, TV, alcohol/drugs, dating, clarity of rules and agreement with parent rules; b. monitoring: child calls if late, parents know if not home, child can reach parents, parents know where child is after school and with whom, parents know child's friends, child's perception of parents' knowledge of where he/she goes and whom he/she is with, parent's presence before and after- school, dinner, bedtime, weekends, child's perception of parent's strictness, how often child goes where told not to, how difficult it is to know where child goes, adult supervision of children's parties, over-protectiveness; "babying", controlling behaviour-blame, guilt, rejection/withdrawal, erratic emotional behaviour, punishment, type of punishment -restrict activities, slapping/hitting, arguing, name-calling; parents knowledge of child's friends, activities and whereabouts, parents' awareness of child's risk behaviour, consistency in rules and discipline.

Lastly, autonomy construct measurement dwelt mainly on: child makes own decisions, child's perception of parent's non-coercive, democratic discipline, encouragement of child's own ideas, intrusiveness, locus of control, voice in family decisions, trust, respect for child's individuality.

Fieldwork and data collection procedure

Data collection started after the UCCIRB had approved the research protocol. The collection of data took place at the various study sites namely; Assin Adiembra, Assin Darmang, Nsuaem-Kyekyewere and Assin Jakai on 23rd of June, 2020 and ended on 5th of July, 2020 at the Assin South District in the Central Region of Ghana. In all, 13 days were used to collect the data from the field. Each community was contacted separately to fix the befitting time to administer the questionnaire. The questionnaires were administered in person to all the communities. It was purposely done to: explain the goals for the research; direct the parents' and adolescents' attention to their rights during the study; clarify the instructions for answering and obtain a good return rate and more accurate data.

Since the researcher could not administer the questionnaires alone, four research assistants were hired and trained on the purpose of the study to assist in the administration of the questionnaires. The questionnaires were administered and taken that same day. To ensure successful collection and sorting of the questionnaires, each questionnaire was given a serial number according to the separate communities.

In the field, two sets of interviews were conducted in each household for the parent-child dyad to avoid spying and to ensure openness and truthful responses. Generally, parents were first interviewed before the child.

Data quality concerns

Recently, in social science research, data quality has become a pertinent concern and mainly pivoted on validity and reliability. Reliability tries to assess the internal consistency of results across variables within a test. Cronbach's alpha was adopted to test for the internal consistency reliability of the data collected from the field

because according to Cortina (1993), it is rated to be the most utilized internal consistency for measurement and it is mostly viewed as the mean of all possible split-half coefficients. Broadly speaking, it is an earlier procedure for computing an internal consistency which helps to find out how all variables on the analysis correlate to all other variables. Per the reliability test on the PCC and RSB data collected from the field, it emerged that Cronbach's alpha rated the data as acceptable with a reliability of $\alpha = 0.63$ and with a scale comprising 43 items, mean of 74.95, variance of 41.04 and standard deviation of 6.41. According to Griethuijsen, et al. (2014) a general accepted rule is that alpha of 0.6-0.7 indicates an acceptable level of reliability and that data is useful.

Effort and befitting approaches were also made to ensure validity of data collected from the field which comprise pretesting of questionnaire before the actual data collection. As well, standardized research instruments which were used in previous PCC, and PCSC survey as well as parental attitude survey were adopted. Again, in the study, the questions asked of respondents served as the premise of the findings and conclusions. These questions constituted the 'input' for the research conclusions (the 'output'). Therefore, in order to achieve a validity, effort was made to ensure that this input passes through a series of steps namely; the selection of a sample, the collection of data, the processing of data, the application of statistical procedures and the writing of a report. It became necessary to ensure that these inputs go through series of steps because the researcher did not want the manner in which all of these are done to affect the accuracy and quality of the study conclusions.

Data analysis procedure

The analysis was based on the completed questionnaires from the field. The data collected were grouped under sub-headings and categories based on how the questionnaires were structured and the purpose of the study such that each open and close-ended question provided answers for each of the research objectives. Data collected from the field were first cross-checked to ensure that they were correct and had no errors in them. Questions that requested respondents to choose more than one option were re-coded as well as the open-ended questions to enable easy entry and analysis. The data were then transferred to the computer and processed using the Statistical Package for Social Sciences (SPSS) version 20 and Stata.

Frequency distribution was used to summarize demographic data, responses on climate of trust, communication, structure of home, time shared and PCC elements that support closeness in a relationship by parent-child dyad. The Pearson's chi-squared test of independence was used to test the four statistical hypotheses postulated in the study to either accept or reject the null hypotheses. However, the binary logistic regression analysis was also run on the various results to identify possible risk factors and protective factors to adolescents' risky sexual behaviour.

Results

This section deals with the presentation and interpretation of the data analysis. This is done in three sections. The first part focuses on descriptive statistics on adolescents' and parents' data. The second section examines the results from the Pearson's chi-squared test of independence and the last section is on the binary logistic regression analysis.

Socio-demographic characteristics of respondents

Table 2 presents the socio-demographic characteristics of

respondents. The respondents comprised 54.8 per cent females and 45.2 per cent males. Nearly half (48.6%) of the parents in the sample were between the ages of 40 and 49 years while about a quarter (24.9%) were in the 30-39 age group. Regarding educational level, only 2.3 per cent of the parents had tertiary education compared to 44 percent who completed primary school. Whereas self-employment was a dominant category of employment status constituting over half (50.3%) of the total respondents, the employed category was the least (11.3%). In terms of religious affiliation, Christianity dominated (81.9%) and those not identified with any religion were 1.7 per cent.

Nearly a third (31.6%) of the adolescents were 19 years old while about 10 per cent were 17 years old (Table 2). More than half (56.5%) of the adolescents indicated that they were still in school. Out of the 20 parents who were identified as employed, about 5 percent earned more than GH¢1500.00.

Parent-child connectedness

PCC has the potential to empower adolescents to pull off the numerous problems connected to youthfulness. There is an indication that when PCC is established, maintained and increased in a family, the outcome is an everlasting strong intimacy among family members devoid of conflicts (Figure 3).

This section of the chapter analyses climate of trust as one element of the parent-child connectedness. Specifically, the focus is on eight variables of a climate of trust, namely, support, openness, protection, encouragement, autonomy, warmth/care as well as closeness and

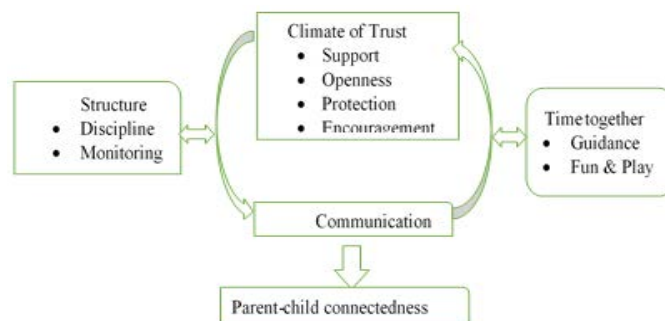


Figure 3: The original conceptual framework propounded by Lezin, Roller, Bean and Taylor (2004) to measure Parent-Child Connectedness.

attachment. The reason for this aspect of the chapter is a need to understand if parents build and maintain a climate of trust with children in the family which can be used to conclude if it positively or negatively influences adolescents' risky sexual behaviour. These variables have been used to assess if parents build and maintain a climate of trust with children in the family.

Climate of trust parents build and maintain with children

To obtain data on the climate of trust parents build and maintain with children, research objective one was formulated. The respondents were, therefore, asked series of questions to examine if parents built and maintained a climate of trust with children. The results are presented in Table 3.

On sharing thoughts and feelings with adolescents, the results show that all respondents (both parents and adolescents) reported that parents share thoughts and feelings with adolescents. On whether thoughts and feelings are shared often or occasionally, 87.6 per cent of parents and 80.2 per cent of adolescents said parents often shared thoughts and feelings with adolescents. Concerning the emotional tones that are present when parents and adolescents come close to each other, the results discovered that all parents and 97.2 per cent of adolescents reported happiness, smiling and laughter as the emotional tones (Table 3).

Parents were asked to indicate how they expressed warmth towards adolescents and the results revealed that almost all the respondents (parents 99.4 per cent and adolescents 96.6 per cent) stated empathy, affection and reciprocity as the procedures through which parents expressed warmth towards adolescents. The analysis regarding if parents are supportive towards adolescents or not showed that a little above ninety-five per cent (95.5%) of parents and all the adolescents said parents are supportive. When asked whether adolescents were autonomous or not, the outcome revealed that 95.5 per cent of parents and 80.2 per cent of adolescents reported that adolescents are autonomous (Table 3).

Parents were asked to indicate whether they offer encouragement to adolescents. The results revealed that all the respondents (parents and adolescents) indicated that parents offer encouragement to adolescents. Concerning the reasons why parents offer encouragement to adolescents, parents were asked to indicate why they encourage adolescents and the outcome was that 71.2 per cent of parents and 83.6 per cent of adolescents stated that parents want adolescents to achieve a target, establish trust in parents and also to strengthen adolescents who are broken-hearted (Table 3).

On openness, parents were asked whether they were open to

Table 2: Sociodemographic characteristics of parents and Adolescents.

Characteristics	Parents (n=177) %	Adolescents (n=177) %
Sex		
Male	45.2	45.2
Female	54.8	54.8
Age group in years		
30-39	24.9	
40-49	48.6	
50-59	26.6	
Age in years		
15		16.4
16		26
17		9.6
18		16.4
19		31.6
Educational level		
None	15.8	
Primary	44.1	1.1
JHS	15.3	29.4
Secondary	22.6	12.4
Tertiary	2.3	0.6
Still in school		56.5
Employment status		
Employed	11.3	
Unemployed	38.4	
Self-employed	50.3	
Religious affiliation		
No religion	1.7	1.7
Christian	81.9	81.9
Muslim	7.9	7.9
Traditionalist	8.5	8.5
Total	100	100

Table 3: Climate of trust parents build and maintain with children.

	Parents (n=177) (%)	Adolescents (n=177) (%)
Climate of trust		
Share thoughts and feelings with a child	100.0	100.0
Frequency for sharing thoughts and feelings		
Often	100.0	80.2
Occasionally		19.8
Emotional tones present when parents and adolescent come close		
Happiness, smiling and laughter	100.0	97.2
Sorrow, regretful and misunderstanding		2.8
Warmth expression towards adolescents		
Empathy, affection and reciprocity	99.4	96.6
Rejection, coldness and indifference	0.6	3.4
Child feel loved and wanted	100.0	100.0
Indicator showing child feel loved and wanted		
Spend time together, have joint activities and supportive	94.4	87.6
Joint decision making and problem solving	5.6	12.4
Parent support child		
Yes	95.5	100.0
No	4.5	
Grant child autonomy		
Yes	95.5	80.2
No	4.5	19.8
Offer encouragement to a child	100.0	100
Ways of offering child an encouragement		
Praise child	27.7	27.1
Celebrate child's success	72.3	72.9
Why child encouragement		
To achieve a target, establishment of trust and strengthen brokenhearted	71.2	83.6
Feel wanted, belonged, motivated, disciplined and to offer guidance	28.8	16.4
Opened to a child	100.0	100.0
Ways parents are opened to a child		
Chat together	85.9	85.9
Play together	14.1	14.1
Why opened to a child		
Due to intimate relationship	65.5	64.4
Building child's charisma	19.2	22.0
Better guidance and appropriate nurturing	15.3	13.6
Total	100.0	100.0

Source: Fieldwork, 2020

adolescents or not and the result showed that all the respondents (parents and adolescents) reported that parents were open to adolescents. When asked ways parents are open to adolescents, the results revealed that 85.9 per cent of parents and 85.9 per cent of adolescents said parents are opened to adolescents by chatting together (Table 3).

When asked why parents are open to adolescents, the results revealed that 65.5 per cent of parents and 64.4 per cent of adolescents reported that it is due to intimate relationship while 15.3 per cent of parents and 13.6 per cent of adolescents indicated better guidance and appropriate nurturing. In order to be able to identify whether PCC has made an impact on adolescents' sexual life, they were asked some specific questions regarding dating and risky sexual behaviour. The results are presented in (Table 4).

Concerning dating, adolescents were asked to stipulate whether they had ever dated or not and the results indicated that 59.9 per cent adolescents had never dated while 40.1 per cent adolescents reported that they had ever dated (Table 4).

Among the 71 adolescents who were identified to have ever dated,

Table 4: Adolescents' risky sexual behaviour.

Factor	Adolescents (%) (n=177)
Ever dated	
Yes	40.1
No	59.9
Ever practised risky sexual behaviour	
Yes	36.2
No	63.8
Total	100

Source: Fieldwork, 2020

about 65 per cent had ever dated 1-5 partners, about 34 per cent had at least dated 6-10 sexual partners while 1.4 per cent had dated 11-15 sexual partners. Out of the 71 adolescents who were identified to have ever dated, about 92 per cent had been in dating for about 1-5 years whilst 8.5 per cent started dating 6-10 months ago.

Regarding risky sexual behaviour, adolescents were asked to indicate whether they had ever practised any risky sexual behaviour

or not and the results obtained showed that 63.8 per cent adolescents reported that they had never practised any risky sexual behaviour while 36.2 per cent adolescents reported that they had ever engaged in risky sexual behaviour (Table 4).

Among the 64 adolescents who were identified to have ever practised risky sexual behaviour, about 63 per cent (62.5%) had ever engaged in mouth to genital contact and started sexual activity at a younger age, 28.1 percent indulged in multiple sexual partners and sex without a condom while 9.4 percent practised unprotected sex.

In Table 5, chi-square analysis examining the relationship between climate of trust and adolescents' risky sexual behaviour is presented. This analysis was run to test the hypothesis that there is no relationship between climate of trust and adolescents' risky sexual behaviour. No statistically significant relationship was found between climate of trust and adolescents' risky sexual behaviour with respect to the p-value of the various explanatory factors studied under climate of trust namely; thoughts and feelings sharing frequency [$p=0.892$], family emotional tones [$p=0.260$], parental warmth expression towards

adolescents [$p=0.473$], indicator showing that child feels loved and wanted [$p=0.620$], parental supportive strategy towards adolescents [$p=0.436$], child being autonomous [$p=0.797$], parental protection strategy towards adolescents [$p=0.129$], parental encouragement strategy towards adolescents [$p=0.633$], why parents encourage a child [$p=0.828$], parental openness strategy towards adolescents [$p=0.184$] as well as why parents are open to adolescents [$p=0.297$] and adolescents' risky sexual behaviour (Table 5).

Following the Chi square test of independence results on climate of trust and adolescents' risky sexual behaviour, further analysis was run using the binary logistic regression to determine how the respective categories of the explanatory factors under climate of trust drive adolescents' risky sexual behaviour. However, this analysis became necessary in order to be able to tell among the various categories of explanatory variables studied those that were possible risk factors and those that were possible protective factors to adolescents' risky sexual behaviour. The results are presented in Table 6 (Table 6).

It emerged in Table 6 that, offering encouragement to adolescents

Table 5: The relationship between climate of trust and adolescents' risky sexual behaviour.

Factor	Ever practised risky sexual behaviour(%)	Never practised risky sexual behaviour (%)	Total n(%)	Chi square	P-Value
Thoughts and feelings sharing frequency				0.018	0.892
Often	35.9	64.1	142(100.0)		
Occasionally	37.1	62.9	35(100.0)		
Family emotional tones				1.267	0.26
Happiness, smiling and laughter	35.5	64.5	172(100.0)		
Sorrow, regretful and misunderstanding	60	40	5(100.0)		
Warmth expression				0.515	0.473
Empathy, affection and reciprocity	37.1	64.3	171(100.0)		
Rejection, coldness and indifference	50	50	6(100.0)		
Indicator showing child feel loved and wanted				0.246	0.62
Spend time together, have joint activities and supportive	35.5	64.5	155(100.0)		
Joint decision making and solving child's problem	40.9	59.1	22(100.0)		
Support strategy				0.607	0.436
Attend sport events together and meet with school teacher	46.2	53.8	13(53.8)		
Attend school and help child choose a course of study	35.4	64.6	164(100.0)		
Child being autonomous				0.066	0.797
Autonomous	36.6	63.4	142(100.0)		
Not autonomous	34.3	65.7	35(100.0)		
Protection strategy				2.309	0.129
By giving simple information	18.8	81.2	16(100.0)		
Listen to child, offer guidance and pay attention to anything suspicious	37.9	62.1	161(100.0)		
Encouragement strategy				0.228	0.633
Praise child	33.3	66.7	48(100.0)		
Celebrate child success	37.2	62.8	129(100.0)		
Why child encouragement				0.047	0.828
Achieve a target, establishment of trust and strengthening child brokenhearted	35.8	64.2	148(100.0)		
Feel wanted, belonged, motivated, disciplined and guidance	37.9	62.1	29(100.0)		
Openness strategy				1.768	0.184
Chat together	34.2	65.8	152(100.0)		
Play together	48	52	25(100.0)		
Why opened to a child				2.43	0.297
For intimate relationship	39.5	60.5	114(100.0)		
Building child's charisma	25.6	74.4	39(100.0)		
For better guidance and appropriate nurturing	37.5	62.5	24(100)		

Note: Row percentages in parenthesis, chi square significant at (0.001)***, (0.01)**, (0.05)*
Source: Fieldwork, 2020.

Table 6: Binary logistic regression result on climate of trust and adolescents' risky sexual behaviour.

Factor	Odds Ratio	P-value	95% CI	
Frequency for sharing thoughts and feelings (Often=1.0)				
Occasionally	0.995	0.991	0.423	2.339
Emotional tones present when parents and adolescent come close (Happiness, smiling and laughter=1.0)				
Sorrow, regretful and misunderstanding	3.701	0.192	0.518	26.442
Warmth expression towards adolescents (Empathy, affection and reciprocity=1.0)				
Rejection, coldness and indifference	2.517	0.291	0.454	13.947
Indicator showing child feel loved and wanted (Spend time together, have joint activities and parents are supportive=1.0)				
Joint decision making and problem solving	2.298	0.099	0.856	6.171
Parents supportive strategy (Attend sport events with child and meet with child teacher=1.0)				
Accompany a child to school and help child to choose a course of study	0.495	0.273	0.141	1.74
Autonomy granting strategy (Allows me make my own decisions and voice in family decisions=1.0)				
Offer me encouragement on my own ideas and respect for my individuality	7.486	0.022*	1.331	42.09
Parents protection strategy (By giving simple information=1.0)				
Listen to me, offer guidance and pay attention to any suspicious behaviour	1.847	0.386	0.462	7.379
Why parents encourage a child (To achieve a target, establishment of trust and strengthen broken-hearted=1.0)				
Feel wanted, belonged, motivated, disciplined and to offer guidance	0.847	0.734	0.326	2.203
Ways parents are open to a child (Chat together=1.0)				
Play together	1.575	0.345	0.614	4.043
Why parents openness (Due to intimate relationship and trustworthiness=1.0)				
Building child's charisma	0.403	0.053	0.161	1.01
For better guidance and appropriate nurturing	0.791	0.636	0.3	2.089
Constant	0.565	0.521	0.099	3.235

Source: Fieldwork, 2020, Chi-square significant at (0.05)*

on their own ideas and also respecting their individuality was observed as statistically significant variable that seems to have influenced adolescents' risky sexual behaviour at $P < 0.022$, (OR=7.486, 95%CI[1.331-42.090]). This variable revealed that adolescents that stated that parents offer encouragement to them on their own ideas and also respecting their individuality are 7 times as likely as the adolescents that reported that parents allow them to make their own decisions and add their voice in family decisions. Moreover, the rest of the variables studied under climate of trust and adolescents' risky sexual behaviour were not statistically significant which could be as a result of chance.

Parents' intention to engage adolescents in communication

Good communication among family members is critical to the sexual development and overall well-being of adolescents particularly because of the easy and heightened access of adolescents to information through various media. Without proper guidance, adolescents are exposed to inaccurate information that can lead them to risky sexual behaviour [54]. To assess parents' intention to engage children in communication, several questions were asked to collect data from the respondents to analyse whether parents engage adolescents in communication or not. The questions covered communication intentions, frequency, content and predictors of communication and the results are shown in Table 7 (Table 7).

Regarding communication, parents were asked whether they communicate with adolescents or not and the results indicated that all the respondents (both parents and adolescents) reported that parents communicate with adolescents. Concerning communication intention, parents were asked to indicate their intention behind their communication with adolescents and the results revealed that 27.1 per cent of parents and 35.6 per cent of adolescents reported that, it is for behavioural boundaries while 23.2 per cent of parents and 20.3 per cent

of adolescents said it is for building a child's charisma (Table 7).

With respect to the intention behind communication on opposite sex relationships, majority of the respondents (parents 65.5 per cent and adolescents 75.7 per cent) reported that it is for child's relationship comfort while 11.3 per cent parents and 10.2 per cent adolescents cited clarity of messages about risky sexual behaviour. In relation to parents' intention to discuss condom use among adolescents, majority of the respondents (parents 75.7 per cent and adolescents 89.8 per cent) said that it is for STIs protection. When parents were asked to indicate their intention behind the discussions on sexual health matters, 88.1 per cent of parents and 52.0 per cent of adolescents said that it was to help adolescents to reject sexual risk taking (see Table 7).

On whether parents discuss risky sexual related matters with adolescents or not, the result showed that all the respondents (both parents and adolescents) reported that parents discuss risky sexual-related matters with adolescents. Parents were further asked to indicate their intention behind the discussion of risky sexual behaviour with adolescents and the responses revealed that 54.2 per cent of parents and 85.9 per cent of adolescents said it is to increase adolescents' knowledge of the adverse effects on risky sexual behaviour and also help adolescents to delay sexual debut whilst, 19.8 per cent of parents and 5.6 per cent of adolescents indicated that it is for the establishment of better interpersonal communication skills among the adolescents (see Table 7).

Parents were asked to indicate whether they discuss risky sexual-related matters such as opposite sex relationships, condom usage, risky sexual behaviour and sexual health matters often or occasionally with adolescents and the results indicated that all the parents and 59.3 per cent of adolescents stated that it is often (see Table 7).

Regarding who initiates the talks on risky sexual behaviour, all the

Table 7: Parents' intention to engage children in communication.

	Parents (n=177)	Adolescents (n=177)
	%	%
Parents' communication intention		
Communicate with a child	100.0	100.0
Intention behind the communication		
Behavioural boundaries	27.1	35.6
Building child's charisma	23.2	20.3
Positive social conduct	23.7	18.1
Appropriate nurturing	26.0	26.0
Intention behind talks on opposite sex relationships		
For child relationship comfort	65.5	75.7
Ensure stable relations	23.2	14.1
Clarity of messages about risky sexual behaviour and values	11.3	10.2
Intention behind talks on condoms		
For STIs protection	75.7	89.8
Prevention of unintended pregnancy	24.3	10.2
Intention behind talks on sexual health matters		
Rejecting sexual risk taking	88.1	52.0
Delay sexual debut	11.9	48.0
Discuss topics related to risky sexual behaviour	100	100.0
Intention behind talks on risky sexual behaviour		
Increase knowledge and delay sexual debut	54.2	85.9
Self-efficacy and sexual negotiation skills	26.0	8.5
Better interpersonal communication skills	19.8	5.6
Communication frequency		
Often	100	59.3
Occasionally		40.7
Who initiates the talk		
Parent	100	80.2
Adolescent		19.8
Triggers of risky sexual behaviour communication		
Parents' own awareness on sex education	100	80.2
Perceive self-efficacy		19.2
Total	100	100

Source: Fieldwork, 2020.

parents and 80.2 per cent of adolescents indicated that it is parents that initiate the talks. The study collected information on the predictors of communication on risky sexual behaviour and the results revealed that all the parents and 80.2 per cent of adolescents reported that it is parents' own awareness on sex education (see Table 7).

In Table 8, chi-square analysis examining relationship between parents' intention to engage adolescents in communication and adolescents' risky sexual behaviour are presented. This analysis was run to test the hypothesis that there is no relationship between parents' intention to engage adolescents in communication and adolescents' risky sexual behaviour. The results show a remarkable difference in the seven (7) components studied under parents' intention to communicate with adolescents and adolescents' risky sexual behaviour. Statistically significant relationships were found among two of the components namely; parents' intention to communicate with adolescents [$p=0.049$] as well as parents' intention to discuss opposite sex relationship with adolescents [$p=0.018$] and adolescents' risky sexual behaviour. However, there was no statistically significant relationships found between the other components namely; intention behind condom usage discussions [$p=0.197$], intention behind the discussions on sexual health matters [$p=0.242$], risky sexual behaviour discussion intention [$p=0.648$], communication frequency [$p=0.742$] as well as the

person that initiates the talks [$p=0.892$] and adolescents' risky sexual behaviour (Table 8).

Following the Chi squared test of independence results on parents' intention to engage adolescents in communication and adolescents' risky sexual behaviour, further analysis was run to identify which categories of the various explanatory factors studied under parent's intention to communicate with adolescents were possible risk factors or possible protective factors of adolescents' risky sexual behaviour.

Socio-demographic factors are not factors of parent-child communication intention, but, they were added to the model in order to find out how they also help in driving adolescents' risky sexual behaviour. The socio-demographic factors considered were age, sex, education and religion). This was done because communication is considered to be an important factor that supports closeness in a relationship. The results are presented in Table 9 (Table 9).

It emerged in Table 9 that, building child's charisma was statistically significant related to adolescents' risky sexual behaviour at $p>0.030$, (OR=0.319, 95%CI ([0.114-0.894])). It was observed that adolescents that indicated building child's charisma were 0.68 times or 68 per cent times less likely to engage in risky sexual behaviour relatively to the adolescents that stated for behavioural boundaries (Table 9).

Clarifying messages about risky sexual behaviour was also observed

Table 8: Relationship between parents' communication intention and adolescent's risky sexual behaviour.

Factor	Ever practised risky sexual behaviour (%)	Never practised risky sexual behaviour (%)	Total n(%)	Chi square	P-Value
Intention behind communication with a child				7.859	0.049*
Behavioural boundaries	44.4	55.6	63(100.0)		
Positive social conduct	41.7	58.3	36(100.0)		
Appropriate nurturing	37.5	62.5	32(100.0)		
Building child's charisma	19.6	80.4	46(100.0)		
Intention behind talks on opposite sex relationships				8.086	0.018*
For child relationship comfort	32.8	67	134(100.0)		
Ensure stable relations	32	67.2	25(100.0)		
Clarity of messages about risky sexual behavior and values	12(66.7)	33.3	18(100.0)		
Intention behind talks on condoms				1.663	0.197
For STIs protection	34.6	65.4	159(100.0)		
Prevention of unintended pregnancy	50	50	18(100.0)		
Intention behind talks on sexual health matters				1.367	0.242
Rejecting sexual risk taking	40.2	59.8	92(100.0)		
Delay sexual debut	31.8	68.2	85(100.0)		
Intention behind talks on risky sexual behaviour				0.868	0.648
Increase knowledge and delay sexual debut	37.5	62.5	152(100.0)		
Self-efficacy and sexual negotiation skills	26.7	73.3	15(100.0)		
Better interpersonal communication skills	30	70	10(100.0)		
Communication frequency				0.108	0.742
Often	37.1	62.9	105(100.0)		
Occasionally	34.7	65.3	72(100.0)		
Who initiates the talk				0.018	0.892
Parent	35.9	64.1	142(100.0)		
Adolescent	37.1	62.2	35(100.0)		

Note: Row percentages in parenthesis, Chi-square significant at (0.001)***, (0.01)**, (0.05)*
Source: Fieldwork, 2020

Table 9: Binary logistic regression result on parents' intention to communicate with adolescents' and adolescents' risky sexual behaviour.

Factor	Odds ratio	P-value	95% CI	
Intention behind communication (Behavioural boundaries=1.0)				
For positive social conduct	0.787	0.632	0.296	2.095
For appropriate nurturing	0.666	0.431	0.242	1.832
Child's charisma building	0.319	0.030*	0.114	0.894
Intention behind talks on opposite sex relationship (Ensure stable relations =1.0)				
Child relationship comfort	1.001	0.998	0.366	2.743
Clarity of messages about risky sexual behaviour	5.684	0.014*	1.42	22.755
Intention behind talks on condom (For STIs protection=1.0)				
For prevention unintended pregnancy	0.91	0.872	0.289	2.861
Intention behind talks on risky sexual behaviour (Increase knowledge and delay sexual debut =1.0)				
Self-efficacy and sexual negotiation skills	0.733	0.653	0.188	2.85
Better interpersonal communication skills	0.782	0.758	0.164	3.726
Intention behind talks on sexual health matters (Rejecting sexual risk taking=1.0)				
Delay sexual debut	0.596	0.169	0.285	1.246
Communication frequency (Often=1.0)				
Occasionally	0.563	0.407	0.144	2.193
Initiators of communication (Parent=1.0)				
Adolescent	2.609	0.214	0.576	11.824
Age (Age 17=1.0)				

	15	0.965	0.965	0.201	4.628
	16	0.52	0.445	0.097	2.783
	18	3.105	0.203	0.543	17.741
	19	1.827	0.538	0.268	12.45
Sex (Male =1.0)					
Female		1.786	0.185	0.758	4.208
Education (Still in school=1.0)					
Secondary		0.729	0.779	0.08	6.65
JHS		0.595	0.441	0.161	2.216
Religion (Islamic=1.0)					
Christianity		10.659	0.075	0.786	144.57
Traditional		0.998	0.999	0.035	28.74
Constant		0.05	0.102	0.001	1.818

Source: Field work, 2020, significant at (0.05)*

as statistically significant to adolescents' risky sexual behaviour at $p > 0.014$, (OR=5.684, 95%CI [1.420-22.755]). This identifies adolescents to have 5.7 times more likely to engage in risky sexual behaviour compared with adolescents that stated ensure stable relations (Table 9).

The kind of structure of home parents build with children

Adolescent years are a period of speedy growth, experimentation, and risk-taking. However, taking risks give adolescents the chance to try their skills and abilities and conceptualize their self-identity [55]. However, risks such as engaging in unprotected sex can have harmful and everlasting consequences on an adolescent's health and well-being [52]. Silk and Morris explain that caregivers are a potent influential people in the lives of their adolescents [56].

To determine the kind of structure of home that parents build with children, several questions were asked to collect data from respondents on the kind of structure of home parents build with children. The questions comprised child monitoring, child discipline, risky sexual behaviour among adolescents and parents' attitudes towards adolescents' risky sexual behaviour. The results are presented in Table 10 (Table 10).

Parents were asked to indicate whether they monitor adolescents in the home or not and the results revealed that 89.8 per cent of parents and all the adolescents reported that parents monitor adolescents in the family. Parents who reported that they monitor adolescents were further asked to indicate the kind of monitoring measure they employ to monitor adolescents in the family and the results revealed that 93.1 per cent of parents and 64.4 per cent of adolescents said that parents set rules and regulations for adolescents to obey while 6.9 per cent of parents and 35.6 per cent of adolescents indicated that it is parents strictness (Table 10).

Parents were asked to indicate whether they discipline adolescents or not, the result revealed that all the respondents (both parents and adolescents) said parents discipline adolescents. On the expected type of discipline that parents impose on adolescents, 95.5 per cent of parents and all adolescents said it is democratic. In reference to disciplinary measure parents level on children, a majority of the respondents (parents [86.4%] and adolescents [86.4%]) reported that parents restrict adolescents' activities and resort to name calling. Concerning why parents discipline adolescents, parents were asked to indicate why they discipline adolescents and the results showed that 60.5 per cent of parents and 91.0 per cent of adolescents indicated that it is for behavioural boundaries and self-control (Table 10). On the other hand, parents were asked to indicate whether they have permissive attitudes

Table 10: The kind of structure of home parents build with children.

	Parents(n=177)	Adolescents(n=177)
Structure of home	%	%
Monitor a child		
Yes	89.8	100
No	10.2	
Discipline a child	100	100
Type of child discipline		
Democratic	95.5	100
Don't know	4.5	
Child disciplinary measure		
Restrict child's activities and name calling	86.4	86.4
Slapping and arguing	13.6	13.6
Why child discipline		
Behavioural boundaries and self-control	60.5	91
Positive social conduct and self-sufficiency	39.5	9
Have permissive attitudes towards child's risky sexual behaviour		
Yes	1.7	
No	98.3	100
Total	100	100

Source: Fieldwork, 2020

towards adolescents' risky sexual behaviour or not, the results indicated that 98.3 per cent of parents and all the adolescents said parents do not have permissive attitudes towards adolescents' risky sexual behaviour (Table 10).

In line with the descriptive results for objective three, that are to determine the kind of structure of home parents build with children, a chi-square analysis was run to test the hypothesis that there is no relationship between structure of home and adolescents' risky sexual behaviour. Three categories of explanatory factors were studied under structure of home parents build with children. No statistically significant relationship was found between structure of home and adolescents' risky sexual behaviour with respect to the p-value of the various explanatory factors studied under structure of home namely; monitoring measure [$p=0.088$], why parents discipline adolescents [$p=0.227$] as well as disciplinary measure parents level on adolescents [$p=0.883$] and adolescents' risky sexual behaviour (Table 11).

Table 12 highlights a binary logistic regression analysis on

Table 11: Relationship between structure of home and adolescents' risky sexual behaviour.

Factor	Ever practised risky sexual behaviour(%)	Never practised risky sexual behaviour(%)	Total n(%)	Chi square	P-Value
Monitoring measure				2.909	0.088
Set rules and regulations	31.6	68.4	114(100.0)		
Perceived strictness	28(44.4)	55.6	63(100.0)		
Why child discipline				1.46	0.227
For behavioural boundaries and self-control	34.8	65.2	161(100.0)		
For self-sufficiency and positive social conduct	50	50	16(100.0)		
Disciplinary measure				0.022	0.883
Restrict activities and name calling	55(35.9)	64.1	153(100.0)		
Slapping and arguing	37.5	62.5	24(100.0)		

Note: Row percentages in parenthesis, Chi-square significant at (0.001)***, (0.01)**, (0.05)*
Source: Fieldwork, 2020

Table 12: Binary logistic regression result on structure of home and adolescents' risky sexual behaviour.

Factor	Odds ratio	P-value	95% CI	
Monitoring measure (Set rules and regulations=1.0)				
Perceived strictness	1.662	0.121	0.874	3.16
Why discipline a child (For behavioural boundaries and self-control=1.0)				
For self-sufficiency and positive social conduct	1.685	0.33	0.59	4.807
Disciplinary measure (Restrict child's activities and name calling=1.0)				
Slapping and arguing	1.036	0.94	0.42	2.554
Constant	0.444	0	0.292	0.674

Source: Fieldwork, 2020, significant at (0.05)*

structure of home parents build with children and adolescents' risky sexual behaviour. This analysis was done in order to get an insight into the degree of difference between the respondent categories and also to tell which factors among those components studied under structure of home is a possible risk factor or a possible protective factor of adolescents' risky sexual behaviour which the Chi squared test of independence could not provide. The results are presented in table 12 (Table 12).

It emerged in Table 12 that, none of the variables studied was statistically significant related to adolescents' risky sexual behaviour. This situation could be that the test statistic changed as a result of the number of observations in the dataset, how multivariate the observations were, and how strong the basic patterns in the dataset were. For instance, if one dataset has higher variability while the other one has lower variability, the first data set will give a test statistic closer to the null hypothesis, even whether the true correlation between two variables is the same in either dataset.

Parent-child time shared

In all households, adolescents do well when they have their parents who spend time with them [57]. To analyse whether parents share time with children, some questions were generated to request respondents to provide data that will enable the researcher to measure this objective. The questions asked included the time parents share with children, activities parents share time on with children and why parents share time with children. The results obtained are presented in Table 13 (Table 13).

The results revealed that all the respondents (both parents and adolescents) indicated that parents share time with adolescents. Regarding the activities parents share time on with adolescents, the result showed that 95.5 per cent of parents and 84.5 per cent of adolescents said that they share time together to watch TV and also discuss child's examination papers. When asked why parents share time with adolescents, the results indicated that 61.6 per cent of parents

Table 13: Parent-child time shared.

	Parents(%)	Adolescents(%)
Share time		
Share time with a child	100	100
Activities parents share time on with a child		
Watch TV and discuss child's exam papers	95.5	84.2
Playing games and going to field together	4.5	15.8
Why parents share time with a child		
For interactions, discover child's strengths and interests	61.6	56.5
To have fun and to play	20.3	22
For guidance and solving of child's problem	18.1	21.5
Total	100	100

Source: Fieldwork, 2020

and 56.5 per cent of adolescents reported that it is for interactions, discovery of adolescents' strengths and interests whilst, 18.1 per cent of parents and 21.5 per cent of adolescents said it is to offer guidance and also help adolescents to solve their problems (Table 13).

Another issue is the Pearson's chi squared test of independence analysis examining the relationship between parent-child time shared and adolescents' risky sexual behaviour. This analysis was run to test the hypothesis that there is no relationship between parent-child time shared and adolescents' risky sexual behaviour. The results did not reveal statistical significant relationship between parent-child time shared and adolescents' risky sexual behaviour with respect to the p-value of the various categories of explanatory factors studied under parent-child time shared namely; activity that parents share time on with adolescents [p=0.958] as well as why parents share time with adolescents [p=0.792] and adolescents' risky sexual behaviour (Table 14).

Table 15 presents a binary logistic regression analysis on parent-child time shared and adolescents' risky sexual behaviour. This analysis

Table 14: Relationship between parent-child time shared and adolescents' risky sexual behaviour.

Factor	Ever practised risky sexual behaviour (%)	Never practised risky sexual behaviour (%)	Total n(%)	Chi square	P-Value
Activity share time on				0.003	0.958
Watch TV & discuss child's exam papers	36.2	63.8	149(100.0)		
Playing games & going to the field together	35.7	64.3	28(100.0)		
Why share time				0.466	0.792
For interaction, discover child's strengths and interests	37	63	100(100.0)		
Have fun and to play	38.5	61.5	39(100.0)		
For guidance and solving child's problems	31.6	68.4	38(100.0)		

Note: Row percentages in parenthesis, Chi-square significant at (0.001)***, (0.01)**, (0.05)*
Source: Fieldwork, 2020

Table 15: Binary logistic regression result on parent-child time shared and adolescents' risky sexual behaviour.

Factor	Odds ratio	P-value	95% CI	
Activity share time on (Watch TV and discuss child's exam papers=1.0)				
Playing games and going to the field together	0.989	0.98	0.421	2.322
Why share time (Have fun and to play=1.0)				
For interactions, discovery of child' strengths and interests	0.938	0.871	0.435	2.025
For guidance and solving child's problems	0.738	0.527	0.288	1.891
Constant	0.627	0.174	0.319	1.23

Source: Fieldwork, 2020, significant at 0.05*

became necessary in order to get an insight to identify among the components studied under parent-child time shared those that are a possible risk factors or possible protective factor to adolescents' risky sexual behaviour which the Chi squared test of independence could not provide (Table 15).

It emerged in Table 15 that none of the variables were statistically significant to adolescents' risky behaviour. This situation could be that the test statistic changed as a result of the number of observations in the dataset, how multivariate the observations were, and how strong the basic patterns in the dataset were. For instance, if one dataset has higher variability while the other one has lower variability, the first data set will give a test statistic closer to the null hypothesis, even whether the true correlation between two variables is the same in either dataset.

Elements of PCC that support closeness in a relationship

In recent years, several studies have established the standing of parent-child connectedness (PCC) as a protective factor associated with various youth health outcomes including pregnancy, HIV/STD, drug abuse, tobacco use, and delinquency [58]. None of the studies has documented the elements of PCC that are important, support closeness in a relationship and aid the "super protective" role that PCC plays in delaying and reducing risky sexual behaviour among adolescents. Given this, objective five, which is to document the elements of parent-child connectedness that are considered to support closeness in relationships and aid the "super protective" role that PCC plays in delaying and reducing risky sexual behaviour among adolescents was formulated to gather data from respondents to identify the elements of PCC that are considered important, support closeness in a relationship and aid the "super protective" role that PCC plays in delaying and reducing risky sexual behaviour among adolescents. The results are presented in Table 16 (Table 16).

Concerning the four elements of parent-child connectedness (climate of trust, communication, structure of home and time shared), parents were asked to indicate from the elements those they think

Table 16: Elements of PCC that support closeness in a relationship.

Elements	Parents (n=177)	Adolescents (n=177)
	%	%
Climate of trust, communication, structure and Time share together	92.7	96.7
Structure, communication and time shared	2.3	3.4
Parent-child communication	5.1	
Total	100	100

Source: Fieldwork, 2020

were most important, support closeness in a relationship and aid the effective role that PCC plays in delaying and reducing risky sexual behaviour among adolescents. The results revealed that almost all the respondents (parents 92.7% and adolescents 96.6%) stated climate of trust, communication, structure of home and time shared to be their choice of elements whilst 2.3 per cent of parents and 3.4 per cent of adolescents reported structure, communication and time shared as their choice of elements (Table 16).

Discussion

The discussion of the analysis is based on the selected variables to investigate the influences that parent-child connectedness (PCC) exert on adolescents' risky sexual behaviour in the Assin South District. The discussion of the results of the study concerns the objectives, literature review and key variables, using parent-child connectedness as the underlying conceptual framework. The study focused on investigating the climate of trust parents build and maintain with children, parents' intention to engage children in communication, the kind of structure of home parents build with children, parents and children time shared together, and the specific elements of PCC that influence closeness in a relationship and aid the defensive role that PCC plays in delaying and reducing risky sexual behaviour among adolescents.

Climate of trust parents build and maintain with children

The focus of this objective is on parental attachment, warmth, support, autonomy, encouragement, closeness, protection and openness. Parents' and children's report on parental attachment, surprisingly, revealed that parents often share thoughts and feelings with adolescents in the family with emotional tones being happiness, smiling and laughter. The study found that the reports of both parents and children indicate that all parents share thoughts and feelings with their children. The reason for these responses could be that parents want to help shape adolescents' social, cognitive, and emotional developments that will follow later in their lives. It is assumed that the more and more parents share thoughts and feelings with adolescents; it helps to escalate the mutual cohesion that is "an enduring bond" that exists among them in the family. Furthermore, the sharing of thoughts and feelings by parents often with adolescents is an indication that they want to establish a strong bond in the family. With this, adolescents without any hesitation, might open up to share their problems with parents for redress and also, do away with the tendency that adolescents might become stubborn to flout parental directives. The emotional tones that appeared might probably be the outcome of parental responsiveness and the advanced and powerful attachment they built with adolescents in the family. This view is per an emphasis made by Jaccard, Dittus and Gordon (2000) that, attachment is based on the idea that an infant's first attachment experience from parents profoundly shapes the social, cognitive, and emotional developments that follow.

Evidence from both parents and children's data indicate that all the parents are certain that their children feel loved and wanted in the family. The study found that the reports of both parents and children indicate that almost all parents spend time together, have joint activities and are supportive to children with empathy, affection and reciprocity being the warmth expression strategy in the family. This result might imply that parents in their wisdom respond with sensitivity and consistency to adolescents' needs. When this happens in the family, it can make adolescents to feel loved and wanted in the family, thereby discouraging them from indulging in risky sexual behaviour. Parents, who aspired that their adolescents must get the best in life, would go any length to make sure that their adolescents get the best. In view of this, they might try to promote a caring relationship with adolescents to establish an intimate relationship with the adolescents so that, adolescents would, in return, adhere to all parental directives without any hindrance. This is in line with a submission by Levine, Emery and Pollack (2007) that caregivers can upgrade their caring relationship with their adolescents by involving themselves in the lives of their adolescents [59].

From the study findings, it was realised that parents are supportive towards adolescents. However, from a child's viewpoint, all the parents are supportive. It might imply that adolescents have been constantly experiencing parental support in their lives in the area of advice against risky sexual behaviour, provision of needs and encouragement. So, based on this, adolescents might have also assessed their lives and were convinced that they had not gone astray in society to become irresponsible people, and were not stranded in life let alone to be influenced negatively by their peers. This finding affirms a submission by Clark (2000) that when parents endeavour to know what their teenagers do, who they spend their time with as well as setting limits for behaviour with daily check-ins to be convinced these limits are being achieved, they can reduce the probability of their adolescents being pregnant [60].

On the issue of autonomy, parents reported that they grant autonomy to adolescents. Evidence from both parents' and children's data confirm that parents respect the autonomy they grant to adolescents. The view that parents grant autonomy to adolescents might imply that they want to correct the myth surrounding adolescents that they naturally distance themselves from their parents during the adolescence period. In families where adolescents are autonomous, it enables them to freely explore the environment, contribute to family decision-making and makes them to get along well in the society. Autonomy is the only way that can make adolescents to contribute to family decisions. Therefore, if parents realise that they might need their children's idea or voice in family decisions, then, they will grant the child an autonomy so that, that child can add his or her voice in family decisions. Mostly, this occurs in families where parents practise an authoritative parenting style that allows some level of autonomy to adolescents. This finding is similar to Clark (2000) and Sartor (2002) that authoritative parenting expands the "secure base" construct from childhood attachment, offering elderly children and teenagers a similar secure base from which to harmlessly explore and learn [61].

Nevertheless, on the aspect of encouragement, it was identified that parents offer encouragement to adolescents. Data from parents and children showed that the majority of parents offer encouragement to adolescents just to help them achieve a target establish trust and strengthen adolescents who are broken-hearted. This indicates that parents believe in the assumption that, money is not everything and that they do not have to be rich before they can offer encouragement to adolescents. Further, it points to the fact that protection, encouragement and guidance of adolescents in the family is not pivoted on being rich or poor but, has to do with commitment to help in moulding children's life to prevent them from falling prey to any misfortune that has the capacity to swallow them such as being infected with HIV and AIDS on one hand. It might also be that parents believe that they have observed that their encouragement is conducive to children's scholastic achievement. Therefore, they endeavour to encourage and support adolescents to achieve success in life. The encouragement parents offer to adolescents exercises evidential influence on children's interests, aspirations, attitudes and achievement on the other hand. This finding agrees with an assertion made by Agarwal and Pande (1997) that, parental encouragement is recognized as parental care that motivates children, guides them so that they may not feel disheartened at a particular point of difficulty [62].

All the respondents sampled for the study hold the view that parents are open to adolescents. It appeared chatting and playing together among parents and adolescents were the various reasons why parents are open to adolescents. Furthermore, the study discovered that a greater proportion of parents in both the parent and child reports indicate that about 86 per cent of parents chat with adolescents. Parents' openness to adolescents could be that they are not authoritarian parents and, therefore, do not practise authoritarian parenting style in their home where children are restricted from exploring the environment to their advantage coupled with child's basic needs denial. When parents warmly welcome adolescents' problems in the family without raising any eye, it motivates adolescents to be convinced that parents are transparent and caring. Moreover, it could be that parents and adolescents bury their misunderstandings and interact freely in order to renegotiate their intimate relationship in the family. This result is in line with Brannen, Dodd, Oakley and Storey's (1994) study that if parents demand that their 'strong intimate relationship' with their adolescents will go into adulthood then, they should, as part of their involuntary efforts, make ties on the grounds of equality and mutual

respect, honesty and understanding [63].

It emerged that the probability value (p-value) of the various explanatory factors studied under climate of trust were all greater than the standard 0.05 cutoff which indicates that the variables were independent of each other and that there was no statistically significant relationship between the categorical variables. In view of this, the null hypothesis is confirmed. However, this does not mean that the climate of trust that parents built and maintained with adolescents does not influence adolescents' risky sexual behaviour. Rather, it may happen that it does, but restrictively has to do with how climate of trust features in parenting duties in the Assin South District. Studies have postulated that this climate of trust features in parenting duties which are being demonstrated in daily interaction and uttered freely as family members get along well. The assumption underlying this result might be that the approach that parents in the Assin South District used in carrying out their day to day interaction with adolescents is not the best method; therefore, it does not have much influence on adolescents' sexual life.

The binary logistic regression result revealed that association was found between offering adolescents encouragement on their own ideas and respecting their individuality and adolescents' risky sexual behaviour. This association had revealed that the more and more parents continued to offer encouragement to adolescents on their own ideas and respecting their individuality, it is the more and more that it increases their odds of risky sexual behaviour. However, the odds ratio (7.486) indicated that the variable is a risk factor to risky sexual behaviour. What it means is that no matter how parents massage it, it will continually increase the odds of adolescents to practise risky sexual behaviour.

Moreover, the association found between parents building children's charisma and adolescents' risky sexual behaviour revealed that when parents keep transparency, democratic living and openness towards adolescents in the family, it has the capacity to reduce their odds of risky sexual behaviour. The odds ratio (0.403) revealed that the variable is a protective factor to risky sexual behaviour. This analyses that, adolescents after assessing that parents are opened to them will always have a second thought about behaviour before they perform it, hence, they might not want their parents to be disappointed in them.

Parents' intention to engage children in communication

As the study tries to ascertain parents' intention to engage children in communication on specific risky sex-related behaviour, it was revealed that all parents have at least talked to adolescents about risky sex-related behaviour. This supports the assertion that parents understand the repercussions of the failure to brief adolescents on issues of risky sexual behaviour. The fact that open discussion on sex-related issues in Ghanaian societies is often frowned upon does not necessarily mean that parents in the Assin South District do not talk about them at all. Evidence from both parent and child's data indicated that the discussion of risky sexual behaviour often takes place in the family. This finding point to the fact that parents understand that adolescence is a period of curiosity and exploration. Therefore, they endeavour to signal their values to the adolescents to avert any challenge they might have encountered as a result of information barrier. This result corroborates to a study by Hutchinson, Jemmott, Jemmott, Braverman, and Fong (2003) that talks on risky sex related matters among female parent and female adolescents were found to be attached to less occurrence of coitus and highest birth preventive methods utilization. The finding, again, affirms a study by Meneses, Orrell-Valente, Guendelman, Oman and Irwin (2006) that by rendering hi-fi messages and creating

transparent lines of communication, parents boost their children's acceptance of safer behaviour such as delaying sexual induction and increasing the usage of condoms and other contraceptives [64].

It appeared that parents have varied intentions to the discussion of adolescents' risky sexual behaviour. From a child's viewpoint, parents discuss risky sexual behaviour with them just to help increase their knowledge and delay sexual debut. This result agrees with a study by Whitaker, Miller, May and Levin (1999) which explains that homes in which talks on sexuality is essential, it helps lower rates of teenage pregnancies in such homes.

Various predictors stimulate parental communication on adolescents' risky sexual behaviour. The study found that all parents and 80.2 per cent of adolescents graciously cited "parents' own awareness on sex education" as the dominant trigger for parental communication attitude. This result indicates that parents are most attentive to the safety of adolescents. Primarily, parents conceive that their daughters are inclined to the deception of men and that they need to be taught sex education so that their daughters will not become pregnant unaware to go through stigma in society. This result is in line with a study by Byers, Sears and Weaver (2008) that parental qualities such as parents' own sexual education, sexual knowledge and comfort were the triggers of parents' sexual communication with their children.

The study identified a statistically significant relationship between parents' intention to engage adolescents in communication and adolescents' risky sexual behaviour, therefore, the null hypothesis was rejected. This implies that most parents in the Assin South District are with the view that they have it as a role to impart unto their children's sex education. Ideally, the assumption is that, the more and more parents and adolescents in the Assin South District engage in communication on sexual-related issues, it is the more and more that it opens the lines of close intimacy among them which in turn enable parents to increase the acceptance of adolescents on safer behaviour such as holding up sexual debut, accelerating condom usage and other contraceptives. Though, relationship was found between parents' intention to engage adolescents in communication and adolescents' risky sexual behaviour, not all the components under communication were statistically significant. Among the components that were statistically significant were parents' intention behind communication with adolescents and parents' intention behind communication on the opposite sex relationships. It emerged that the p-value of the variables mentioned above were not greater than the standard 0.05 cutoff which indicates that the variables were not independent of each other and that there was a statistical relationship between the categorical variables. This finding is in line with a study by Whitaker et al. (1999) that parent-child sexuality conversation is targeted towards boosting healthy sexual behaviour, holdup early coitus, reduce the number of sexual partners and improve condom usage. Again, the p-value of the other components namely; intention behind talks on condoms, intention behind talks on sexual health matters, intention behind talks on risky sexual behaviour, communication frequency and who initiates the talks on risky sexual related issues were revealed to be greater than the standard 0.05 cut off which demonstrated that the variables were independent of each other and that there was no statistically significant relationship between the categorical variables.

The binary logistic regression analysis on parents' intention to engage adolescents in communication revealed that association was found between children's charisma building and adolescents' risky sexual behaviour. This relationship had revealed that when parents make time to build their children's charisma, it goes a long way to

decrease their odds of risky sexual behaviour. Per the odds ratio (0.319) of the variable then, one can easily predict that the variable is a protective factor to risky sexual behaviour. Which means that irrespective of how it features in daily activities among parents and adolescents, it will not make the adolescents to engage in risky sexual behaviour.

Moreover, the association found between clarity of messages about risky sexual behaviour and adolescents' risky sexual behaviour revealed that when parents keep on explaining and discussing information about risky sexual behaviour, it tickles the adolescents to go and experiment which on one way or the other can jeopardise their lives. This stem from the fact that the odds ratio (5.684) of the variable classifies it as a risk factor to risky sexual behaviour. What it means is that parent's effort in clarifying messages about risky sexual behaviour to adolescents in order to clear all doubts on their minds rather increases their odds to engage in risky sexual behaviour.

Structure of home parents build with children

Analysing issues on the kind of home parents build with children unearthed that, parents monitor adolescents in the family. Evidence from both parent and child's data support this finding that parents set rules and regulations for child to obey. This supports the assertion that if a child is not being effectively monitored in the family, he or she might go wayward. Primarily, parents want to nurture adolescents in a way that will not undermine their potentials as a future resource of the family and the nation as a whole. Parents set rules and regulations for adolescents to obey in the family because maybe they would want to safeguard and protect adolescents' interest so that, they will not go contrary to the acceptable societal norms. This view is in line with Silk and Morris' (2003) study that monitoring refers to parenting trait that is supposed to direct the child's behaviour in the mode wanted by the parents.

Assessment of child discipline showed that all parents from the parent and child's data discipline adolescents in the family. From a child's viewpoint, the type of discipline parents wage on adolescents is democratic. Both parent and child's data revealed that parents have a different motive for disciplining a child. The most cited was behavioural boundaries and self-control. Disciplining adolescents in the family might be that parents want the adolescents to learn how to manage their feelings, impulses and actions so that, when they grow into adulthood, they can get on well with others. Generally, parental strictness on adolescents is a sign of helping the adolescent child to learn the values that are important to the family and the society as a whole to the extent that, adolescents in their way without any reservation can frown on risky sexual behaviour. Using democratic disciplinary measure on adolescents by parents in the family explains that parents are not authoritarian. Parents who are not authoritarian will wish that children see them to be cheerful, caring, respond to child's needs, set limit and goals for a child as well as trying to make a child understand the reasons for his or her punishment in the family, unlike authoritarian parents who do otherwise. Parents have diverse ways of child upbringing, and therefore, if it is realised that the adolescent child is emotionally weak, they try discipline which is guidance to help improve upon the emotions of the child to be able to stand situations that might bring his or her spirit down as they transition through adolescence to adulthood. Then, when parents observe that their adolescents do not possess good manners, parents employ disciplinary measures such as food denial and freedom restrictions to instil discipline in them to help them to conform to rules and regulations in society. This finding is consistent with studies by Runyan, Dunne and Zolotor (2009) and Maccoby and Martin (2001) which asserted that discipline is roughly assisting

children to acquire the values that are essential to the family. According to them, children learn to make good decisions because they want to do the correct thing, not just to avoid a penalty. This teaches them self-discipline [65,66].

Dating was another concern in the study and the results obtained revealed that 40.1 per cent of the adolescents had ever dated. This signals that parental communication on late initiation of sex has not made an impact on the life of all the adolescents. This points to the fact that parents have inadequate knowledge when it comes to the discussion on sex-related issues and that, they are unable to discuss the relevant issues related to risky sexual behaviour with adolescents to enable them abstain or delay sexual debut. When parents have lenient attitude towards adolescents' early sexual activity, then, they might not see the need to disapprove of adolescents' early sexual activity thereby permitting them to engage in dating at an early age. Parents of these adolescents might not be responsive to the basic needs of adolescents and therefore, it makes the adolescents to look elsewhere for material and economic support. This finding disagrees with a study by Ryan, Jorm and Lubman (2010) that, good communication in the family is key to the sexual development and overall well-being of adolescents, particularly because of the easy and heightened access of adolescents to information through various media. Without proper guidance, adolescents are exposed to inaccurate information that can lead them to risky sexual behaviour.

The findings of the study revealed that about 36.2 percent of the adolescents had ever practised risky sexual behaviour. Primarily, adolescents are curious and of course do experiment and also take advantage of any little opportunity they get in life. When adolescents realise that their parents are not strict, do not keep eyes on them by checking their movement in and out, trying to know all people that matter in their life and do not set rules to govern their bedtime, it makes them to enter into dating and begin to risk their life by engaging in anal sex, mouth to genital contact, unprotected sex and sex without a condom. This result disagrees with a study by Clark (2000) that when parents try to discover what their adolescents do, where they spend their leisure time and endeavour to set a limit for behaviour with frequent monitoring to be certain that this limit is being achieved, they can help modify their adolescents' risks for pregnancy. Moreover, the result disagrees with a submission by Pollack (2007) and Silk and Morris (2003) that adolescents whose guardians use efficient check-in patterns are less liable to initiate early sex.

On the issue of parental attitude towards adolescents' risky sexual behaviour, the study found that all the parents do not have permissive attitudes towards adolescents' risky sexual behaviour from a child's viewpoint. This implies that parents want the best in life for their children. Therefore, they do not take chances to overlook children engaging in any suspicious behaviour which might have long-lasting consequences to ruin the adolescent's life. This view disagrees with a study by Thomson, McLanahan and Curtin (1992) that adolescent whose mothers have lenient attitudes about teenage and premarital sex also start sexual debut at a younger age. Statistically significant relationship was not found between structure of home parents built with adolescents and adolescents' risky sexual behaviour. Therefore, the null hypothesis is confirmed.

Parent-child time shared

Analysis of parent-child time shared demonstrated that all the parents share time with adolescents. Both parent and child's data revealed that parents have diverse activities they spend time on with

adolescents. The most cited were watching TV and discussion of child's exam papers. From both parent and child's data, the most cited intention behind the time spent together was interactions and to discover the child's strengths and interests. Parent and child fare better only when they share time for interaction, guidance, play and have fun. With this, parents will be in a better position to identify their child's strengths, interest and any strange attitude about the child so that, they can help to correct it. This finding confirms a study by Hughes (2010) that, in all households, children do well when their parents spend time with them. This has revealed that, parents in their wisdom want to establish an intimate relationship based on reciprocity with the adolescent, so that, adolescents will feel that parents regard them in the family. This finding confirms Thompson, Rehman and Humbert's (2005) study which concludes that, the basic aim of shared activity, be it watching TV together, discussing child's exam papers, playing games or going to the field, is the reciprocity that is the most important factor we look for, no matter if a direct verbal message is exchanged between a parent and a child or not. Parents can also depend on time they share together with adolescents to help expose any accumulated fears and fantasies in the adolescents to help them to overcome those accumulated fears and fantasies in them. This result is in line with a study by Troilo and Coleman (2012) that the play among parents and children reveals to parents about their child's capability and interests. Statistically significant relationship was not found between parent-child time shared and adolescents' risky sexual behaviour, and therefore, the null hypothesis was accepted [67].

Elements of PCC that support closeness in a relationship

The study findings revealed that the majority of the parents adore all the elements of PCC to be important in supporting closeness in a relationship and also aid the super protective role that PCC plays in delaying and reducing risky sexual behaviour among adolescents. From both parent and child's data, the most cited elements were a climate of trust, communication, structure and time shared. The reason for this view could be that parents knew that the interplay among the four elements of parent-child connectedness influences closeness in a relationship and also, contribute to the super protective barrier role that PCC plays in the sexual life of adolescents. This finding corroborates to a study by Blum (2002) and Miller (2002) that the interplay of the four elements of parent-child connectedness aid the defensive role that PCC plays concerning a wide spectrum of risk behaviour beyond teen pregnancy [68].

Strength and Limitations

The study provided to parents the hints about how PCC works to serve as a super protective barrier to adolescents' risky sexual behaviours in the Assin South district. However, the study informed parents about the most up to date international evidence on how PCC can be strengthened and sustained over time. It again helped parents to review their strategies to what working well, identify any gaps, and help strengthen their connection pathways for adolescents.

Moreover, the findings of the study encouraged parents to ensure healthy relationships and well-being for all their adolescents, including a commitment to end HIV and AIDS and other STIs that occur as a result of risky sexual behaviour. This was done to ensure that parents encourage their adolescents to promote and protect their own health, by, for example, making well-informed choices. It was established in the study the need to promote the elements of PCC that are considered to influence closeness in relationships and help the delay and reduction in risky sexual behaviour among adolescents.

Though, effort was made to collect data to conduct the study, but owing to the fact that strict statistical patterns have to be followed to select respondents in the field, it emerged that the researcher could not get a representative sample to represent the target population. Despite applying appropriate sampling plan, the representation of the respondents is pivoted on the probability distribution. This led to miscalculation of the probability distribution and cause falsity in the sample. Again, owing to the quantitative nature of the study, the respondents did not get the opportunity to respond to the questions in their own words, but rather they were forced to choose from fixed responses which do not occur in qualitative research because participants have the liberty to respond to the questions in their own words.

Conclusions

Much risky sexual behaviour are brought about during adolescence and often retained into adulthood which affects health in later life. It has been argued that these risky sexual behaviours sometimes retained. Therefore, analysing the adolescents' sense of connectedness to their parents in their lives might provide important efforts for achieving the desired target. Evidence suggests that parents and adolescents in the Assin South District share thoughts and feelings. This has impacted immensely the delay and reduction of adolescents' risky sexual behaviour in the Assin South District. This again, suggests that the connection between parents and adolescents in the Assin South District is cordial. Secondly, communication, which is one of the core elements of PCC that support closeness in a relationship and for successful super protective role PCC plays remains vibrant because the parents and the adolescents do engage in sexuality communication. For instance, parents discuss risky sexual related matters with adolescents to help the adolescents to delay sexual debut.

The substantial frequency for communication on risky sexual behaviour between parents and adolescents in the Assin South District was observed to be regular. The implication is that, without sexual communication, adolescents are likely to involve in risky sexual behaviour. To a large extent, the study unveiled a climate of trust, communication, structure and time shared to be the most important elements that support closeness in a relationship and also aid the wonderful defensive role that PCC plays in delaying and reducing risky sexual behaviour in an adolescent's life. Three out of the four null hypotheses suggesting no statistically significant relationships between climate of trust, structure of home as well as parent-child time shared, and adolescents' risky sexual behaviour were accepted. Association was found between parents' intention to engage adolescents in communication and adolescents' risky sexual behaviour.

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