

FACTORS ASSOCIATED WITH SEXUAL DEBUT AND DEPRESSION AMONG  
ADOLESCENTS IN RURAL JAMAICA

by

OLANIYI J. EKUNDAYO

PAULINE E. JOLLY, CHAIR  
INMACULADA B. ABAN  
LAURA H. BACHMANN  
JOHN E. EHIRI  
MIRJAM C. KEMPF

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PREVIEW

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# FACTORS ASSOCIATED WITH SEXUAL DEBUT AND DEPRESSION AMONG ADOLESCENTS IN RURAL JAMAICA

OLANIYI J. EKUNDAYO

PUBLIC HEALTH

## ABSTRACT

Individual and family factors have been hypothesized to influence adolescent sexual behavior and depression, but the extent to which this is true for adolescents in Jamaica as a whole and for those in rural areas in particular, has not been well studied. The objective of this dissertation was to identify individual and family factors associated with sexual debut and depression among rural Jamaican adolescents.

To elucidate these factors and to provide information to guide future interventions, we analyzed data on 748 adolescents attending public high schools in the rural parish of Hanover, Jamaica. Multivariate logistic regression was used to predict factors associated with sexual experience, early sexual debut, and depression.

For girls sexual experience was associated with older age at time of survey [Odds ratio (OR) = 1.54; 95% confidence interval (CI) = 1.29-1.84], hanging out with boyfriends (OR=2.27; 95% CI = 1.37-3.76), and lack of parental monitoring (OR=1.20; 95% CI = 1.07-1.35). Living with both biological parents was protective (OR=0.45; 95% CI = 0.30-0.67). For boys being older at time of survey (OR=1.47; 95% CI = 1.07-2.02) and lack of parental monitoring (OR=1.19; 95% CI = 1.01-1.39) were significant predictors.

Early sexual debut for girls was influenced by type of partner at first intercourse (OR=11.95; 95% CI = 2.39-59.69) and liberal attitude towards negative sexual outcomes (OR=1.83; 95% CI = 1.21-2.77). Liberal attitude towards negative sexual outcomes

(OR=3.11; 95% CI = 1.09-8.93) was a major predictor for boys. Being older at time of interview was protective for both genders. Elevated depressive symptom was associated with perceived lack of maternal affection and support (OR=4.06; 95% CI = 2.61-6.32).

Our findings have implications for policy and practice. Education programs that will delay initiation of sexual activity need to start early before adolescents become sexually active. Considering gender differences in some of the factors associated with sexual behavior, prevention programs must adequately address the social and cognitive needs of both sexes. As most homes are female-headed, establishing support systems for the mother to take care of their adolescent children may decrease the odds of depressive symptoms.

## DEDICATION

This dissertation is dedicated to the affectionate memory of my late grand mother Chief (Mrs) Abigail Alaka-Ekundayo, whose legacy of hard work and perseverance has continued to be my inspiration.

PREVIEW

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PREVIEW

## LITERATURE REVIEW

### Introduction

Adolescence is the period of transition from childhood to adulthood, and according to the World Health Organization (WHO) covers the age of 10-19 (WHO, 1995), with remarkable proportions of young people engaging in their first sexual intercourse during this period. Initiation of sexual activity among adolescents has become a public health concern as a result of the continued decline in the age of sexual debut (Centers for Disease Control and Prevention (CDC), 1998) with its social and health consequences (Santelli, DiClemente, Miller, & Kirby, 1999; Coker, Richter, Valois, McKeown, Garrison, & Vincent, 1994). Early sexual debut places adolescents at high risk for unintended pregnancy (Coker et al., 1994) and sexually transmitted infections (STIs) (Upchurch, Mason, Kusunoki, & Kriechbaum, 2004), including Human Immunodeficiency Virus (HIV) (CDC, 2002). Early child bearing has been linked to higher rates of maternal and child morbidity and mortality (Salihu, Sharma, Ekundayo, Kristensen, Badewa, Kirby, & Alexander, 2006), limited life opportunities, and lower future family income (Botting, Rosato, & Wood, 1998).

Understanding the factors that influence an adolescent's engagement in sexual activity has implications for policy and practice (Small & Luster, 1994). This is important because sexual intercourse is the most important determinant of pregnancy and STIs. As a result identifying factors related to sexual activity is central to addressing the issue of teenage pregnancy. In addition, the current HIV epidemic, along with the proliferation of other STIs makes early sexual intercourse a health hazard.

Depression refers to any downturn in mood characterized by feelings of sadness, despair and discouragement, as opposed to clinical depression which is marked by symptoms so severe that they interfere with daily living. Although under-recognized among adolescents (Saluja, Iachan, Scheidt, Overpeck, Sun, & Giedd, 2004) depression is a highly prevalent condition in this age group, and has become a major public health issue in the past two decades (Saluja et al., 2004; Patten, Gillin, Farkas, Gilpin, Berry, & Pierce, 1997; Kubik, Lytle, Birnbaum, Murray, & Perry, 2003). Sexually active adolescents have been reported to experience elevated depressive symptoms compare to their sexually abstinent peers (Rector, Johnson, & Noyes, 2003; Kaltiala-Heino, Kosunen, & Rimpela, 2003; Hallfors, Waller, Bauer, Ford, & Halpern, 2005; Tubman, Windle, & Windle, 1996). The stress associated with early involvement in sexual activity has been implicated in this relationship (Hallfors et al., 2005). Depressed adolescents are more likely than any other youth to engage in unsafe sexual practices and other risky behaviors (Brooks, Harris, Thrall, & Woods, 2002; Shrier, Harris, & Beardslee, 2002; Kosunen, Kaltiala-Heino, Rimpela, & Laippala, 2003). Previous research conducted in many western countries suggested that mental health problems including depression and low self esteem are more common in female than male adolescents (Saluja et al., 2004; Patten, Gillin, Farkas, Gilpin, Berry, & Pierce, 1997; Kubik et al., 2003; Puskar, Tusaie-Mumford, Sereika, & Lamb, 1999; Schraedley, Gotlib, & Hayward, 1999; Brooks et al., 2002), and sexually experienced adolescents exhibit more depressive symptoms than their sexually abstinent peers (Tubman et al., 1996).

Several recent studies from western countries have profiled the characteristics of young people who had engaged in sexual intercourse (Sieverding, Adler, Witt, & Ellen,

2005; Schvaneveldt, Miller, Berry, & Lee, 2001; Rostosky, Regnerus, & Wright, 2003; Valle, Torgersen, Roysamb, Klepp, & Thelle, 2005; Velez-Pastrana, Gonzalez-Rodriguez, & Borges-Hernandez, 2005; Rosenthal, Von Ransom, Cotton, Biro, Mills, & Succop, 2001; Spencer, Zimet, Aalsma, & Orr, 2002; Sieving, Eisenberg, Pettingell, & Kay, 2006; Paul, Fitzjohn, Herbison, & Dickson, 2000; Santelli, Kaiser, Hirsch, Radosh, Simkin, & Middlestadt, 2004). Depending on the setting and the population studied, factors associated with initiation of sexual activity during adolescence vary. Individual and family factors have been hypothesized to influence adolescent sexual behavior (Small & Luster, 1994), but the extent to which this is true for adolescents in Jamaica as a whole and for those in rural areas in particular, has not been well studied.

In this dissertation we present a systematic review of literature related to factors associated with sexual debut and the relationship between adolescent depression and sexual activity. Information for this review came from a comprehensive search of titles related to adolescent sexual debut and depression using PUBMED and other bibliographic databases conducted between May and August 2006, using key words such as “individual factors AND adolescent sexual debut”, “family factors AND adolescent sexual experience”, “sexual activity AND depression” and “sexual behavior AND Jamaican adolescents”. The abstracts of relevant articles and full articles available on line were accessed. Full texts were then obtained from hand search of journals held in stock by the Lister Hill Library of the Health Sciences at the University of Alabama at Birmingham. Further searches were conducted based on links from the articles cited and was limited to publications from 1975 to 2006. Relevant websites such as that of the WHO, United Nations Children Fund (UNICEF), CDC, International Planned Parenthood

Federation (IPPF), United States Agency for International Development (USAID), were also searched. Information was also obtained from websites related to relevant agencies in Jamaica, like the Ministry of Health, Ministry of Education, Youth and Culture, and the Statistical Institute of Jamaica.

### Determinants of Adolescent Sexual Activity

A growing number of studies have reported on factors associated with the initiation of sexual activity during adolescence. Among the most important of these are individual and family factors, with extra-familial and broad socio-cultural factors determining the nature and contribution made by the individual and family factors, conforming to the social ecological model of behavior explicated by Bronfenbrenner (1979, 1989). Adolescent individual factors include biologic characteristics such as gender (Valle et al., 2005; Santelli et al., 2004), pubertal status (Meschke, & Silbereisen, 1997), and other developmental and psychosocial characteristics such as future aspirations (Valle et al., 2005), religiosity (Rostosky et al., 2003), academic self perception (Schvaneveldt et al., 2001), self efficacy (Santelli et al., 2004), self esteem (Robinson, Telljohann, & Price, 1999; Spencer et al., 2002; Paul et al., 2000), adolescent leisure activities (Meschke, & Silbereisen, 1997), drug and substance use (Mott, Fondell, Hu, & Kowaleski-Jones, 1996; Robinson et al., 1999; Santelli et al., 2004; Paul et al., 2000), and symptoms of depression (Kaltiala-Heino et al., 2003; Rector et al., 2003; Tubman et al., 1996).

Family influences on early onset of sexual activity include broad demographic categories such as race (Upchurch, Levy-Storms, Sucoff, & Aneshensel, 1998), parental

socio-economic status (Miller, 2002), education (Brewster, 1994), as well as aspects of family function, such as family structure defined by whether adolescents lived in same household with their biological parents or not (Young, Jensen, Olsen, & Cundick, 1991), family size (Widmer, 1997), and parental monitoring and supervision of adolescent activities (Sieverding et al., 2005). Factors at the extra-familial level include neighborhood quality (Browning, Leventhal, & Brooks-Gunn, 2004), peer group behaviors (Kinsman, Romer, Furstenberg, & Schwarz, 1998; Sieving et al., 2006), the school (McNeely & Falci, 2004), and religious institutions (Thornton & Camburn, 1989). Broad societal factors include cultural (Brewster, Billy, & Grady, 1993) and socio-economic (Blum, Beuhring, Shew, Bearinger, Sieving, & Resnick, 2000) factors, and the influence of the media (Collins, Elliot, Berry, Kanouse, Kunkel, Hunter, & Miu, 2004). The relationship between some of these variables and early heterosexual activity remains ambiguous, with studies reporting conflicting results (Udry & Billy, 1987; Rostosky et al., 2003; Robinson & Frank, 1994).

### *Individual Factors*

Individual determinants of sexual initiation tend to draw on both biological and psychosocial components. Biological explanations suggest that the timing of puberty has a significant influence on initiation of sexual intercourse (Edgardh, 2000; Meschke & Silbereisen, 1997). Udry and Billy (1987), however, stated that this could be true for boys, but there appears to be a more complex relationship for girls, with social control playing a more important role than pubertal timing. In a longitudinal study by Spencer et al (2002) pubertal status was unrelated to initiation of coitus.

Adolescents with high educational goals and achievement delay initiation of sexual intercourse (Schvaneveldt et al., 2001; Valle et al., 2005; Santelli et al., 2004; Paul et al., 2000). Schvaneveldt et al (2001) suggested that this might be because of the perceived potential costs of sexual intercourse; which might jeopardize adolescents' plans for the future. Early coital debut has been attributed to low expectations for academic achievement and poor academic performance in school (Costa, Jessor, Donovan, & Fortenberry, 1995).

Engaging in early sexual intercourse has been associated with problem behavior (Capaldi, Crosby, & Stoolmiller, 1996). Consistent with this view, a relationship has been established between early sexual activity and alcohol consumption, smoking behavior, delinquency, and use of illicit drugs (Capaldi et al., 1996; Mott et al., 1996; Santelli et al., 2004; Paul et al., 2000). Adolescent choice of leisure context has been viewed as a significant means of promoting friendship development. Meschke and Silbereisen (1997) reported that both risky and social/romantic leisure context are significant predictors of early sexual debut.

Some authors have suggested that religious involvement measured by church attendance directly promotes the delay of sexual intercourse (Paul et al., 2000; Rostosky et al., 2003; Mott et al., 1996). When examined by gender, race, and social class, however, findings indicate that the association is less straight forward (Rostosky et al., 2003). White adolescent girls, who score high on religiosity, have been reported to delay coital debut relative to their non-religious peers (Rostosky et al., 2003). The association for boys in general and for African American boys and girls, are however inconsistent (Rostosky et al., 2003). For instance, in a sample of low socio-economic status

adolescents from the National longitudinal survey of Youth, white and African American adolescents of both genders who participated in religious activities and had friends who attended church were more likely to delay coital debut (Mott et al., 1996). In another study, Bearman and Bruckner (2001) reported that religiosity delayed coital debut for White, Asian, and Hispanic middle and late adolescents, but had no effect on Black adolescents.

Self-esteem defined as feelings of self-worth and self pride stemming from an individual's positive or negative beliefs about being valuable and capable has been associated with initiation of sexual intercourse. Studies however, have produced conflicting results (Robinson et al., 1999; Spencer et al., 2002; Orr, Wilbrandt, Brack, Rauch, & Ingersoll, 1989; Robinson & Frank, 1994). A cross-sectional study of self-esteem using adolescents age 12 to 16 found that self esteem scores for non-virginal girls were significantly lower than those of virginal girls, with no relationship between self esteem scores and coital status for boys (Orr et al., 1989). In another cross-sectional study by Robinson and Frank (1994), no relationship was found between gender, self esteem, and coital status. A longitudinal study of self esteem and transition to non-virginity found no significant correlation between pre-existing self esteem and initiation of coitus for girls (Jessor & Jessor, 1975). However, higher levels of preexisting self esteem were predictive of transition to coitus for boys (Jessor & Jessor, 1975). Spencer et al., (2002) in a longitudinal study, reported that girls with higher self esteem were more likely to remain virgins, than girls with lower self esteem.

Earlier research on adolescent sexual activity in the United States was focused mainly on females given the long-existing interest in the prevention of teenage pregnancy

(Santelli et al., 2004). However studies that have included both males and females have shown conflicting results in gender differences in the age at first sexual experience. Some studies indicated that boys initiate sex earlier than girls (Valle et al., 2005; Santelli et al., 2004); others do not (Rosenthal, Smith, & de Visser, 1999; Paul et al., 2000).

Explanations for the observed younger ages at first sex for males have centered on biological and maturational differences, variations in social controls, such as parental supervision, and differences in the opportunity cost of becoming sexually active (Rosenthal et al., 1999).

### *Family Factors*

Family influences on early onset of sexual activity include broad demographic categories such as race, class, education, family socio-economic status, family structure (living with biological parents or not), and family context variables determined by parent-adolescent relationship such as parental monitoring and supervision of adolescent activities and parent-child communication. Some authors have reported that black adolescents initiate sex early compared to their white counterparts (Upchurch et al., 1998; Santelli et al., 2004); others did not find any difference (Felton & Bartoces, 2002). Socio-economic conditions (household income and mother's education) have been shown to account for ethnic differences in rates of first intercourse (Upchurch et al., 1998; Miller, Norton, Curtis, Hill, Schvaneveldt, & Young, 1997). Upchurch and co-researchers (1998) after controlling for socio-economic conditions reported similar median ages at first sexual intercourse for black and white girls.

Conflicting reports of the association between socio-economic status of parents and early coital debut in their adolescent children has been reported in some studies. Findings suggest a positive association between parental education and occupational status and age of coital debut (Miller et al., 1997), for boys in some studies (Ku, Sonenstein, & Pleck, 1993), and only for girls in other studies (Bearman & Bruckner, 2001). Brewster (1994) reported that adolescent females whose mothers attended college were more likely to delay coital debut. Yet in another sample of 926 high school students, parental education was not associated with the virginity status of boys or girls (Feldman, Holowaty, Harvey, Rannie, Shortt, & Jamal, 1997).

Growing up in single-parent-, step-, or cohabiting families has been reported to have negative effects on adolescents' sexual behavior (Velez-Pastrana et al, 2005, Santelli, Lowry, Brener, & Robin, 2000). Some authors did not replicate these findings in their studies (Hovell, Sipan, Blumberg, Atkins, Hofstetter, & Kreitner, 1994). Davis and Friel (2001) reported that with the exception of girls in single parent families, family structure does not significantly influence adolescents' sexual initiation. They postulated that the family context, more specifically the mother-child relationship, their level of interaction, and the mother's attitudes towards and discussion of sex is associated with adolescents' sexual debut (Davis & Friel, 2001). The effect of family structure also appears to depend on age. Forste and Heaton (1988), in their study concluded that adolescents who lived with both parents at age 14 were less likely to have initiated first intercourse by age 15; however, after age 16, family structure had less effect. Earlier studies have produced inconsistent results regarding the relationship between parental monitoring and sexual experience. While some studies reported parental monitoring as

being protective (Sieverding et al., 2005), others implicated overly strict parenting and intrusive psychological control as being associated with early sexual debut (Upchurch et al., 1998).

### *Other Factors*

Other intervening factors at the extra-familial and broad societal level have been reportedly associated with early sexual intercourse. Findings across studies of young teenagers from diverse ethnic backgrounds indicated that young sexually experienced adolescents are more likely than their sexually inexperienced counterparts to report that their friends are also sexually experienced (Kinsman et al., 1998; Rosenthal et al., 2001). Small and Luster (1994), however reported that peer conformity was not related to sexual activity. Other factors reported to be associated with sexual activity include lack of positive experiences in school such as perceived lack of teacher support, safety, and social belonging (McNeely & Falci, 2004; Paul et al., 2000), living in a community perceived as low quality as characterized by neighborhood socio-economic status (Browning et al., 2004), and negative influences from the media such as sexually explicit television shows (Collins et al., 2004).

### Adolescent Depression and Sexual Behavior

Studies have shown that engaging in sex places adolescents, especially girls at risk for depression (Rector et al., 2003; Kaltiala-Heino et al., 2003; Hallfors, et al., 2005; Tubman et al., 1996). Adolescent girls engaging in sexual activity has been reported to experience depressive symptoms more than boys with similar behavior (Waller, Hallfors,

Halpern, Iritani, Ford, & Guo, 2006). Earlier, Tubman et al (1996) reported that sexually experienced adolescents displayed more depressive symptoms than their sexually abstinent peers. In their analysis of the National Longitudinal Survey of Adolescent Health, Rector et al (2003) reported that sexually active girls were more than three times more likely to be depressed than girls who were not sexually active. In the same study, boys who were sexually active were twice as likely to be depressed compared to those who were not sexually active (Rector et al., 2003).

Depressed adolescents may be engaging in sexual activity as a form of “self-medication” (Kaltiala-Heino et al., 2003). This assertion however, was not supported by the longitudinal study conducted by Hallfors et al (2005). They reported the stress associated with sexual activity plays a causal role in the development of adolescent depressive disorders rather than sexual activity being a reaction to depression. Furthermore depressed adolescents are more likely than any other youth to engage in unsafe sexual practices and other risky behaviors (Waller et al., 2006; Shrier et al., 2002; Brooks et al., 2002; Hallfors, et al., 2005). Symptoms of depression may occur more often during adolescence than at any other life stage (Saluja et al., 2004; Patten, et al., 1997; Kubik, et al., 2003). In addition, lack of perceived parental social support has been found to be highly related to depressive symptoms (Patten et al., 1997).

#### Adolescent Sexual Activity in Jamaica

There is dearth of literature on factors associated with sexual debut during adolescence in Jamaica. Adolescent sexual activity and pregnancy however, has been associated with poverty, low educational levels, the absence of male role models in the

home, and a social milieu of conservative sexual ideals coexisting with tacit approval of early child bearing (Barnet, Eggleston, Jackson, & Hardee, 1996; McNeil, Olfason, Powell, & Jackson, 1983). Most information has been derived largely from qualitative research and anecdotal evidence (Jackson, Leitch, Lee, Eggleston & Hardee, 1998; Kempadoo & Dunn, 2001; Smith, Roofe, Ehiri, Campbell-Forrester, Jolly, & Jolly, 2003). Available empirical studies that examined the correlates of sexual debut were either retrospective or restricted to early adolescence. In a study that examined the correlates of early sexual intercourse among Jamaican women aged 15-50 years, family structure in childhood, early age at menarche, lower socio-economic status, and involvement in casual relationship were reported to be associated with initiation of sexual activity before the age of 16 years (Wyatt, Durvasula, Guthrie, LeFranc, & Forge, 1999). A major limitation of this study is the reliance on retrospective account of sexual initiation with possibility of recall bias. In another study, conducted among 7<sup>th</sup> grade adolescents attending new secondary and all-age schools, sexual experience was not associated with the type of residential giver, but with gender and alcohol use. The study however, was restricted to adolescents below the age of 15 (Jackson et al., 1998).

Jamaica, the third largest of the Caribbean Islands, has a population of approximately 2.6 million inhabitants (Statistical Institute of Jamaica, 2002). About one-third (29%) of the population consist of young people between the ages of 10 and 24 years (Statistical institute of Jamaica, 2002). Available data indicates that Jamaican adolescents initiate sexual activity early (Eggleston, Jackson, & Hardee, 1999; Adolescent Condom Survey, 2001), and engage in risky sexual behavior (McFarlane, Friedman, Goldberg & Morris, 1999; Adolescent Condom Survey, 2001). In the 2001

Adolescent Condom Survey, 63% of females and 83% of males 10-19 years old reported having had sexual intercourse. In another study, mean age at first sexual intercourse for boys and girls was reported to be 9.4 and 11.3 years respectively (Eggleston et al., 1999). In the Adolescent Condom Survey, only 42% of respondent 15-19 years old and 26% of 10-14 years old used contraceptives the first time they had sexual intercourse (Adolescent Condom Survey, 2001).

The pregnancy rate among Jamaican adolescents (79 live births per 1,000) although declining compared to 112 per thousand in 1997 still represents one of the highest in the Caribbean (USAID, 2005). Adolescent pregnancy in the country represents a social and public health problem (Jackson et al., 1998). Before they reach the age of 20, 40% of Jamaican women have been pregnant at least once (McFarlene et al., 1999), and over 80% of these adolescent births are mistimed or unwanted (McFarlene et al., 1999). Among ever-pregnant adolescent females in Jamaica, almost one-third became pregnant while still in school, and only 16% of these returned to school after the birth of their child (McFarlene et al., 1999; IPPF, 1999). Most adolescent pregnancies are often unintended, and consequently pregnant adolescents often seek illegal abortions from untrained and unqualified personnel, conducting abortions under unsafe conditions. The resulting infections and complications are an important cause of maternal morbidity and mortality in the country (IPPF, 1999).

In addition to their susceptibility to unintended pregnancy, early initiation of sexual intercourse and unprotected sex predisposes adolescents to STIs including HIV. In 2004, HIV was the second leading cause of death for both young men and women in Jamaica (age group 15-24 years old) (National HIV/STI Prevention and Control Program,