

The Correlation Between Paternal Investment and Daughters' Sexual Debut

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Abstract: In the context of today's society, there is a potential connection between investment of father and daughters' first time experiencing penetrative sex, so we propose an experiment, questioning how the paternal investment predicts the age of sexual debut in daughters. Two surveys are designed for mother to report paternal investment, dividing fathers into always present, partially absent, always absent, and for daughter to report their first time experiencing penetrative sex. Since sexual behaviors are the main approach of reproduction, which evolutionary psychology pays lots of attention on due to its connection to human evolution and natural selection, we decide to use evolutionary psychological perspectives to explain and discuss our results. As this experiment proposal will not yield data, positive correlated and negative correlated results are discussed separately, using different theory to explain the findings.

Keywords: evolutionary psychology, sexual behavior, paternal investment.

1. Introduction

Throughout history, sexual behavior is one of the most important human behaviors because it is vital to reproduction and thus the survival of the species, so human have an instinct to explore and experience such behaviors. Adolescent sexual behaviors, which means people having sex at an early age, is a well-discussed topic due to its complexity including risks, reasons, and consequences. According to research, generally speaking, adolescents are often engaging in sexual behaviors as well as having sexual partners[1]. One thing worth noticing is that sex differences also present on adolescent sexual behavior. Because males and females have different roles on solving qualitatively different adaptive problems in negotiating trade-offs between mating and parenting, it leads to expectation that different gender will have different strategies in response to the same environmental contexts. the resources that females can extract from the environment, their partner and their relatives can decide if they can successfully produce and rear offspring. It is speculated that familial and ecological stressor will predict pubertal maturation and earlier sexual behavior in girls more than in boys[2]. Therefore, our targets are narrowed down to adolescent girls.

Research shows that various factors like biology, psychology, behavior, family, peers, and social context influence adolescent sexual development. The Psychosocial Acceleration Theory suggests that childhood experiences affect psychological and somatic development, including reproductive strategy, and it predicts that adverse family environments may prompt earlier puberty and sexual activity to enhance reproductive success, while supportive environments might delay reproduction to focus on acquiring social skills and resources[2]. One of the ways to explain it is that adverse family environments will cause higher sociosexuality (SOI) which is the individual difference in the willingness to engage in sexual activity outside of a committed relationship[3]. The higher the SOI scores are, the individuals have unrestricted orientation which means that they prefer to have casual sex and are more comfortable engaging in sex without love, commitment or closeness and vice versa.

Parental investment theory emphasizes the absence of father will strongly influence the quality of family relationships, because it will cause negative family relationships, and this will further cause earlier pubertal timing which means younger age for sexual debut[2]. This significantly influences daughters' sexual debut which means that daughters live in father absent families have more possibility to have sexual relationships at an earlier age. Research often overlooks this factor and the impact of family structure on puberty. However, the presence, absence, and involvement of fathers distinctly shape daughters' sexual development, beyond broader social and ecological stressors. Life history theory posits that an organism's decision on when to reproduce or engage in reproductive behavior may be calibrated by early childhood experiences in such a way that benefits reproductive success[4]. More specifically, in environments where individuals perceive resources and opportunities to be plentiful, they tend to put off reproduction and focus on self-development for long-term success. In contrast, when individuals feel resources are scarce and hard to maintain, they feel uncertain that they will achieve reproductive success, in which case, focusing on self-betterment appears to not be the optimal strategy, while early reproductive or sexual behavior may act as a means of ensuring they at least produce some offspring.

The research of the parental investment indicated that father absence increases ecological stress, leading to poorer family relationships in childhood, earlier puberty, and earlier sexual activity in girls. Despite sexual development being a natural process, early puberty and sexual debut are often viewed negatively due to their association with unfavorable outcomes. Previous research shows that father absence directly predicts earlier sexual debut and increased sexual risk for girls, primarily through its effect on family relationships; however, there's limited discussion on the paternal investment theory, and research lacks exploration into the influence of family environment and paternal involvement quality[2].

This study will explore how paternal investment influences daughters' age of sexual debut. 200 US families were surveyed with varying degrees of paternal presence: always present, partially absent, and always absent. The aim is to determine whether greater paternal investment correlates with later sexual debut in daughters.

As a result, the hypothesis of this study is that as the level of paternal investment increases, the dependent variable age of daughter's sexual debut will also increase, and vice versa. In other words, the more the father invests in the family, the later the age of the sexual debut of the daughter, and vice versa.

2. Methods

2.1. Participants

Participants will consist of 200 US families that have a daughter over 25 years old. The families need to have a similar socioeconomic status and will only have one daughter. Professional adolescent

psychiatrists will assess the mental health of the daughters, and the physical health history will be checked that they don't have an outstanding mental or physical illness.

2.2. Procedure

The mothers of the families will each receive a questionnaire consisting of multiple-choice questions relevant to the involvement of the father in the family. Based on the results from the mother's questionnaire, the paternal involvement in each family will be categorized as either entirely present, partially absent, or entirely absent.

The daughters of the families will each receive a questionnaire consisting of free-response questions that ask about the age they had their first sexual encounter, their first sexual intercourse, and whether they were voluntary. Those who reported their sexual debut to be involuntary are ruled out from the data.

2.3. Data

The data will be presented by a line graph, and we will do a correlational analysis that models the correlation between the level of paternal investment and the daughter's age of sexual debut.

3. Discussion

3.1. Positive Correlation

If it is found that the more the father invests in the daughter's development, the older the age of sexual debut the daughter has, this result may be interpreted as follows.

3.1.1. Parental investment and sociosexuality

Lower levels of parental investments that come along with divorce are associated with higher sociosexuality (SOI) scores[5]. Although this present study does not investigate the factor of divorce, divorce could be an indicator for low paternal investment. Thus, a correlation between low paternal investment and high SOI may be inferred.

According to the definition of SOI, higher SOI scores indicate unrestricted sociosexual orientation, which may be a sign of higher willingness to engage in casual sexual activity, and a lack of need for deep emotional connections or commitment[3]. All of these factors may contribute to the earlier onset of sexual behavior.

3.1.2. Life history theory

Based on life history theory, an individual's perception of resource availability in the environment influences their reproductive strategies[4]. The absence or lack of investment of a father is one of the factors that contribute to childhood adversity and environmental stressors perceived by the daughter, which may subsequently make them perceive the current environment as lacking resources. According to the theory, this perception will lead to earlier sexual behavior and reproduction, providing an explanation for the correlation between father's absence and the precocious sexual debut of the daughter.

3.2. No Correlation

3.2.1. Maternal influence

Based on the life history theory, maternal investment may also influence the daughter's perception of the current environment and resource availability[4]. Thus, the maternal aspect of the child's development, which was not accounted for in the present study, may also hold significance in influencing the daughter's mating and reproductive strategies and may have been a confounding variable to the correlation.

3.2.2. Controlled socioeconomic status

There might be a certain correlation between paternal investment and the family's SES because paternal presence and involvement may positively contribute to SES, making SES a potential indicator of paternal investment. Based on this logic; by only recruiting families with similar SES, we may have also recruited those with similar levels of paternal investment, making identification of correlation difficult.

3.3. Negative Correlation

If a negative correlation is found between the independent variable and the dependent variable, indicating that the more the father invests in the daughter's development, the younger the age of sexual debut the daughter has, this result may be interpreted as follows.

3.3.1. Self-perceived intrasexual competitiveness

Higher levels of paternal investment may contribute to increased confidence and thus increased self-perceived mate value. And self-perceived attractiveness and mate value may be a predictor of the age of sexual debut. More specifically, higher self-perceived mate value predicts earlier sexual debut and more active mating [6].

3.3.2. Resource availability

Higher levels of paternal investment may result in the daughter perceiving the environment as more resource-abundant, higher in social status, and safer. These factors may incentivize the daughter to engage in earlier sexual activities to make use of and secure the current resources.

3.3.3. Heredity

A study conducted by Corpuz et al suggests fathers who had earlier sexual debuts invest more in their family and child-rearing compared to fathers who had a later sexual debut[7]. And studies have found there is a genetic component to age of sexual debut and adolescent sexual behavior[8]. Building on this, it may be inferred that timing of sexual debut of daughters may be similar to that of their fathers. Given this, although fathers who debuted earlier may invest more, the child tends to take on their early debut blind to their investments.

Based on this explanation, there is no direct correlation between the investment and sexual-debut timing, but high paternal investment and early sexual debut of daughters may be observed simultaneously due to their correlation with a genetic component.

3.4. Consequences of adolescent sexual behavior

3.4.1. Sexually Transmitted Diseases

Adolescents may be particularly vulnerable towards sexually transmitted diseases (STD) when engaging in sexual activities due to lack of proper sexual education or stigmatization around the subject matter. Condoms are the most effective contraceptive to prevent STDs. However, while contraceptive use in general has shown a growing trend in the past few decades, condom use has shown an opposite trend[9]. This may indicate potential risk of higher STD infection rates, which could consequently result in harming overall fitness and reproductive success throughout lifetime.

3.4.2. Offspring viability

One outcome of adolescent sexual behavior is teen pregnancy. Studies have shown a correlation between early motherhood and higher rates of infant mortality across different racial groups and levels of prenatal care, this could be large the result of young mothers being at higher risks of preterm delivery and light birth weight[10,11].

3.4.3. Resource shortage

Teen motherhood has been shown to be positively correlated with lower educational attainments compared to adult motherhood[12,13], harming job attainment, which could cause a shortage of resources provided for the offspring.

3.4.4. Psychological influences on offspring

Early parenthood may be associated with inadequate or poor parenting, leading to adverse childhood experiences and low family quality. These negative experiences with family could make the child resistant towards future family building and reproduction.

3.4.5. Offspring ability

Some data has indicated that children of teenage mothers have lower verbal comprehension abilities compared to those of older adult mothers[14]. This disadvantage in abilities could negatively influence ability to attain resources later in life and overall success, thus potentially decreasing the chance of the offspring then wanting or having the capability of child-rearing.

3.4.6. Maternal health impacts

Teenage pregnancy is associated with higher rates of diseases such as eclampsia and puerperal endometritis, as well as SMO (severe maternal outcomes) including maternal near miss and intra-hospital maternal mortality[15]. Maternal mortality or diseases would result in a decreased ability to provide offspring with abundant resources, thus lowering their viability.

3.5. Limitations

In the current research, one of the limitations is that we only focus on Western society and ignore the impact of paternal investment on adolescents in other societies and cultural contexts. In different societies, adolescents are affected by paternal investment in different ways. For example, marriage relationships are different. The other limitation of this study is that the level of paternal investment across families in the sample is measured based on data collected in a questionnaire to the mothers of the families. This is problematic for two reasons. First, the nature of questionnaires requires self-

reported data, which brings potential uncertainties and biases. To elaborate, the moms may deliberately provide untrue positive information to make the father, or their family appear favorable; they may also provide untrue negative information due to personal conflicts with the father. Second, the information provided by the moms rely on their memory of family interactions and events, introducing significant uncertainties since memories are prone to distortions. Additionally, mothers may not have holistic understanding of the father's interactions with the daughter, casting doubt on the results.

3.6. Future Study

In the current research, there is a limitation that we focus on Western society and ignore the impact of paternal investment on adolescents in other societies and cultural contexts. In different societies, adolescents are affected by paternal investment in different ways. For example, marriage relationships are different. There are polygamy and monogamy in different societies. When a society practice extensive polygyny, the father will have different wives and more children, the father will divide his resources among his children, less input from the father and each child will have less resources, in this case, the parental investment will be less in polygamy than in monogamy, so girls in polygamy are more likely to have sex debut and get pregnant earlier. In marriage, emotional infidelity will also affect parental investment, as fathers will shift resources away from others, resulting in less father involvement in the family, this causes daughters to have more possibility of their sex debut earlier[16]. The reason parental investment is important is in the patriarchal society, men control most of the wealth and social networks, so that parental involvement has a positive effect on education attainment, adult income, age of initiation and other status outcomes, so the father's absence has the opposite effect[17]. In the future research, we expect that we will focus on how parental investment influences daughters' sexual debut base on different cultures.

4. Conclusion

In conclusion, it has three possible results: (1) the higher level of paternal investment, the later age of the daughter's sexual debut. (2) the higher the level of paternal investment, the earlier the age of the daughter's sexual debut. (3) there is no correlation between the paternal investment and the daughter's sexual debut age. One strength of this work is that the research is based on lots of theories, such as the life history theory, parental investment theory, and sociosexuality, as well as self-perceived intrasexual competitiveness which provides the research solid and reliable background. The experiment is designed on account of the control over various variables, including socioeconomic status, and psychological and physical conditions, which will help the result be more accurate. By learning the correlation between paternal investment and a daughter's sexual debut age, people can better understand the influence of parenting styles and increase awareness of sexual education, take measures to help reduce adolescents 'pregnancy rate and sexual diseases.

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