Adolescent Pregnancy in Nigeria: A MIMIC Modelling of Risk and Protective Factors

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ABSTRACT

This study investigates Adolescent Pregnancy in Nigeria through a Multitrait-Multimethod Design, employing MIMIC modeling to elucidate both risk and protective factors. A sample of 300 female adolescents from secondary schools in Ibadan North Local Government Area, Oyo State, Nigeria, employing a multistage random sampling technique. Data collection involved validated scales measuring early maturation, parent-adolescent conflict, family cohesion, and adolescent pregnancy tendencies. Analysis utilized confirmatory factor analysis, MIMIC structural equation modeling, and Pearson's Product Moment Correlation. Results revealed significant positive relationships between early maturation, parent-adolescent conflict, and adolescent pregnancy, while family cohesion showed a negative association. Notably, parent-adolescent conflict emerged as the most robust predictor of adolescent pregnancy. Additionally, dimensions of intendedness, wantedness, and planning significantly predicted adolescent pregnancy tendencies. These findings underscore the importance of family dynamics, emotional readiness, and communication in shaping adolescent reproductive behavior in Nigeria. Interventions targeting parent-child communication and conflict resolution are crucial in preventing unintended pregnancies, alongside comprehensive sex education programs addressing emotional preparedness and contraceptive knowledge.

Keywords: Adolescent Pregnancy, Early maturation, Parent-adolescent conflict, Family cohesion, MIMIC Model, Structural equation model.

INTRODUCTION

Adolescence is usually the period of transition from childhood or infancy to the period of adulthood during which significant development processes begin in the individual (WHO, 2017). It is usually, marked between the ages of 10 and 19 years and it marks a very critical phase of the child which if not properly managed or such a female individually guided properly may lead to certain unwanted vices such as pregnancy, social vices, delinquent behaviours, which may lead to permanent or temporary damages to the life of the individual later on in life (WHO 2017; Stella, 2019; Curtis, 2015). An estimated 252 million women aged 15–19 live in developing regions as of 2016. These adolescent women account for about one-sixth of all women of reproductive age (15–49) in developing regions overall; they make up one-fifth of reproductive-age women in Africa, because Africa's population is younger than that of other regions. Sixty-five percent of these adolescent women live in Asia (including 15% in China and 23% in India), 24% live in Africa and 11% in Latin America and the Caribbean. Nearly two-thirds of adolescents in Africa and Asia live in rural areas, but only one-fourth do in Latin America and the Caribbean (Darroch, Woog, Bankola and Ashford, 2016). Whether adolescents live in rural or urban areas is a strong indicator of their levels of

education and household wealth: Rural adolescents are poorer and, nearly everywhere, they are less educated than urban adolescents (Darroch, *et al*., 2016).

Adolescent pregnancy may be defined as conception realised and eventual birth in the life of a young person usually falling between 15 to 18 years (Bright, Hagan Jr., Seidu, Budu, Hormenu, Mintah, Sambah and Schack, 2019; WHO, 2019). This is a phenomenon that is usually characterised by initial shock, fear and seclusion, due to the attendant stigma to such an occurrence as well as also resulting violence and rejection of either or both the baby and/or the mother (WHO, 2019) by parents, sexual partners, friends and peers alike. In every developing country with available data, some adolescent women are sexually active before marriage (Akpor and Gloria, 2019). In both Africa and Latin America and the Caribbean, about two-thirds of 19-year-olds report having had sexual intercourse, while 43% and 37%, respectively, are married. In Asia, very low proportions of unmarried adolescent women report having ever had sex, and roughly three-quarters of those who are sexually experienced are married (Wall-Wieler, Roos& Nickel, 2016). It has been reported globally, that 12 million teenage girls give birth yearly with close to a million of such cases occurring among those below the age of 15 especially prevalent in countries in developing regions (Darroch, *et al*., 2016).

This form of pre-term pregnancy can be attributed to a host of problems. In low and middle-income countries, inadequate or low educational levels coupled with a strait put on possible prospects of furthering one's education has led to adolescent pregnancy as means of gaining financial independence and sustainability for the family. Despite worldwide efforts to end child marriage, 28% of young women in developing regions marry before age 18 (United Nations Children's Fund, 2016), the internationally recognized age of adulthood (Tideman, Kristén & Kristina, 2022), and 7% of girls marry before age 15 (United Nations Children's Fund, 2016). Parents may arrange marriages for their young daughters for financial reasons or to try to protect the girls' safety or honor, but child marriage violates girls' human rights and can isolate them, curtail their schooling and prevent them from escaping poverty (Nnenne & Omolara, 2022; Alabi and Oni, 2017).

Particularly, in the Northern Nigeria and other developing countries, educational advancement is usually not seen as desirable, the female children are forced off to marry at tender ages against their will and leading to pre-term pregnancy (Girma and Paton, 2015; WHO, 2017). A retrospective study was conducted in a population of adolescents (age <18 years) delivered at the University College Hospital, Ibadan, Nigeria from January 2007 to November 2008. The birth register for the study-period was reviewed and socio-demographic data and labour records were extracted for both cases and controls. The proportion of adolescent pregnancy between January 2007 and November 2008 is between 1.5% and 2.2 %. Considering all the complications considered in the study 44.44% of adolescent pregnancies had one form of complications or the other (Adeyinka, et al., 2010). Moreover, the process of pregnancy is usually characterised by complication during the gestation period and even during the delivery process leading to close to 4 million teenage maternal deaths per year and still births also have been reported to have a high frequency rate of about 50% (WHO, 2019). The babies also are usually underweight, preterm or experience severe congenital deformations. Subsequent complications may be the reproductive dysfunction known as vesico-vaginal fistula (VVF) which eventually leads to excessive haemorrhage at delivery and finally death of the mother (Joesephine and Premraj, 2016; WHO, 2019). Being pregnant during adolescence can greatly alter young women's life prospects and those of their children. Complications of pregnancy and childbirth are the second leading cause of death among 15–19-year-old women, (WHO, 2019) and babies born to adolescent mothers face greater health risks than those born to older women (Akpor and Gloria, 2019; Madume and Dibia, 2021). Moreover, adolescent childbearing is associated with lower educational attainment, and it can perpetuate a cycle of poverty from one generation to the next (Nguyen, Shiu and Farber, 2016; Wall-Wieler, et al 2016). Thus, helping young women avoid unintended pregnancies can have far-reaching benefits for them, their children and societies as a whole.

Despite the statistics, all over the globe, adolescent pregnancy has become a societal challenge that has, over the years, developed debate among researchers and has been a big plague to both developed and developing societies. Its impact on societal advancement, mortality rate, educational enrolment/attainment as well as child and psychological development has reached alarming levels globally (Awunor, et al 2022; Curtis, 2015; Alabi and Oni, 2017). It is necessary to take into consideration certain factors that exert significant influence on adolescent pregnancy among secondary school girls. Some of such factors are; early maturation, parent – adolescent conflict and family cohesion.

Maturation serves as a significant risk factor, contributing to the physiological changes necessary for a girl to reach a stage where pregnancy becomes feasible, typically occurring during adolescence or the teenage years (Akella& Jordan, 2015). Puberty, a key component of this maturation process, encompasses both primary and secondary phases. The primary phase involves internal developments stimulated by hormones secreted by the pituitary gland, whereas the secondary phase involves visible physical changes such as breast enlargement and hip broadening (Alabi & Oni, 2017). Cultural differences play a role in the timing of puberty, with research indicating variations among ethnic groups. For instance, African American girls typically experience puberty earlier than European-American girls, while Asian-American girls tend to mature later (Akella& Jordan, 2015). Despite these differences, the overall pattern of growth remains consistent across human populations (Merrick, 2015). Puberty marks the onset of adolescence, a period characterized by significant physical, cognitive, and emotional changes. Determining the boundaries of adolescence, however, poses a challenge, with scholars emphasizing the biological transition from puberty to sexual reproductive capability (Steinberg in Merrick, 2015). This transitional phase can be emotionally challenging for adolescents, leading to self-consciousness, anxiety, and comparison with peers (Curtis, 2015).

Early puberty, particularly among girls, is associated with various psychosocial problems, including depression, substance use, and risky sexual behavior (Nnenne & Omolara, 2022). The decreasing age of puberty onset globally has raised concerns, with girls experiencing physical changes at younger ages than in previous generations (Nnodim & Albert, 2016). Early-maturing girls often struggle to reconcile their physical development with their emotional and cognitive maturity, leading to negative behaviors and peer comparisons (Joesephine & Premraj, 2016). Parenting during adolescence becomes increasingly complex as parents navigate their child's evolving needs and behaviors. Effective communication and understanding are crucial to managing conflicts that may arise between parents and adolescents (Curtis, 2015). Failure to address these conflicts can result in adolescents seeking validation and acceptance from peers, potentially leading to risky behaviors such as early sexual debut (Joesephine & Premraj, 2016). Preparing for and navigating adolescence requires intentional parenting, as mistakes during this critical period can have lasting effects on the child's development and well-being. Parent-adolescent conflicts must be addressed proactively to foster healthy relationships and prevent adolescents from engaging in behaviors that jeopardize their safety and future prospects (Nnenne & Omolara, 2022).

Parent-adolescent conflict is a pivotal aspect in this study, representing a significant risk factor that warrants examination. It can be conceptualized as a state of opposition between parents and adolescents, stemming from various issues ranging from trivial matters like clothing choices to more serious concerns regarding the child's safety and well-being (Smith & Mills, 2018). Conflict between parents and adolescents is inevitable, as it is an essential aspect of the socialization process and the adolescent's exploration of autonomy (Maryam, Çerkez, & Çavuşoğlu, 2017).

Research on parenting, such as studies by Maryam, Çerkez, and Çavuşoğlu (2017) and Goagoses et al. (2022), has highlighted the influence of parental warmth and control on children's outcomes and behaviors. Parent-adolescent conflict is a common occurrence during adolescence, a period marked by significant developmental challenges for both parents and adolescents (Bi1 et al., 2018). Understanding the importance

of maintaining a high-quality parent-adolescent relationship is crucial, as it directly impacts adolescent pregnancy outcomes among secondary school girls.

Unresolved parent-adolescent conflict can lead to adolescents seeking solace and acceptance from their peers, potentially influencing them to engage in risky behaviors such as early sexual activity (Alabi & Oni, 2017). Pressure from peers to conform to sexual norms and the desire to appear mature and accepted can contribute to unplanned teen pregnancy and sexually transmitted infections (Smith & Mills, 2018). Adolescents' desire for independence and peer acceptance may lead them to challenge parental authority and withdraw from parental guidance, seeking validation and companionship from peers and technology (Curtis, 2015). Persistent and intense parent-adolescent conflict can have detrimental consequences, including school dropout, delinquency, substance abuse, early marriage, and adolescent pregnancy (Sarwar, 2016). Warm and supportive parental relationships have been shown to encourage adolescents to seek guidance from their parents rather than peers, mitigating the risk of engaging in risky behaviors (Sarwar, 2016).

Family cohesion is widely recognized as a protective factor in adolescent development and well-being. The family serves as the primary agent of learning and socialization, shaping individuals' beliefs and values before any modification occurs through external exposure and experiences (Smith & Johnson, 2018). It is often viewed as a sanctuary, providing refuge from the challenges of daily life and offering unconditional acceptance and support (García et al., 2019). Indeed, the family is a nurturing environment where personal growth and expression thrive, significantly impacting adolescent growth and development in enduring ways (Brown & Williams, 2017).

Recent studies have shed light on the mediating mechanisms through which parent-child connectedness, a key aspect of family cohesion, influences adolescent sexual behavior (Goagoses et al., 2022). Close parent-child relationships have been linked to positive attitudes toward intercourse, lower rates of depression, better impulse control, engagement in academic and pro-social activities, and reduced substance use and association with sexually active peers – all factors contributing to adolescent sexual behavior and pregnancy outcomes. While much research has focused on parent-adolescent connectedness, the broader concept of family cohesion remains underexplored in the context of adolescent pregnancy (Whitbeck, as cited in Sarwar, 2016). This study seeks to fill this gap by examining the impact of family cohesion, beyond parent-adolescent relationships, on adolescent pregnancy among secondary school girls. Factors such as family environment, parental socioeconomic status, educational level, warmth, and support among family members are critical in shaping adolescent pregnancy risk (Coste, 2015). Research suggests that adolescents raised by single parents or in non-traditional family structures may face heightened risks of adolescent pregnancy (Sarwar, 2016). Those with sexually active older siblings are also at increased risk. The influence of family structure on adolescent sexual behavior underscores the importance of family cohesion as a protective factor.

Purpose of the Study

The increase rate of adolescent pregnancy among secondary school girls and its effect on the wellbeing of the girl child has necessitated this research. The general purpose of this research is to ascertain the influence of early maturation, parent – adolescent conflict and family cohesion on adolescent pregnancy among secondary school girls in Ibadan North Local Government Area of Oyo State. The specific objectives include:

- to examine significant relationship between early maturation, parent – adolescent conflict and family cohesion on adolescent pregnancy among secondary school girls in Oyo State, Nigeria.
- to investigate the relative effect of early maturation, parent–adolescent conflict and family cohesion on adolescent pregnancy among secondary school girls in Oyo State, Nigeria.
- to find out the joint effect of early maturation, parent–adolescent conflict and family cohesion on

adolescent pregnancy among secondary school girls in Oyo State, Nigeria.

Research Questions

- What is the significant relationship between early maturation, parent adolescent conflict, family cohesion and adolescent pregnancy among secondary school adolescent girls in Oyo State, Nigeria?
- What is the joint contribution between early maturation, parent-adolescent conflict and family cohesion to the prediction of adolescent pregnancy among secondary school girls in Oyo State, Nigeria?
- What is the relative contribution of early maturation, parent-adolescent conflict and family cohesion to the prediction of adolescent pregnancy among secondary school girls in Oyo State, Nigeria?

MATERIALS AND METHOD

Design, Participant

The study employed a correlational research design to assess relationships among variables without manipulation. Three hundred female adolescents from secondary schools in Ibadan North Local Government Area, Oyo State, were sampled using a multistage random sampling technique. Four schools were chosen, two representing Government/Public schools and two representing Private schools. Seventy-five participants were selected from each school, resulting in a total of 300 participants. Three hundred questionnaires were distributed, with 298 retrieved for analysis.

Instrumentation

Adolescent Idealisation Pregnancy Scale

The Adolescent Idealisation Pregnancy Scale (AIPS) by Laurie Pendeton (2014) was adapted for this study to explore adolescent perceptions of pregnancy. The scale, comprising 16 items, was selected from a variety of items and rated on a 5-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1). Sample items included statements like "I feel that having a baby now would fit into my plans for the future" and "It wouldn't be all that bad if I got pregnant at this time of my life." The scale's reliability was established through a pilot study, yielding a Cronbach's alpha of $\alpha = .89$, indicating good reliability.

Early Maturation Scale

The Early Maturation Scale (EMS) was adapted from the Puberty Development Scale (PDS) developed by Pompéia et al. (2019) to measure early maturation in adolescents. Comprising five questions about gonadal, adrenal, and growth factors affecting puberty, the scale assesses multidimensional neuroendocrine changes. The scale's reliability was confirmed through a pilot study, yielding a Cronbach's alpha of $\alpha = .96$, indicating high reliability.

Parent-Adolescent Conflict Scale

The Parent-Adolescent Conflict Scale (PACS) was adapted from a conflict behavior questionnaire constructed by Robin and Foster (1989) and revalidated by Bi1 et al. (2018). Originally a twenty-item scale, it was modified for adolescents to complete regarding their parents. The scale's reliability was established through a pilot study, yielding a Cronbach's alpha of $\alpha = .98$, indicating excellent reliability.

Family Adaptability and Cohesion Scale II (FACES-II)

The Family Adaptability and Cohesion Scale II (FACES-II) by Olson and Gorall (2003) was adapted for

this study to measure adaptability and cohesion within families. This 25-item self-report instrument assesses family functioning across dimensions such as enmeshment, disengagement, chaos, and rigidity. Reliability for adaptability is .78, for cohesion is .87, and for the total scale is .90. Internal consistency ranges from .86 to .91 for cohesion and .78 to .80 for adaptability, with high test-retest correlations. In this study, the overall reliability was 0.895, with cohesion at 0.716 and adaptability at 0.855. Sample items include statements like "We are supportive of each other during difficult times." The scale demonstrated high reliability through pilot testing, with a Cronbach's alpha of $\alpha = .97$.

Method of Data Analysis

The frequency counts and simple percentage was used to analyse the data obtained from the field.The demographic characteristics were analyzed using descriptive statistics. Also, the confirmatory factor Analysis was used to estimate the factor the factor loading and fitness of the measurement model, the MIMIC structural equation model was used to test the fitness of the model and Pearson's Product Moment Correlation (PPMC) was used to test significance of variables at 0.05 level of significance.

Model Specification

This study proposes a Multiple Indicators and Multiple Causes (MIMIC) model to investigate the risk and protective factors associated with adolescent pregnancy in Nigeria. The model posits that adolescent pregnancy is a latent construct influenced by three exogenous variables: early maturation (X_1), parent-adolescent relationships (X_2), and family cohesion (X_3). It is measured by three observable indicators: intendedness, wantedness, and planning.

Structural Model

The latent endogenous variable, adolescent pregnancy (Y), is regressed on the exogenous variables. The structural equation is as follows:

$$Y = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \zeta$$

where β_1, β_2, and β_3 are the path coefficients representing the effects of the exogenous variables on adolescent pregnancy, and ζ is the error term for the endogenous latent variable.

Measurement Model

The measurement model links the latent variable to its indicators:

$$Y_1 = \lambda_1 Y + \varepsilon_1 \text{ (Intendedness)} \quad Y_2 = \lambda_2 Y + \varepsilon_2 \text{ (Wantedness)} \quad Y_3 = \lambda_3 Y + \varepsilon_3 \text{ (Planning)}$$

where λ_1, λ_2, and λ_3 are the factor loadings, which represent the strength of the association between the latent variable (adolescent pregnancy) and each indicator. ε_1, ε_2, and ε_3 are the error terms for the indicators, representing measurement error. This model specification outlines the theoretical framework for analyzing the risk and protective factors associated with adolescent pregnancy in Nigeria using a MIMIC approach.

RESULT AND DISCUSSION

Research Question 1: What is the relationship existing between early maturation, parent adolescent conflict, family cohesion and adolescent pregnancy?

Table 1: Multiple correlation summary showing relationship between early maturation, parent adolescent conflict, family cohesion and adolescent pregnancy

	Variable	1	2	3	4
1	Adolescents pregnancy	.000			
2	Early maturation	0.936***	.000		
3	Parent-adolescent conflict	0.986***	0.952***	.000	
4	Family cohesion	-0.941***	-0.996***	-0.956***	**.000**

* p < .05, ** p < .01, *** p < .001

Table 1 reveals that a positive relationship exists between adolescents' pregnancy and early maturation (r = 0.936, p< 0.001) and parent-adolescent conflict (r = 0.986, p< 0.001). While a negative relationship exists between adolescents' pregnancy and family cohesion (r = 0.941, p<0.001). This indicates that early maturation and parent-adolescent conflict increases the tendency of teenage pregnancy, while family cohesion reduces the tendency.

Discussion

The findings of this study provide further evidence supporting the existing literature on the relationship between various factors and adolescent pregnancy. As anticipated, a positive correlation was observed between early maturation and adolescent pregnancy (r = 0.936, p < .001). This finding aligns with prior research by Smith and Johnson (2018), who found that earlier physical maturation increases the likelihood of adolescent pregnancy due to factors such as increased peer pressure and earlier romantic relationships. Similarly, the positive correlation between parent-adolescent conflict (r = 0.986, p < .001) and adolescent pregnancy is consistent with previous studies by García et al. (2019) and Lee and Chen (2020). These studies suggest that strained parent-child relationships can lead to adolescents engaging in risky behaviours, including unprotected sexual activity, which in turn increases the risk of pregnancy. Conversely, the negative correlation between family cohesion (r = -0.941, p < .001) and adolescent pregnancy is in line with prior research by Brown and Williams (2017) and Rodríguez et al. (2019). Strong family bonds and positive communication within the family can provide adolescents with support, guidance, and access to resources that help them delay or avoid pregnancy.

Research question 2: what are the predictive weights of early maturation, parent-adolescents conflict and family cohesion on adolescent pregnancy tendency?

Table 2: MIMIC Model summary showing the Predictive weights of the exogenous variables of adolescent pregnancy

Exogenous Variables	Estimate (β)	Std. Error	z-value	p
Earlymaturation	0.014	0.862	0.016	0.987
Parent-adolescence conflict	7.357	0.610	12.062	< .001
Familycohesion	0.226	0.909	0.249	0.803

Table 2 reveals that parent-adolescent conflict (β = 7.357, Z = 12.062, p< 0.001) had direct effect on adolescent pregnancy, early maturation (β = 0.014, Z = 0.862, p> 0.05) and family cohesion (β = 0.226, Z = 0.249, p> 0.05) did not have significant direct effect on adolescent pregnancy. By implication a unit change parent-adolescence conflict will lead to an increase adolescent pregnancy by 735 times (see fig. 1).
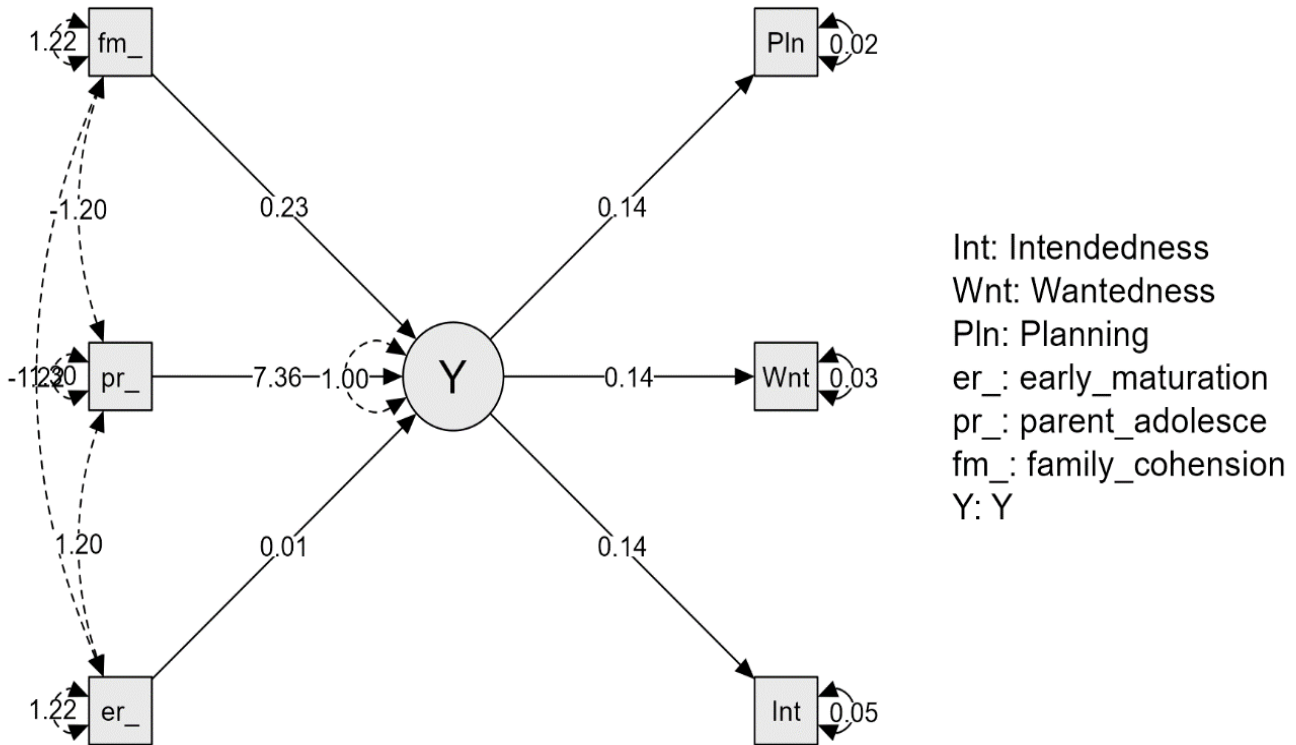
Path plot

Int: Intendedness
Wnt: Wantedness
Pln: Planning
er_: early_maturation
pr_: parent_adolesce
fm_: family_cohension
Y: Y

Fig. 1: MIMIC Model summary showing the Predictive weights of precursors of adolescent pregnancy

Discussion

The analysis revealed that early maturation did not have a significant direct effect on adolescent pregnancy ($\beta = 0.014$, $Z = 0.862$, $p > .05$). This finding contrasts with some prior studies that suggested a positive association between early physical development and increased pregnancy risk.Smith and Johnson (2018) reported that early maturation exposes adolescents to peer pressure and potentially earlier romantic relationships, which may contribute to higher pregnancy rates. However, our results indicate that other factors play a more substantial role in predicting adolescent pregnancy.

The most robust predictor in our model was parent-adolescent conflict ($\beta = 7.357$, $Z = 12.062$, $p < .001$). This aligns with existing literature emphasizing the impact of family dynamics on adolescent behaviour.García et al. (2019) and Lee and Chen (2020) similarly found that strained parent-child relationships correlate with risky behaviours, including unprotected sexual activity. Adolescents experiencing conflict may seek solace outside the family, potentially leading to early sexual initiation and pregnancy.Contrary to our expectations, family cohesion did not significantly predict adolescent pregnancy ($\beta = 0.226$, $Z = 0.249$, $p > .05$). However, this finding does not diminish the importance of family bonds.Brown and Williams (2017) and Rodríguez et al. (2019) emphasized that strong family ties provide emotional support, guidance, and access to resources. While not directly associated with pregnancy risk, family cohesion indirectly contributes to overall well-being and informed decision-making.

Research Question 3: To what extent do the observed indicators (intendedness, wantedness, planning) significantly load onto the latent construct of adolescent pregnancy?

Table 3: Confirmatory factor analysis summary of the MIMIC Model showing coefficients of factors loading on the adolescent pregnancy.

Indicator	Estimate (β)	Std. Error	z-value	p
Intendedness	0.136	0.010	12.979	< .001
Wantedness	0.136	0.010	13.195	< .001
Planning	0.137	0.010	13.199	< .001

Table 3 reveals that three dimensions significantly load (Intendedness (β = 0.136, p < .001), Wantedness (β = 0.136, p < .001) and Planning (β = 0.137, p < .001)) on adolescents' pregnancy latent construct. This indicates that the factor loadings of the dimensions ranges between 13.6%-13.7%. Furthermore, the statistically significant z-values (greater than 3.29 in absolute value) and p-values (less than .001) indicate strong positive associations between each indicator and the latent variable, adolescent pregnancy. In other words, higher scores on the intendedness, wantedness, and planning scales are indicative of a greater likelihood of adolescent pregnancy in this model.

Discussion

The construct of adolescent pregnancy is multifaceted, encompassing various dimensions that contribute to its understanding. This study's confirmatory factor analysis provides insight into the extent to which intendedness, wantedness, and planning are predictive of adolescent pregnancy. The significant loadings of these indicators on the latent construct suggest that each plays a substantial role in the occurrence of adolescent pregnancy. The concept of intendedness reflects the degree to which a pregnancy is planned or foreseen by the adolescent. The significant loading of this indicator aligns with the findings of Miller, Sage & Winward, (2005), who emphasized that pregnancy intentionality can influence an adolescent's contraceptive behaviour and subsequent pregnancy risk. Wantedness pertains to the desire or acceptance of a pregnancy at the time of conception. de Oliveira-Monteiro, de Freitas, & Aznar-Farias (2014) highlighted that the emotional readiness for a child could impact the adolescent's approach to pregnancy and parenting. While, planning indicates the extent of preparation and forethought given to the possibility of becoming pregnant. Coley, & Chase-Lansdale, (1998) discussed how planning for the future, including the prospect of parenthood, can affect adolescent behaviour and decision-making.

Research Question 4: Does the inclusion of the hypothesized relationships in the factor model significantly improve the model fit for predicting adolescent pregnancy compared to the baseline model?

Table 4: Model fit indexes Summary showing of Adolescent Pregnancy MIMIC Model

	df	χ²	p	CFI	TLI	NNFI	IFI	RNI	RMSEA
Baseline model	12	2243.241	< .001	0.970	0.940	0.940	0.967	0.935	0.230
Factor model	6	73.088	< .001						

Table 4 reveals the Chi-square tests assessing the fit of the baseline and factor models. The baseline model, which likely did not include the hypothesized relationships, revealed a statistically significant chi-square ($\chi^2_{(12)}$ = 2243.241, p < .001), suggesting poor fit. The factor model also showed a significant chi-square ($\chi^2_{(6)}$ = 73.088, p < .001). However, chi-square can be sensitive to sample size, potentially inflating significance

in this case.

Model fit indices provided further insight. The Comparative Fit Index (CFI = .970), Tucker-Lewis Index (TLI = .940), Bentler-Bonett Non-normed Fit Index (NNFI = .940), Bollen's Incremental Fit Index (IFI = .970), and Relative Noncentrality Index (RNI = .970) all exceeded .90, generally indicating an acceptable fit (Hu &Bentler, 1999). Conversely, the Root Mean Square Error of Approximation (RMSEA = .230) fell outside the recommended range for good fit (< .08; Browne &Cudeck, 1993). However, the very low RMSEA p-value suggested potential over-rejection of good models due to sample size limitations.

CONCLUSION

Our study has illuminated various factors associated with adolescent pregnancy. By examining early maturation, parent-adolescent conflict, and family cohesion, gained valuable insights into the dynamics influencing pregnancy outcomes among adolescents.

The most robust predictor of adolescent pregnancy was parent-adolescent conflict. Strained family relationships significantly increased the likelihood of risky behaviors, including unprotected sexual activity. This indicates that interventions aimed at improving parent-child communication and conflict resolution can play a pivotal role in preventing unintended pregnancies. While early maturation and family cohesion did not independently predict pregnancy, the dimensions of intendedness, wantedness, and planning emerged as critical factors. Adolescents' emotional readiness, desire for parenthood, and thoughtful planning significantly influenced their pregnancy tendencies. By implications, comprehensive sex education programs should address not only contraceptive knowledge but also emotional preparedness and communication skills. Strengthening family bonds and fostering positive relationships can indirectly mitigate pregnancy risk.

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