ORIGINAL ARTICLE:

Role of family structure and parenting style in adolescent pregnancy in Surabaya, Indonesia

Fulatul Anifah,[1]* Djaswadi Dasuki,[2] Herlin Fitriana K,[3] Atik Triratnawati,[4]
[1]Muhammadiyah University, Surabaya, Indonesia, [2]Faculty of Medicine, Gadjah Mada University, Yogyakarta, Indonesia, [3]'Aisyiyah University, Yogyakarta, Indonesia, [4]Faculty of Cultural Sciences, Yogyakarta, Indonesia

ABSTRACT

Objectives: This study aimed to examine the relationship between family structure and parenting style and their association with adolescent pregnancy in Surabaya.
Materials and Methods: A mixed-methods approach was employed, combining a case–control design with a case study. Data were collected through questionnaires and in-depth interviews. The study included 46 adolescents (23 cases and 23 controls) selected using purposive sampling, along with six adolescents as key qualitative participants. Quantitative data were analyzed using univariate, bivariate (Chi-square), and multivariate (multiple logistic regression) analyses with a significance level of p = 0.05 and a 95% confidence interval (CI). Qualitative data were analyzed thematically based on in-depth interviews.
Results: Family structure was not statistically significant (OR = 10.53; 95% CI = 0.657–168.93), though it showed social relevance. Parenting style was also not significantly associated with adolescent pregnancy (OR = 1.191; 95% CI = 0.373–3.806). However, respondent education was significantly associated with adolescent pregnancy (OR = 559.76; 95% CI = 3.608–23,026.4). No significant associations were found for parental education, employment status, or residential setting. Parenting style appeared to be influenced by the quality of communication between parents and adolescents.
Conclusions: Low educational attainment was identified as a major risk factor for adolescent pregnancy. Additionally, adolescents from extended families or single-parent households appeared more likely to experience teenage pregnancy.

Keywords: Adolescent pregnancy, parenting style, family structure.

ABSTRAK

Tujuan: Penelitian ini bertujuan untuk menganalisis hubungan antara struktur keluarga dan pola asuh orang tua dengan kejadian kehamilan pada remaja.
Bahan dan Metode: Penelitian ini menggunakan pendekatan *mixed methods* dengan rancangan case-control dan studi kasus. Pengumpulan data dilakukan melalui kuesioner dan wawancara mendalam. Sampel terdiri atas 46 remaja (23 kasus dan 23 kontrol) yang dipilih menggunakan teknik *purposive sampling*, serta enam remaja sebagai partisipan utama dalam studi kualitatif. Analisis data kuantitatif dilakukan secara univariat, bivariat menggunakan uji chi-square, dan multivariat menggunakan regresi logistik ganda dengan tingkat signifikansi p<0,05 dan confidence interval (CI) 95%. Data kualitatif dianalisis melalui pendekatan tematik berdasarkan hasil wawancara mendalam.
Hasil: Struktur keluarga tidak menunjukkan hubungan yang bermakna secara statistik dengan kehamilan remaja (OR 2,706; CI 0,372–19,688). Pola asuh orang tua juga tidak memiliki hubungan yang signifikan secara statistik (OR 1,191; CI 0,373–3,806). Faktor yang terbukti memiliki hubungan signifikan adalah tingkat pendidikan responden (OR 107,485; CI 7,913–1459,995). Tidak ditemukan hubungan yang signifikan pada variabel pendidikan ayah, pendidikan ibu, status pekerjaan, dan tempat tinggal. Pola asuh orang tua diduga dipengaruhi oleh kualitas komunikasi antara orang tua dan anak.
Simpulan: Risiko kehamilan remaja lebih tinggi pada remaja dengan tingkat pendidikan rendah. Selain itu, remaja yang berasal dari keluarga besar atau keluarga dengan satu orang tua cenderung memiliki risiko lebih tinggi mengalami kehamilan pada usia remaja.

Kata kunci: Kehamilan remaja, pola asuh orang tua, struktur keluarga

***Correspondence:** Fulatul Anifah, Muhammadiyah University, Jalan Sutorejo 59, Surabaya, Indonesia. Phone: +6285646266155. E-mail: nurfathanarif@gmail.com.

pISSN:0854-0381 ● eISSN: 2598-1013 ● doi: http://dx.doi.org/10.20473/mog.V26I22018.91-97
● Maj Obs Gin. 2018;26:91-97 ● Received 22 Feb 2018 ● Accepted 8 Ags 2018

INTRODUCTION

Adolescence represents a transitional stage between childhood and adulthood. This developmental period is marked by physical, social, and psychological maturation, during which individuals strive to establish their self-identity.[1] Adolescent pregnancy constitutes a public health concern in both developed and developing nations[2] and is associated with numerous adverse health outcomes.[3] The adolescent birth rate is estimated at 44 per 1,000 females aged 15–19 years. Globally, by 2014, more than 700 women became pregnant before the age of 18.[4] Data from the Central Statistics Agency (BPS) through the 2012 Indonesian Demographic and Health Survey (IDHS) indicated that among adolescents aged 15–19 years, the pregnancy rate reached 48 per 1,000.

Risk factors for adolescent pregnancy in South Asia include socioeconomic status, educational attainment, cultural influences, and family structure.[5] The prevalence of adolescent pregnancy is greater among those from lower socioeconomic classes, with limited education, and within cultures that promote early marriage.[6,7] The proportion of adolescent pregnancies is higher among those originating from large families. Such adolescents often engage in premarital sexual activity driven by emotional attachment or love, leading to conflict with parents and subsequently reduced supervision and guidance from family members.[8]

Another prominent risk factor for adolescent pregnancy is low educational attainment. Evidence suggests that young women who exhibit poor academic performance, possess limited intellectual capacity, and have low aspirations and motivation are more likely to experience early pregnancy.[9] Early marriage culture[5] and exposure to mass media also contribute to adolescent pregnancy. Media exposure may influence adolescents toward risky sexual behaviors, thereby increasing the likelihood of unintended pregnancy.[10]

Living arrangements with parents may further influence pregnancy risk. Adolescents who reside with both parents generally receive greater supervision, thereby reducing the likelihood of pregnancy resulting from premarital sexual activity. In contrast, those living with a single parent—often due to marital conflict—may experience disrupted parenting, which can adversely affect psychological development and increase the propensity for sexual activity and adolescent pregnancy.[11]

Parenting refers to the comprehensive interaction between parents and children that shapes behavior, knowledge, and values considered appropriate by parents, enabling the child to grow into an independent, confident, and optimally developed individual.[12] Adolescents raised under authoritarian or permissive parenting styles are more likely to experience unintended pregnancies than those raised under democratic parenting.[13]

Previous studies have shown that adolescent pregnancy can lead to adverse health outcomes such as preterm labor, fetal distress, neonatal asphyxia, anemia during pregnancy, low birth weight (LBW), hypertension in pregnancy (HIP), and spontaneous abortion. Beyond medical complications, numerous social consequences arise from adolescent pregnancy, including school dropout, divorce, maternal mortality, increased population growth, birth of weak or unhealthy infants, and single motherhood, which may increase the risk of adolescent pregnancy in the next generation.[5] The objective of this study was to identify the association between family structure and parenting style with adolescent pregnancy, taking into account the respondent's educational level, father's and mother's education, parental employment status, and place of residence.

MATERIALS AND METHODS

The present study was a descriptive-analytic study employing a case–control design and a mixed-method approach (quantitative and qualitative) using a sequential explanatory model. Quantitative data were collected and analyzed first, followed by the collection and analysis of qualitative data, which were developed based on the initial quantitative findings. The qualitative component utilized a case study approach. In-depth interviews were conducted to obtain more comprehensive insights regarding adolescent pregnancy and parenting practices.

The study population consisted of case and control groups from which samples were drawn. The case population comprised women under 20 years of age who experienced extramarital pregnancy and received health services at local puskesmas (community health centers). The case subjects were women with extramarital pregnancy identified from health center records, excluding pregnancies resulting from rape. The control population consisted of women who had never been pregnant, matched by age group (early and late adolescence) and residing in the same puskesmas catchment area as the case subjects, excluding those who were married. The sample size was determined using total sampling for the case group, which included 23 subjects from Balongsari Health Center, Krembangan Selatan Health Center, Rangkah Health

Center, Pacar Keling Health Center, and Kalijudan Health Center. The control group was selected through purposive sampling based on the characteristics of the case group, particularly age and residential area, with a 1:1 ratio. Interviews were conducted with pregnant and non-pregnant adolescents as key informants, along with parents, PKPR (Adolescent Health Care Program) officers, and staff from the Family Health Division of the Surabaya City Health Office, serving as triangulation sources.

This study was conducted from October 2017 to January 2018. The independent variables were family structure and parenting style, measured according to the presence of an extended family structure (three generations living together in one household), a single-parent family (one parent with children), or a nuclear family (father, mother, and children). Parenting style was classified as democratic, authoritarian, or permissive. The dependent variable was adolescent pregnancy, determined by pregnancy testing, while the external variables included parental education, respondent's education, parental employment status, and place of residence. The research instruments consisted of questionnaires and interview guides. The parenting questionnaire was adapted from the Parental Authority Questionnaire (PAQ) developed by Buri.[14]

Prior to data collection, the validity and reliability of the questionnaire were tested. The interview guidelines had previously undergone construct validity testing through expert judgment. This study received ethical approval from the Ethics Commission of Universitas 'Aisyiyah Yogyakarta. Quantitative data were analyzed through univariate, bivariate (Chi-square), and multivariate (multiple logistic regression) analyses. The researchers encountered several challenges, including coordinating with officers to obtain respondent data and managing the geographical distance between respondents across different health center areas, which extended data collection time when meetings occurred on the same day in separate regions. Another difficulty involved locating respondents whose addresses did not match medical records at the health centers. However, these obstacles were resolved through the use of telephone contacts and information provided by neighbors.

RESULTS AND DISCUSSION

Univariable analysis was conducted for each study variable, including the independent variables (family structure and parental parenting style) and the dependent variable (adolescent pregnancy). In Table 1, the results of the analysis indicated a significant relationship between family structure and adolescent pregnancy in the bivariable analysis, with p=0.017 and OR 4.407. However, the multivariable analysis did not demonstrate a statistically significant relationship with the incidence of adolescent pregnancy when the variables of respondents' education, father's education, and maternal education were included. Family structure was found to be socially significant (OR 2.706; CI 0.372–19.688). Extended family and single-parent family structures increased the likelihood of adolescent pregnancy 4.407 times compared to the nuclear family structure.

Table 1. Cross tabulation of independent and external variables with adolescent pregnancy

Variables	Groups				*P*	OR	CI 95%
	Case		Control				
	n	%	n	%			
Family Structure					0.017	4.407	1.260-15.413
Extended Family dan Single parent	17	74	9	39			
Nuclear family	6	26	14	61			
Parenting					0.767	1.191	0.0373-3.806
Authoritatian and permissive	11	52	13	57			
Democratic	12	48	10	43			
Respondents' education					0.000	49.875	8.184-303.925
Low level education	19	82	2	8			
High level education	4	18	21	92			
Father's education					0.018	4.285	1.246-14.735
Low level education	15	65	7	30			
High level education	8	35	16	70			
Mother's education					0.038	3.555	1.048-12.051
Low level education	14	61	7	30			
High level education	9	39	16	70			
Parent's occupation status					0.067	4.593	0.839-25.165
Low	21	91	16	70			
High	2	9	7	30			
Dwelling place					0.142	2.916	0.648-13.121
With parents	16	70	20	87			
Not with parents	7	30	3	13			

Table 2. Characteristics of the main participants

Notes	Pregnant			Not pregnant		
	P1	P2	P3	P4	P5	P6
Age	18	17	16	18	17	15
Health center area	Rangkah	Krembangan Selatan	Pacar Keling	Rangkah	Krembangan Selatan	Pacar Keling
Marriage status	Yes	Yes	Not	Not	Not	Not
Education	Junior High	Junior High	Junior High	Senior High	Senior High	Junior High
Parenting	Democratic	Democratic	Permissive	Democratic	Democratic	Democratic
Fathers' education	High	Low	High	Low	High	Low
Mothers' education	High	High	High	Low	High	Low
Occupational status	Low	High	Low	Low	High	Low

Interviews revealed that extended families influenced parents' decision-making processes regarding their children, resulting in adolescents feeling pressured by their families at home. Consequently, these adolescents sought pleasure outside the home. This finding is consistent with a study showing that the presence of extended families can increase emotional and economic tensions within the household. Such circumstances reduce the attention given to adolescents, particularly concerning sexual health, leading some to decide to become pregnant outside marriage out of affection while defying parental or family expectations.[5]

The presence of other family members besides the parents may affect decision-making by both the adolescents and their parents. This differs from nuclear families, in which parental decisions are less influenced by external parties, allowing for better communication between parents and adolescents. The incidence of adolescent pregnancy was more frequent among girls from large (extended) families and single-parent households, accounting for 74% of cases, compared to 39% among those without adolescent pregnancy. The findings indicated that adolescents living with both parents received greater supervision, thereby minimizing the risk of pregnancy due to extramarital sexual relations. Conversely, adolescents living with one parent—often due to marital conflict—experienced less supervision. Such conflicts within the household can disrupt parenting quality and affect the child's psychological development, thereby influencing behavioral tendencies toward sexual activity and adolescent pregnancy.[11]

Adolescents often spend more time with peers than with family members, and when peer opinions are irresponsible and promote risky behavior, such opinions exert stronger influence than parental guidance.[15] This finding corresponds with the lack of significant relationship in multivariable analysis, suggesting that adolescent pregnancy may also be influenced by peer factors. This aligns with a study indicating that social environment, peer interaction, and spiritual life are related to premarital sexual behavior. Peers play a role in adolescents' search for self-identity; however, when peers demonstrate negative behaviors, adolescents are more likely to engage in unhealthy sexual activities that may result in pregnancy.[16]

The analytical results revealed no significant association between parental parenting style and adolescent pregnancy (p=0.767). Democratic parenting was observed among both cases and controls, accounting for 52% among adolescents with pregnancy and 57% among those without. Interview findings indicated that most parents of pregnant adolescents acknowledged limited communication with their children in all circumstances. This aligns with previous findings that poor communication between parents and children is common. Parents are more likely to discuss sexual health with their children if they possess sufficient knowledge and communication skills.[17] Parenting approaches for children and adolescents differ; parents often wait for adolescents to report their activities when outside the home. Therefore, the effectiveness of parenting depends largely on the quality of communication between parents and adolescents.[18]

Regardless of strict parental supervision, adolescents still spend time socializing with peers outside the home, which may influence behavior and increase the risk of teenage pregnancy.[19] This finding contrasts with Papalia's study, which reported that adolescents raised under highly permissive parenting are more likely to experience extramarital pregnancy due to insufficient supervision, allowing them to act freely, even engaging in inappropriate behaviors.[13] Conversely, this result supports another study showing that very few adolescents discuss reproductive health with their parents. Teenagers tend to confide in friends rather than parents, especially when parent–child communication is limited.[20] The prevailing perception of sexual matters as taboo further contributes to the lack of open discussion between adolescents and parents on issues related to sex.

Table 3. Multivariable analysis between independent variables, dependent variables and external variables.

Variables	Model 1 OR 95% CI	Model 2 OR 95% CI	Model 3 OR 95% CI
Respondents' education	107.485	110.811	84.571
Low education	(7.913-1459.995)	(8.499-1444.712)	(8.172-875.188)
High education	1	1	1
Fathers' education	4.591	5.432	9.744
Low education	(0.399-52.871)	(0.497-59.368)	(1.016-93.410)
High education	1	1	1
Mothers' education	4.783	4.841	
Low education	(0.420-54.427)	(0.437-53.653)	
High education	1	1	
Family Structure	2.706		
Extended Family dan Single parent	(0.372-19.688)		
Nuclear family	1		
R^2	0.735	0.722	0.695
-2 log likelihood	26.908	27.910	29.871
Deviance	87.0	87.0	87.0

The analysis results revealed a significant association between respondents' educational attainment and adolescent pregnancy. Statistically, low education among respondents was identified as a risk factor, rendering adolescents 107 times more likely to become pregnant compared to those with higher education. Interviews indicated that most pregnant adolescents dropped out of school after learning of their pregnancy. Other participants reported that they were unable to continue their education due to financial constraints.

This finding aligns with previous research demonstrating a correlation between low education levels and early parenthood. Evidence shows that girls who perform poorly in school, possess limited academic ability, and have low aspirations and motivation are more likely to experience early pregnancy.[9] Some parents believe that pregnancy outside of marriage inevitably leads to school dropout, although education can, in fact, serve as a protective factor against premature sexual activity.[19] Pregnant adolescents were found to have no more than a primary school education, in contrast to pregnant women aged over 20 years. Education enhances self-confidence, increases the age at first sexual intercourse, and delays marriage.[5] Statistically, bivariable analysis showed that low paternal education increased the risk of adolescent pregnancy by 4.285 times compared to higher paternal education. However, multivariable analysis did not demonstrate a significant association between paternal education and adolescent pregnancy, although the relationship was socially meaningful.

The community's socioeconomic status can be assessed through various factors, including employment, education, income, number of dependents, property ownership, and type of residence.[21] Moreover, educational experience is closely linked to socioeconomic conditions, as education is essential for career advancement. Education plays a vital role in societal development; individuals with adequate education are more capable of distinguishing right from wrong.[22]

Bivariable analysis further indicated that low maternal education was associated with a 3.55-fold higher risk of adolescent pregnancy compared to high maternal education. Nonetheless, multivariable analysis did not reveal a statistically significant association between maternal education and adolescent pregnancy, although the relationship was socially significant. The mother is the closest figure to a young woman, and those with higher education tend to provide better care and guidance. Educated mothers are generally more exposed to information, including effective parenting strategies and communication techniques, particularly relevant during adolescence. Consequently, when adolescents encounter problems, these mothers are more capable of offering appropriate solutions, reducing the likelihood that their daughters will seek peer guidance and engage in risky behaviors such as premarital sex. Such behaviors increase the risk of adolescent pregnancy.[23]

Analysis also showed a significant relationship between employment status and adolescent pregnancy in bivariable analysis (p=0.067; OR 4.593). However, multivariable analysis did not confirm a statistically significant association, though the relationship was socially relevant. A study has reported that adolescents with mothers working outside the home are at greater risk of pregnancy compared to those whose mothers remain at home. While maternal employment may improve family economic status, it often reduces time available for child supervision. Working outside the home during a child's developmental years can negatively affect their growth and behavior.[15] The most

consistent risk factor identified for adolescent pregnancy is low socioeconomic status.[24]

Further analysis demonstrated no significant relationship between type of dwelling and the incidence of adolescent pregnancy (p=0.142), indicating that residence type was not a risk factor. This finding contrasts with earlier studies showing that adolescents living with a single parent or without both parents face higher health risks, including adolescent pregnancy. Inadequate supervision from a single parent, combined with permissive attitudes and engagement in risky sexual behaviors, contributes to this outcome. In modern settings, adolescents spend more time with peers than family, often valuing friends' opinions over parental guidance. Consequently, adolescent pregnancy is more prevalent among those not living with their parents.[24]

CONCLUSION

No significant relationship was found between family structure and parental parenting style with the incidence of adolescent pregnancy when accounting for respondents' education, paternal education, maternal education, employment status, and place of residence. However, from a social perspective, family structure demonstrated a significant association with adolescent pregnancy. Among the analyzed variables, respondents' educational level showed the strongest correlation. Further research is warranted, taking into consideration additional influential factors such as social environment, social media exposure, and religiosity, given that adolescent pregnancy has numerous adverse health, social, and psychological consequences. Future studies should also involve larger sample sizes to allow for broader generalization of the findings. Regarding family structure variables, attention should be directed not only to family composition but also to the degree of emotional attachment and closeness between parents and children.

ACKNOWLEDGMENT

The author would like to thank the Surabaya City Health Office, Balongsari, Krembangan Selatan, Rangkah, Pacar Keling, and Kalijudan Health Centers for permitting data collection, as well as their participation in this study.

REFERENCES

1. DiClemente RJ, Hansen WB, Ponton LE. Handbook of Adolescent Health Risk Behavior. Springer. 2013.
2. Lawlor DA and Shaw M. Teenage pregnancy rates: high compared with where and when? Journal of the Royal Society of Medicine. 2004;97:121-3.
3. WHO. Adolescent Pregnancy. Geneva, Switzerland. World Health Organization. Department of Child and Adolescent Health and Development. 2004.
4. WHO. The Global AA-HA! Framework (Accelerated Action for the Health of Adolescents), World Health Organization, 2016. World Health Statistics - Monitoring Health For The SDGs. World Health Organization, 2016; p. 1–136.
5. Raj ADB, Rabi P, Amudha V et al. Factors associated with teenage pregnancy in South Asia: A Systematic Review. Health Science Journal. 2010;4(1).
6. Shrestha, A. Socio-cultural factors influencing adolescent pregnancy in rural Nepal. International Journal of Adolescent Medicine & Health. 2002;14:101-9.
7. Sharma AK, Verma S, Khatri, Kannan A. Determinants of pregnancy in adolescents in Nepal. Indian Journal of Pedriatics. 2002;69:28-30.
8. Ganatra B and Hirve S. Induced abortions among adolescent women in rural Maharasthra, India. Reproductive Health Matters. 2002;10:76-85.
9. Fergusson DM and Woodward LJ. Teenage pregnancy and female educational under-achievement. Journal of Marriage and the Family. 2000; 62:147-161
10. Mutya M. Hubungan Keterpaparan Media Massa dengan Perilaku Seksual berisiko pada Remaja di SMAN 4 Payakumbuh. Thesis. Padang: Universitas Andalas; 2015.
11. Moore MR and Lansdale PLC. Sexual intercourse and pregnancy among African American girls in high-poverty neighborhoods: The role of family and perceived community environment. Journal of Marriage and Family. 2001;63(4):1146–57.
12. Agency B and Tridhonanto AL. Membangun Pola Asuh Demokratis. Jakarta: Gramedia; 2014.
13. Setyawati NE and Ismarwati. Faktor-faktor yang Berhubungan dengan Kejadian Kehamilan Tidak Diinginkan pada Remaja di Wilayah Kerja Puskesmas Pakem Sleman Tahun 2015. Undergraduate Thesis. Yogyakarta: Program Studi D IV Bidan Pendidik Sekolah Tinggi Ilmu Kesehatan 'Aisyiyah; 2015.
14. Riberio LR. Construction and validation of a four parenting styles scale. Thesis. The Faculty of Humboldt State University. 2009.
15. Nava FV, Rodriguez CFV, Gonzales AHS et al. Unplanned pregnancy in adolescents: Association

with family structure, employed mother, and female friends with health-risk habits and behaviors. Journal of Urban Health: Buletin of the New York Academy of Medicine. 2013;91(1).
16. Karyati S. Lingkungan Sosial, Teman Sebaya, Spiritualitas dan Perilaku Seksual Pranikah Remaja Anak Jalanan. The 5th URECOL Proceeding. Yogyakarta: Universitas Ahmad Dahlan; 2017.
17. Krugu JK, Mevissen F, Munkel M, Ruiter R. Beyond love: a Qualitative analysis of factors associated with teenage pregnancy among young women with pregnancy experience in Bolgatanga, Ghana. Culture, Health & Sexuality. 2016:1058; pp.1–15.
18. Hoskins DH. Consequences of parenting on adolescent outcomes. Societies. 2014;4:506-531
19. Wamoyi JA, Fenwick M, Urassa et al. Parental control and monitoring of young people's sexual behaviour in rural North-Western Tanzania: Implications for sexual and reproductive health intervensions. BMC Public Health. 2011;(11):106
20. Ayalew MB, Mengistie, Semahegn A. Adolescent-parent communication on sexual and reproductive health issues among high school students in Dire Dawa, Eastern Ethiopia: A cross sectional study. Biomed Central. 2014;(11).
21. Soekanto S. Sosiologi Suatu Pengantar. Jakarta: Rajawali Press; 2010.
22. Widadi DP. Hubungan Kondisi sosial Ekonomi orangtua dan Motivasi Belajar Siswa dengan Prestasi Belajar Penjasorkes Siswa kelas XI Di SMA Negeri 1. Undergraduate Thesis. Faculty of Sport Sciences. Universitas Negeri Yogyakarta. Yogyakarta. 2016.
23. Aguilar APM, Carter M, Snead C, Kourtis AP. Socioeconomic disadvantage as a social determinant of teen childbearing in the US. Public Health Reports. 2013;128(suppl 1): 5-22
24. Imamura M, Tucker J, Hunnaford P et al. Miscellaneous factor associated with teenage pregnancy in the European Union countries: a systematic review. European Journal of Public Health. 2007;17(6): 630-6.