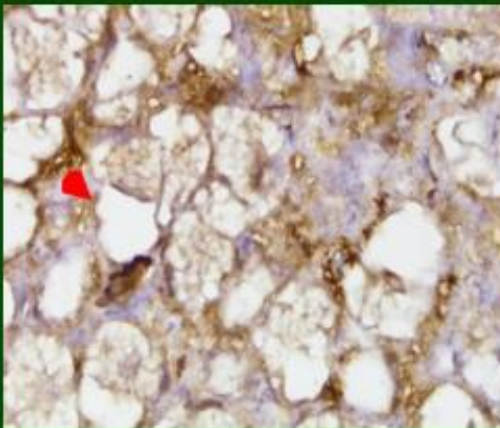


Majalah Obstetri & Ginekologi



Vol. 26 No. 2 August 2018



TLR2 IHC of placental cells in pregnant mice

Articles

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- Combination of palonosetron-dexamethasone is more effective than ondansetron-dexamethasone as single cisplatin antiemetic chemotherapy
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- Sambiloto (AS201-01) is better than standard antimalarial drug (DHP) in reducing Toll Like Receptor2 (TLR2) on placenta malaria model
- Effect of sambiloto tablet (AS201-01) on placental CSA expression of pregnant mice infected by *Plasmodium berghei*
- Role of family structure and parenting style in adolescent pregnancy in Surabaya, Indonesia

Published by

Department of Obstetrics & Gynecology, Airlangga University
In Collaboration with Indonesian Society of Obstetrics & Gynecology

Accredited by Ministry of Education and Culture, Republic of Indonesia,
No. 58/DIKTI/Kep/2013

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,⁴¹Muhammadiyah University, Surabaya, Indonesia, ²Faculty of Medicine, Gadjah Mada University, Yogyakarta, Indonesia,³Aisyiyah University, Yogyakarta, Indonesia, ⁴Faculty of Cultural Sciences, Yogyakarta, Indonesia**ABSTRACT****Objectives:** To explore the relationship of family structure and parenting style with adolescent pregnancy in Surabaya**Materials and Methods:** This research uses mix methods approach with case-control design and case study. Data were collected by questionnaire and in-dept interview guidelines. This study involved 46 adolescent (23 cases and 23 control) by purposive sampling and 6 adolescents as main participants. Quantitative data were analyzed on univariable, bivariable with chi square and multivariable with multiple logistic regression with $p=0,05$ and CI 95%. Qualitative data were analyzed by in-depth interview**Results:** Family structure were not statistically significant (OR 10.53; CI 0.657-168.93), but socially meaningful. There is not statistically significant between parenting style with adolescent pregnancy (OR 1.191; CI 0.373-3.806). Other factors that have a significant relationship with adolescent pregnancy is education of responden (OR 559.76; CI 3.608-23026.4). There is no statistically significant in education father, education mother, employment status and where they living. Parenting style can be influenced by communication between parents and adolescent.**Conclusions:** Risk of adolescent pregnancy on people who have low education. Adolescents from extended family and single parent have a role to the incidence of teenage pregnancy.**Keywords:** Adolescent pregnancy, parenting style, and family structure.**ABSTRAK****Tujuan:** Mengeksplorasi hubungan struktur keluarga dan pola asuh orang tua dengan kehamilan remaja**Bahan dan Metode:** Penelitian ini menggunakan pendekatan mix method dengan rancangan case control dan studi kasus.. Pengumpulan data dengan kuesioner dan pedoman wawancara. Sampel sebanyak 46 (23 kasus dan 23 kontrol) diambil dengan teknik purposive sampling dan 6 remaja sebagai partisipan utama. Analisis kuantitatif dengan univariabel, bivariabel menggunakan chi square dan multivariabel menggunakan multiple logistic regression dengan $p<0,05$ dan CI 95%. Analisis kualitatif dengan wawancara mendalam**Hasil:** Struktur keluarga tidak memiliki hubungan yang bermakna secara statistik (OR 2,706; CI 0,372-19,688). Pola asuh orang tua tidak memiliki hubungan signifikan secara statistik dengan kehamilan remaja (OR 1,191; CI 0,373-3,806). Faktor lain yang memiliki hubungan signifikan dengan kehamilan remaja adalah pendidikan responden (OR 107,485 CI 7,913-1459,995). Tidak menunjukkan hubungan signifikan pada variabel pendidikan ayah, pendidikan ibu, status pekerjaan dan tempat tinggal. Pola asuh orang tua yang diberikan dapat dipengaruhi oleh komunikasi orang tua dengan anak.**Simpulan:** Risiko kehamilan remaja lebih tinggi pada remaja dengan pendidikan rendah. Remaja dari struktur keluarga besar dan satu orang tua mempunyai peran terhadap kejadian kehamilan remaja.**Kata kunci:** Kehamilan remaja, pola asuh orang tua dan 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

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INTRODUCTION

Adolescence is a transitional period between childhood and adulthood stages. The period of development of adolescents is characterized by physical, social, and psychological maturity, characterized by efforts to find self-identity.¹ Adolescent pregnancy is a public health problem, both in developed and developing countries.² and is associated with many health problems.³ Adolescent birth rate is estimated to be 44/1000 in women aged 15-19 years. Globally by 2014 there are more than 700 women who became pregnant at the age of less than 18 years.⁴ The results of a survey from the Central Statistics Agency (BPS) through the 2012 Indonesian Demographic Health Survey (IDHS) showed that the number of adolescent pregnancies in the 15-19-year age group reached 48 of 1000 pregnancies.

The risk factors for adolescent pregnancy in South Asia are socioeconomic status, educational level, cultural factors and family structure.⁵ The incidence of pregnancy in adolescents is higher in low social classes, low education levels, and a culture of early marriage.^{6,7} The proportion of adolescent pregnancies is higher among those from large families. They tend to have premarital sex for reasons of love so they tend to fight parents, resulting in a lack of supervision and guidance of family members to those adolescents.⁸

Another factor that is at risk for adolescent pregnancy is low education. The fact shows that women who behave poorly at school, have low educational abilities, low ideals and motivation, are more likely to get pregnant earlier.⁹ Another factor associated with adolescent pregnancy is the existence of an early marriage culture.⁵ and the dissemination of information media. Exposure to mass media poses to the risk of risky sexual behavior events in adolescents, which may have an impact on adolescent pregnancy.¹⁰

Whether a teenager lives with a parent or not, can be a risk factor. Teenagers who live with parents obtain more supervision so that the risk of pregnancy due to extramarital sexual relations is very small. This is different from those who live with one parent due to conflict in marriage. Conflicts that occur in the family can affect childcare and affect the development of child psychology, thus affecting the behavior of children to have sexual intercourse and adolescent pregnancy.¹¹

Parenting is an interaction that occurs between parents and children as a whole that can change the behavior, knowledge, and values that are considered most appropriate for parents so that children can be independent, confident, and developing healthy and optimal.¹² Parents with authoritarian and permissive

parenting style, have children who experience unwanted pregnancies compared to children from parents with democratic parenting.¹³

A previous study shows that the impacts that will arise because of adolescent pregnancy are preterm labor, fetal distress, babies born with asphyxia, anemia in pregnancy, Low Birth Weight (LBW), Hypertension in Pregnancy (HIP), and spontaneous abortion. In addition to health problems, many social problems that will arise due to adolescent pregnancy include dropping out of school, divorce, death of women, increasing population growth, children born weak and unhealthy, and the existence of mothers who (as not having a partner) will cause the possibility of adolescent pregnancy in her child in the future.⁵ The purpose of this study was to identify the relationship between family structure and parenting style with adolescent pregnancy by paying attention to the respondent's education, father's education, maternal education, parental employment status, and place of residence.

MATERIALS AND METHODS

The type of this study was descriptive analytic study using case control design and mixed method approach (quantitative and qualitative) with sequential explanatory design, which was collecting and analyzing quantitative data first, then followed by the collection and analysis of qualitative data, which were built based on initial quantitative results. A qualitative approach used a case study approach. A qualitative approach was carried out through in-depth interviews to explore more information about teenage pregnancy and parenting.

The population in this study consisted of case population and control population which would then be taken as samples. The case population in this study were women with age less than 20 years who had extramarital pregnancy and received services at the Puskesmas. The case subjects in this study were women who had extramarital pregnancy based on data from Health Centers with exclusion criteria for pregnancy due to rape. The control population in this study were women who were not pregnant (never pregnant) who were determined based on the same age group (early adolescents and late adolescents) and living in the area of the same Health Center area as pregnant adolescents with exclusion criteria of already married. The sample size was taken using a total sampling approach for the case group, consisting of 23 in Balongsari Health Center, Krembangan Selatan Health Center, Rangkah Health Center, Pacar Keling Health Center, and Kalijudan Health Center. Control was taken by purposive sampling which was determined based on the

characteristics of the case group, which was based on age and place of residence with a ratio of 1:1. Interviews were conducted on pregnant and non-pregnant adolescents as key informants, parents of the adolescents, PKPR officers and the Family Health Section, Surabaya City Health Office, as triangulation.

This study was conducted from October 2017 to January 2018. The independent variables were family structure and parenting style measured by the existence of extended family family structure (family consisting of three generations living together in one house), single parent (family consisting of one parent with children), and nuclear family (family consisting of husband, wife and children) and for parenting the type of democratic, authoritarian and permissive parenting were measured. The dependent variable was adolescent pregnancy which was determined based on the pregnancy test, and the external variables were parent's education, respondent's education, parent's employment status, and place of residence. This study instrument used questionnaires and interview guidelines. The parenting questionnaire in this study was adapted from the parental Questionnaire (PAQ) developed by Buri.¹⁴

Before conducting this questionnaire research, we tested its validity and reliability. The interview guidelines used previously had been subjected to construct validity tests using expert opinions. This study was based on a recommendation from the Ethics Commission, University of Aisyiyah, Yogyakarta. Quantitative data were analyzed by univariables, bivariable using chi square, and multivariable using multiple logistic regression. The

difficulty faced by the researchers was to meet the officers to obtain the respondents' data and the distance of the respondents chosen from one health center area to the other health center so that the time needed to meet with respondents was longer when we had to meet them on the same day and different regions. Another difficulty is finding the address of the respondent that was not in accordance with the medical records in the health center. However, these difficulties could be overcome by the presence of telephone numbers and information from the neighbors.

RESULTS AND DISCUSSION

Univariable analysis was carried out on each variable of the study, the independent variables (family structure and parents' parenting) the the dependent variable (adolescent pregnancy). In Table 1, the results of the analysis showed the existence of a significant relationship between family structure and adolescent pregnancy in bivariable analysis with $p=0.017$ OR 4.407. However, multivariable analysis did not show statistically significant relationship with the incidence of adolescent pregnancy if it involved the variables of respondents' education, father's education, and maternal education. Family structure was socially significant (OR 2,706 CI 0,372-19,688). Extended family and single parent family structures increased the risk of the occurrence of adolescent pregnancy 4,407 times compared to 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
Authoritarian 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	Krempangan Selatan	Pacar Keling	Rangkah	Krempangan 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		

The interview revealed that the extended family influenced parents' decision-making process about the children, so that in this case the adolescents felt the pressure from the family at home. This makes them going out to find their own pleasure. This was in line with a study which explained that the existence of the extended family made high emotional and economic problems in the family. This is what makes the adolescents obtain less attention, especially in the matters of sexual health, so that some teenagers make decisions by choosing to become pregnant outside of marriage on the basis of love by resisting the wishes of the parents or family.⁵

The existence of other families besides parents can influence decision making, both by the teenagers themselves and the parents of the teenagers. This is different from those who live with nuclear families whose decisions were not interfered by others, thus facilitating communication between adolescents and parents. The incidence of adolescent pregnancy is more common in girls from large families (extended family) and single parent as much as 74% compared to family structures of those with no adolescent pregnancy as much as 39%. The results showed that adolescents who lived with both parents had greater supervision so the risk of pregnancy due to sexual relations outside of marriage was very small. This is different from adolescents who live with one parent, which is usually the cause is a conflict in marriage. Conflicts that occur in this household can affect childcare and affect children's psychological development, impacting the behavior of children to have sexual intercourse and adolescent pregnancy.¹¹

Teenagers often spend a lot of time with their friends than with their families and when there is an opinion of their friends who are less responsible and have an impact on risky behavior, that opinion will be more influential than their parents' opinions.¹⁵ This shows that there is no significant relationship in multivariable analysis that adolescent pregnancy can be influenced by

friends. This is in line with a study which explains that there is a relationship between social environment, peer interaction and spiritual life with premarital sexual behavior. Friends can help adolescents find self-identity. But if the peers do not behave well, most will also have bad sexual behavior, which can lead to adolescent pregnancy.¹⁶

The results of the analysis showed that there was no significant relationship between parents' parenting and adolescent pregnancies with $p=0.767$. Democratic parenting was found in cases and controls by 52% in adolescent pregnancy and 57% in non-adolescent pregnancy. Based on interviews, most parents of pregnant adolescents acknowledged the lack of communication with children in any case. This is in line with a study that explains the low communication between parents and children. Parents may discuss with children about sexual health if parents have knowledge and abilities.¹⁷ Parenting for children and adolescents is different. Often parents wait for their children to give news when they are not at home. Therefore, the effectiveness of parenting will depend on communication between parents and teenagers.¹⁸

Whatever strict parental control and supervision of their children, they are still playing or hanging out with friends outside home which can influence those children and increase the risk of teenage pregnancy.¹⁹ This is not in line with Papalia's study which explains that the parents with most permissive parenting have adolescents who experience extramarital pregnancy because they do not get supervision so they feel free to do anything, even if it is not good.¹³ On the other hand, this finding is in line with a study that shows that very few teens discuss reproductive health with their parents. Teenagers prefer to tell stories with friends than with parents. This can occur when parental and child communication is reduced.²⁰ The taboo assumption is one reason for the lack of communication between adolescents and parents about sex.

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

Variables	Model 1	Model 2	Model 3
	OR 95% CI	OR 95% CI	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 results of the analysis showed a significant relationship between the education of respondents with adolescent pregnancy. Statistically low respondent education is a risk factor for teenage pregnancy 107 times more risky than higher education. Interviews showed that most adolescents who are pregnant, after learning of their pregnancy, resigned from school. Other participants explained that she could not continue school because of cost reasons.

This is in line with a study that explains that there is a relationship between low education and being a parent early. The fact shows that girls who behave less well in school, have low educational abilities, and low ideals and motivations are more likely to get pregnant earlier.⁹ There is parents' belief that the incidence of pregnancy outside of marriage can cause them to drop out of school, even though school is actually able to prevent too early sexual activity.¹⁹ Adolescents who are pregnant are found not to have education more than primary school, compared to pregnant women over the age of 20. Education can help develop self-confidence, increase age at first sexual intercourse, and delay marriage.⁵ Statistically, in bivariable analysis, low paternal education is a risk factor of 4.285 times greater to cause adolescent pregnancy than higher education. However, the multivariable analysis did not show a significant relationship with adolescent pregnancy, although it was socially significant.

The socioeconomic status of the community can also be seen from a number of factors: employment, education, income, number of parents' dependents, ownership, and type of dwelling.²¹ In addition, the experience of education will relate to socio-economics aspect because in work education is needed to get a position. Education is very important in community life. By having enough

education, someone will know what is good and what is not good.²²

Bivariable analysis showed that low maternal education had a 3.55 times risk of the incidence of adolescent pregnancy compared to high maternal education. However, the multivariable analysis did not show a significant relationship between maternal education and adolescent pregnancy, although this was socially significant. Mother is the closest person to young women. Mothers with higher education levels will be different in care and mentoring for their children. Mothers with higher education are exposed more to information, including information about how to educate children, how to communicate with children, especially when children are adolescents, so that if they experience problems, mothers with higher education are able to provide the right solution. Thus teenagers do not come out of the house and fall prey to choosing inappropriate friends, which ultimately leads to risky behaviors such as free sex. Free sex behavior will spur pregnancy in adolescence.²³

Analysis showed a significant relationship between employment status and adolescent pregnancy in bivariable analysis with $p=0.067$ OR 4.593. In the multivariable analysis work status did not show a significant relationship to the incidence of adolescent pregnancy, but it was socially significant. A study states that adolescents who have mothers who work outside home are more at risk of adolescent pregnancy compared to mothers who do not work outside the home. The condition of working mothers can improve the family's economic status. However, a lot of time is spent at work so that supervision of children is reduced. Working outside home when children are underage can have a negative impact on the children development.¹⁵ The

most consistent risk factor for the incidence of teenage pregnancy is low socioeconomic conditions.²⁴

Analysis showed no significant relationship between dwelling and the incidence of adolescent pregnancy with $p=0.142$ and not a risk factor for adolescent pregnancy. This is not in line with previous studies that, adolescents who live at home with one parent or not with both are associated with health risks, including adolescent pregnancy. Lack of single parental supervision of youth activities and permissive adolescent attitudes with risky sexual behavior habits can lead to adolescent pregnancy. At this time teenagers spend a lot of time with their friends rather than with family, so that the opinion of friends is more closely followed than the opinions of parents. Adolescent pregnancy is higher in those who do not live with their parents.²⁴

CONCLUSION

There is no relationship between family structure and parents' parenting with adolescent pregnancy by involving respondents' education variables, father's education, maternal education, employment status and dwelling place. Socially, family structure is significantly related to adolescent pregnancy. The variable that has the strongest relationship is the education of respondents. Further research is needed by considering other important factors, such as social environment, social media, and religiosity, considering the incidence of adolescent pregnancy has many negative effects on health, social and psychological aspects, involving a larger number of samples, so that it can be used to generalize the study's results. In family structure variables, in addition to family composition, it is necessary to note the attachment or 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.

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