

WOMEN'S AUTONOMY AND UNINTENDED PREGNANCY: AN IDHS 2017 DATA ANALYSIS

*Margareth Maya Parulianta Naibaho¹, Desy Nuri Fajarningtiyas¹, Riza Fatma Arifa¹, Andi Pancanugraha²

¹National Research and Innovation Agency, 10340 Central of Jakarta, Jakarta, Indonesia

²National Population and Family Planning Board, 13650 East Jakarta, Jakarta, Indonesia

*Corresponding Author: Margareth Maya Parulianta Naibaho ; Email: mayanaibaho82@gmail.com

Published by Fakultas Kesehatan Masyarakat Universitas Airlangga

ABSTRACT

Keywords:

unintended pregnancy,
women's autonomy,
women's decision,
birth interval,
fertility

Unintended pregnancy impacts hugely on maternal and child health. This study aimed to examine the influence of women's autonomy on unintended pregnancies including unwanted and mistimed pregnancies. Using the Indonesia Demographic and Health Survey (IDHS) 2017, this study analyzed 12,624 currently married women who had birth within five years preceding the survey. Women's autonomy was constructed from several variables related to women's decision on obtaining health care, visiting family, and spending large household purchase. The result of logistic regression analysis showed that women's autonomy affected significantly on unintended pregnancy after controlling other variables. However, it implied a negative correlation in which autonomous women were 1.3 more likely to experience unintended pregnancy than their counterparts. Both parity and birth interval showed the biggest influences on unintended pregnancy; the odds ratios were 2.7 and 3.1 respectively. Women who married at age 21 years and above, lived in rural areas and decided the number of children to have with husbands tended to have a lower risk facing an unintended pregnancy. Improving IEC and counseling about family planning and reproductive health is expected to increase couples' knowledge. Therefore, the decisions on the number of children and contraceptive use can be made jointly and unintended pregnancy will be prevented.

ABSTRAK

Kata kunci:

kehamilan tidak
diharapkan,
otonomi wanita,
keputusan wanita,
jarak kelahiran,
fertilitas

Kehamilan yang tidak diharapkan memiliki dampak negatif baik jangka pendek maupun jangka panjang kepada ibu dan anak. Studi ini bertujuan untuk melihat pengaruh otonomi wanita pada kejadian kehamilan tidak diharapkan (tidak diinginkan dan tidak tepat waktu). Data yang digunakan adalah Survei Demografi dan Kesehatan Indonesia (SDKI) 2017 dengan unit analisis wanita yang menikah dan melahirkan dalam lima tahun terakhir, yaitu sebanyak 12,624 wanita. Variabel otonomi dibentuk dari tiga indikator yang terdiri dari keputusan wanita dalam perawatan kesehatan, kunjungan keluarga dan pengeluaran rumah tangga terbesar. Hasil analisis regresi logistik menunjukkan bahwa otonomi wanita memiliki hubungan yang signifikan dengan kehamilan yang tidak diinginkan setelah dikontrol dengan variabel lainnya. Wanita dengan nilai otonomi tinggi berpeluang 1.3 kali lebih besar mengalami kejadian kehamilan tidak diharapkan daripada wanita dengan otonomi rendah. Variabel lainnya, seperti jumlah anak dan jarak kelahiran memiliki pengaruh terbesar pada kejadian kehamilan yang tidak diharapkan. Masing-masing variabel berpeluang 2.7 dan 3.1 kali lebih besar untuk kehamilan tidak diharapkan. Wanita yang menikah umur >21 tahun, tinggal di perdesaan dan sepakat dengan suami mereka tentang jumlah anak memiliki kecenderungan lebih rendah untuk mengalami kehamilan yang tidak diharapkan. Perlu adanya penguatan dalam KIE serta konseling bagi pasangan suami istri untuk mencapai kesepakatan dalam penggunaan kontrasepsi dan pembatasan jumlah anak agar tidak terjadi kehamilan tidak diharapkan.

INTRODUCTION

Unexpected pregnancies still happen all the time. The results of the 2017 Indonesia

Demographic and Health Survey (IDHS) showed the number of unwanted pregnancies was 15%, this figure has increased compared to the results of the same survey in 2012

Received in 18 February 2021 ; Reviewed in 27 July 2021 ; Accepted in 19 January 2022 ; p-ISSN 2302-707X - e-ISSN 2540-8828 ; DOI: <https://doi.org/10.20473/jbk.v11i2.2022.145-155> ; Cite this as : Naibaho MMP, Fajarningtiyas DN, Arifa RF, Pancanugraha A. Women's Autonomy and Unintended Pregnancy: An IDHS 2017 Data Analysis. J Biometrika dan Kependud [Internet]. 2022;12(2):145–155. Available from: <https://doi.org/10.20473/jbk.v11i2.2022.145-155>

(14%). Meanwhile, the number of unwanted pregnancies worldwide during 2015-2019 was 6%. The rate of unintended pregnancy in Indonesia is much higher than the world rate (1).

Many studies state that fertility and maternal health are closely related to women's autonomy. One strategy to increase the utilization of maternal health care is to increase women's autonomy and husband's involvement. Unexpected pregnancy generally describes the condition of women's reproductive health and shows how much autonomy women have in making decisions to have children, including determining when to have children (2).

In line with that, women's autonomy is also said to be able to influence decisions related to reproductive health, including the use of contraceptive methods (3). Women who are able to make household decisions are more likely to participate in family planning programs than women whose decisions are influenced by their partners (4). The results of other studies show that female autonomy has an effect on reducing the risk of unintended pregnancy (5).

Research on pregnancy is not expected to be important because the incidence of pregnancy is not expected to affect the health of mothers and children which indirectly contributes to the welfare of society in general. Preventing unwanted pregnancies means investing in the health of mothers and babies because as the incidence of unwanted pregnancies decreases, maternal and infant mortality rates also decrease, which will then be followed by improvements in maternal and child health. Thus, family welfare will also increase so that it can strengthen the country's economy (6). Research on unintended pregnancy in Indonesia has not been greatly done. Existing research generally analyzes the impact of unwanted pregnancy on health-maternal and child care, the impact on women's psychology, and factors related to unwanted pregnancy (7-10).

Through this study, it is hoped that it will be known whether women's autonomy is related to the incidence of unwanted pregnancy in Indonesia. This study also wants to know what socioeconomic and demographic factors contribute to unwanted pregnancies, because as is well-known, women's autonomy itself can also be influenced by socioeconomic and

demographic factors. However, due to the limited sample size, this study will combine the incidence of unwanted pregnancy with untimely pregnancy, and define it as an unwanted pregnancy.

METHODS

This study uses data from the Indonesia Demographic and Health Survey (IDHS) for the 2017 Indonesian Demographic and Health Survey (IDHS). The number of female respondents in the 2017 IDHS is 45,627 respondents. The unit of analysis of this study is married/living together women aged 15-49 years who have the last child aged between zero to 48 months, so that the total sample size is 12,624 respondents.

The dependent variable used in this study is the status of the last child's pregnancy. This last pregnancy status was grouped into wanted pregnancy and unwanted pregnancy, including untimely pregnancy (categorized as unwanted pregnancy).

Meanwhile, the variable of women's autonomy in the household is the main independent variable in this study. This variable was formed from a list of questions in the women at reproductive age or *Wanita Usia Subur* (WUS) module in the 2017 Indonesia Demographic and Health Survey (IDHS) questionnaire. The autonomy variable was formed from three questions, namely questions about healthcare decisions, decisions to visit family, and household spending decisions. If a woman makes the decision herself, it shows that she has autonomy/freedom in making decisions and then the question item will be given a value of 1, otherwise the question item will be given a value of zero. The value of each item on the three questions is summed and hereinafter referred to as the autonomy score. The weight of each decision item is considered the same because it makes it easier to calculate the autonomy score. Then, the autonomy scores were grouped into two, namely: low autonomy (score less than 2) and high autonomy (score more than or equal to 2).

Other independent variables used in this study include socioeconomic characteristics (women's education, women's working status, household economic status, area of residence, spouse's education, and working status) and fertility characteristics (couples' age at birth, age at first marriage),

number of live births, sex of children born, birth spacing, agreement on number of children, ever used contraception in the last 48 months, and knowledge of contraception. Furthermore, bivariate analysis was conducted to see the background of respondents based on pregnancy status. Multivariate analysis with logistic regression was used to see the relationship of women's autonomy and other characteristics to the incidence of unwanted pregnancy. All analyses used STATA 13 software.

RESULT

The results of this study consist of four tables. Table 1 and 2 present the background of the respondents in a bivariate manner. Furthermore, Table 3 and 4 present the results of a multivariate analysis that describes the relationship between socioeconomic background and fertility on pregnancy status. Table 1 shows that, out of the total sample, 16% of women at reproductive age, WUS, (15-49 years) admitted that their pregnancy was not expected. Uniquely, WUS whose

pregnancies were not expected were found to be more from high autonomy levels (20%) than low autonomy (15%), coming from secondary education and higher education at SMA/PT (16%), living in urban areas (18%), higher economic status (17%), working (16%) and women with jobless spouses who have a partner who does not work (24%).

Apart from socioeconomic characteristics, this study also looks at pregnancy status based on fertility characteristics of WUS. Table 2 shows the percentage who experience WUS with a birth age >35 years (30%), age at first marriage age (UKP) <21 years (17%), the number of children born alive (ALH) ≥ 3 (30%), with last birth interval <48 months (34%) reported having an unwanted pregnancy. Another interesting thing is that those who have good knowledge of contraception (17%) and have used contraception in the last 48 hours (16%) tend to experience unwanted pregnancies. Likewise, those who disagreed with their husbands about the number of children also experienced unwanted pregnancies (19%).

Table 1. Cross Tabulation between Socioeconomic Characteristics and Pregnancy Status, IDHS 2017

Socioeconomic Characteristics	Pregnancy Status (%)		n
	Pregnancy Expected	Pregnancy Not expected	
Residential area			
Urban	82.0	18.0	6,222
rural	86.2	13.8	6,402
Household economic status			
On	82.9	17.1	2,150
Intermediate	84.4	15.6	4,619
Lower	84.5	15.5	5,855
Women's autonomy			
Low	84.4	15.6	11,940
Tall	79.6	20.4	684
Women's education			
Senior High School/College	83.9	16.1	6,124
< high school	84.3	15.6	6,500
Women's working status			
Working	84.0	16.0	5,685
Doesn't work	84.2	15.8	6,939
Couple education			
Senior High School/College	83.9	16.1	6,328
< high school	84.4	15.6	6,253

Socioeconomic Characteristics	Pregnancy Status (%)		n
	Pregnancy Expected	Pregnancy Not expected	
Partner's working status			
Working	84.2	15.8	12,518
Doesn't work	75.6	24.4	106
Total	84.2	15.8	12,624

Source: Data processed

Table 2. Cross Tabulation between Fertility Characteristics and Pregnancy Status, 2017 IDHS

Characteristics	Expected Pregnancy (%)	Pregnancy Not expected (%)	n
Age of first marriage			
21 years old	83.4	16.64	7,668
> 21 years old	85.5	14.54	4,956
Childbirth age			
35 years old	86.6	13.37	10,656
> 35 years old	70.5	29.53	1,968
Number of children born alive			
< 3 children	91.0	9.0	7,996
3 children	69.7	30.3	4,628
Child gender			
Male	84.0	16.0	6,502
Female	84.4	15.6	6,122
Birth distance			
48 months	89.1	10.9	9,363
< 48 months	66.0	34.0	3,261
Contraceptive knowledge			
Good (min 8 types of contraception)	82.2	17.8	1,203
Not enough	84.4	15.6	11,421
Using contraception			
Yes	83.6	16.4	1,584
No	89.5	10.5	11,040
Number of children agreement			
Disagree	80.9	19.1	5,018
Agreed	86.2	13.8	7,606
Total	84.2	15.8	12,624

Source: Data processed

Regression analysis was performed on pregnancy status with 15 independent variables. The results of the analysis are presented in two tables (Table 3 and 4) with the aim of simplifying the presentation. The results of this study have a different direction from many studies conducted in developed countries. Based on the results of the multivariate analysis in Table 3, it can be seen that the autonomy variable, which

was initially thought to have a negative effect on the incidence of unwanted pregnancy, actually had a positive effect. This means that the higher the woman's autonomy, the greater the chance of having an unexpected pregnancy. Women who have high autonomy have a 1.32 times greater tendency to have an unwanted pregnancy compared to women who have low autonomy.

After controlling for other variables, autonomy has a significant effect on unwanted pregnancy. However, this variable is not a major factor in the risk of unwanted pregnancy.

The multivariate analysis also showed that, apart from autonomy, there were several predictors of the incidence of unwanted pregnancy, both in terms of socioeconomic characteristics and fertility characteristics. Other factors that influence the incidence of unwanted pregnancy are place of residence, education, spouse's working status, age at delivery, age at first marriage, age at first marriage, birth interval (birth interval), use of contraception (contraceptive methods use), and agreement on the number of children to have.

The variables of the last child's gender, wealth quintile and media exposure had no significant effect on unwanted pregnancy. It can be seen that the variables that have the greatest influence on unwanted pregnancies are the number of live births and the spacing of births. Women who have live births more than 3 times have a 2.6 times risk of having an unwanted pregnancy than those who have children born live less than 3. Likewise, women who have a history of giving birth less than 48 months will have a 3.1 times risk experienced an unexpected pregnancy compared to those with a history of more than 48 months apart (Tables 3 and 4).

Table 3. Relationship between Socioeconomic Characteristics and Risk of Unexpected Pregnancy, 2017 IDHS

Characteristics	OR	P
Residential area		
Urban	1	
Rural	0.67[0.59-0.75]	0.000
Household economic status		
On	1	
Intermediate	1.13[0.97-1.31]	0.122
Lower	1.09[0.92-1.29]	0.321
Women's autonomy		
Low	1	
Tall	1.32[1.07-1.63]	0.009
Women's education		
Senior High School/College	1	
< high school	0.76[0.67-0.87]	0.000
Women's working status		
Working	1	
Doesn't work	1.07[0.97-1.19]	0.199
Couple education		
Senior High School/College	1	
< high school	0.98[0.86-1.11]	0.738
Partner's working status		
Working	1	
Doesn't work	1.77[1.08-2.89]	0.024

Source: Data processed

DISCUSSION

The results of the analysis showed that unwanted pregnancy was significantly related to the area of residence, women's autonomy, education and working status of spouses, age at

first marriage, age at birth, live births, birth spacing, contraceptive use and agreement on the number of children. Then, in this section, each of the factors that are significantly associated with the risk of an unwanted pregnancy will be discussed.

Table 4. Relationship between Fertility Characteristics and Risk of Unexpected Pregnancy, 2017 IDHS

Characteristics	OR	P
Age of first marriage		
21 years old	1	
> 21 years old	0.73[0.65-0.82]	0.000
Childbirth age		
35 years old	1	
> 35 years old	1.77[1.55-2.02]	0.000
Number of children born alive		
< 3 children	1	
3 children	2.68[2.39-3.01]	0.000
Child gender		
Male	1	
Female	0.96[0.86-1.06]	0.383
Birth distance		
48 months	1	
< 48 months	3.11[2.79-3.46]	0.000
Contraceptive knowledge		
Good (min 8 types of alakon)	1	
Not enough	1.06[0.89-1.26]	0.528
Using contraception		
Yes	1	
No	1.84[1.54-2.20]	0.000
Number of children agreement		
Disagree	1	
Agreed	0.82[0.74-0.91]	0.000

Source: Data processed

Residential Area

The area where the respondent lives is significantly associated with the risk of an unexpected pregnancy. Women who live in urban areas are more likely to experience unwanted pregnancies than those who live in rural areas. These results are in line with research in Ecuador (11), in India (12), and in Nepal (13). A shift in the view of women living in metropolitan cities regarding the ideal number of fewer children, a more limited or narrow living space (place to live) and this high cost of living may be the cause of unwanted pregnancies (11).

Education

Based on education level, the study found that women with higher education were less likely to have an unwanted pregnancy. The results of this study are the same as various previous studies in Indonesia (9) as well as in countries such as India (14), Philippines (5), Japan (15), and

Bangladesh (16). Educated women are more aware of what they want. In addition, women with higher education typically have more control over sexual and reproductive health, desire fewer children than women with no education, thus making them more likely to classify pregnancies as untimely (9).

Couple's Working Status

The partner's working status and pregnancy are not expected to have a significant correlation with the odd ratio of husbands not working at 1.77. The results of this study are in line with the results of research in countries with a majority Muslim population such as Turkey (17,18) and Egypt (19). The possibility of insufficient husband's income influences men's decisions about pregnancy, which is generally the choice of men which also controls women's access to care, education and welfare. In addition, working husbands may have a higher level of reproductive health knowledge and

participate in social networks that are concerned and support family planning.

Women's Autonomy

Several previous studies have stated that the higher the value of a woman's autonomy, the lower the chance of an unwanted pregnancy (5,20,21). Meanwhile, the results of the logistic regression analysis in this study showed that the autonomy variable had an effect on the incidence of unwanted pregnancy but with a different direction of relationship from previous studies. Women who have high autonomy are actually 1.3 times more likely to experience unwanted pregnancies compared to women with low autonomy. This finding is in line with several research results in South Asian countries. The results of a study in Nepal show that female autonomy has a positive correlation with unwanted pregnancy (22). Research in Bangladesh states that women may have autonomy over household decisions, but not their reproductive decisions because husbands still play a major role in deciding these matters (23).

Age of First Marriage

The results of this study prove that delaying the age of marriage can reduce the risk of unwanted pregnancy. This study is in line with research in Ethiopia (20) and Japan (15). It is likely that those who marry young will be influenced by their husband, family and culture in determining the timing and planning of pregnancy (20).

Childbirth Age

Women who give birth over 35 years are more likely to experience unwanted pregnancies. This may be because older women often feel infertile and lack knowledge about modern contraceptive methods that are safe for their age and tend to choose natural contraception, resulting in unwanted pregnancies. This is also in line with the research (24,25).

Number of Children Born Alive

Women with lower parity have a lower risk of having an unwanted pregnancy. It is possible that women with more children feel that their pregnancies will be burdensome

compared to those with fewer children (20). In addition, perhaps the experience of spending, the physical and psychological stress of childbearing may also be the reason women who have many children do not wish to get pregnant.

Birth Distance

The results of this study indicate that birth spacing has the greatest influence on the incidence of unexpected pregnancy. Women who have a birth spacing of less than four years have a three times greater chance of experiencing unexpected pregnancy compared to women with a birth spacing of four years or more. This is in line with a study conducted in Egypt where women whose last pregnancy spaced their births less than one year were more likely to have an untimely pregnancy than those who spaced more than one year (23).

Contraceptive Use

This study also shows a different pattern from the results of research in general, where women who have used contraceptive methods (contraceptive methods) in the last 48 months compared to those who use other than 48 months before the survey are 1.8 times more likely to have an unwanted pregnancy than expected. This possibility occurs for reasons of side effects and health in the use of contraception, so many women decide to stop (drop out) using contraception so that pregnancy occurs. Another possibility is that this can happen because the exact timing of contraceptive use is not known, so that the use of contraception may only be started after previously experiencing an unexpected pregnancy/birth (5,9,11). The findings of this study are in line with research which states that women who have used contraceptive methods are more free to regulate their reproductive behavior, so that women tend to be negligent and the impact can lead to unwanted pregnancies (26). Other studies also mention the possibility of contraceptive failure and the low quality of reproductive health services can also result in unwanted pregnancies; this condition in Indonesia may occur even though it is not directly conveyed (3). Women's autonomy is not always an intermediate variable between women's education and the use of contraception because it is possible that,

in every decision-making, women also consider experiences in using contraception. Women who have high authority in decision-making do not necessarily use contraception even though they are highly educated. Another study states that one of the factors that influence the decision to use contraception is past experience (27).

Number of Children Agreement

Then, women who agree with their husbands about the number of children they want have a 0.82 times lower tendency to experience unwanted pregnancies than those who disagree. Some research results say that if there is no agreement between husband and wife about the number of children it will have the opportunity to cause unwanted pregnancies. The couple's disagreement on the number of children makes the couple less likely to try to prevent pregnancy by using contraception so that an unwanted pregnancy can occur (23,28). Another study states that husband and wife communication about family planning will affect fertility restrictions (29). Joint decision-making is also a stronger determinant of contraceptive use than women's alone (30).

This study has advantages including using data sources from the 2017 IDHS which is a national-scale survey so that the number of samples used in this study is quite large. Meanwhile, on the other hand, because the unit of analysis in this study is only women of childbearing age who have their last child aged 0-48 months at the time of the survey, the prevalence and description of the incidence of pregnancy is not expected to only apply to women with these criteria. Other weaknesses of this study include the fact that the 2017 Indonesia Demographic and Health Survey (IDHS) IDHS is a cross-sectional study so that the analysis carried out is only limited to the relationship between the variables being discussed without being able to know the cause of the relationship and the reasons. The data collected are also retrospective or based on events that have been carried out in the past so that in this study it is possible to have data or information bias due to the limited memory of respondents in answering questions whose events have passed (recall bias), especially on behavior related to fertility and decision-

making that usually occurs, based solely on the respondent's memory. In addition, although the measurement is actually very complex because it takes into account the role of women from various dimensions, by considering the availability of data, the measurement of women's autonomy variables in this study is only on decisions related to healthcare, visiting family, and household spending decisions.

CONCLUSIONS AND SUGGESTIONS

Conclusion

Although it shows a different pattern from many other studies, this study proves that there is an influence between women's autonomy and the incidence of unwanted pregnancy. The higher the woman's autonomy, the chance of having an unwanted pregnancy actually increases. In addition to women's autonomy, place of residence, women's education, partner's employment status, age at first marriage, age at birth, number of live births, birth spacing, contraceptive use, and agreed number of children were also significantly associated with unwanted pregnancies.

Suggestion

Based on this study, it is necessary to increase the provision of communication, information, and education (KIE) Communication, Information, and Education (CIE) about reproductive health and family planning for couples of childbearing age that are comprehensive and balanced between husband and wife. Through IEC or family planning counseling, it is hoped that a good attitude will emerge in making decisions related to reproductive health.

ACKNOWLEDGMENT

The authors would like to thank ICF International's DHS Program and the National Population and Family Planning Agency for granting permission to access and use the 2017 IDHS data so that this research could be carried out. The author would also like to thank all those who have contributed to the achievement of this article.

REFERENCES

1. Bearak J, Popinchalk A, Ganatra B, Moller A, Tunçalp Ö, Beavin C, et al. Unintended Pregnancy and Abortion by Income, Region, and the Legal Status of Abortion: Estimates from A Comprehensive Model for 1990-2019. *Lancet Glob Heal* [Internet]. 2020;8(9):e1152–e1161. Available from: [https://doi.org/10.1016/S2214-109X\(20\)30315-6](https://doi.org/10.1016/S2214-109X(20)30315-6)
2. Thapa DK, Niehof A. Women's Autonomy and Husband's Involvement in Maternal Health Care in Nepal. *Soc Sci Med* [Internet]. 2013;93(September):1–10. Available from: <http://dx.doi.org/10.1016/j.socscimed.2013.06.003>
3. Rahman M. Women's Autonomy and Unintended Pregnancy Among Currently Pregnant Women in Bangladesh. *Matern Child Health J* [Internet]. 2012;16(6):1206–1214. Available from: <https://doi.org/10.1007/s10995-011-0897-3>
4. Teshome FT, Hailu AG, Teklehaymanot AN. Prevalence of Unintended Pregnancy and Associated Factors Among Married Pregnant Women in Ganji Woreda, West Wollega Oromia Region, Ethiopia. *Sci J Public Heal* [Internet]. 2014;2(2):92–101. Available from: <https://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=251&doi=10.11648/j.sjph.20140202.18>
5. Abada T, Tenkorang EY. Women's Autonomy and Unintended Pregnancies in the Philippines. *J Biosoc Sci* [Internet]. 2012;44(6):703–718. Available from: <https://doi.org/10.1017/S0021932012000120>
6. Singh A, Singh A, Mahapatra B. The Consequences of Unintended Pregnancy for Maternal and Child Health in Rural India: Evidence from Prospective Data. *Matern Child Health J* [Internet]. 2013;17(April):493–500. Available from: <https://doi.org/10.1007/s10995-012-1023-x>
7. Anggraini K, Wratsangka R, Bantas K, Fikawati S. Faktor-Faktor yang Berhubungan dengan Kehamilan Tidak Diinginkan di Indonesia. *Promot J Kesehat Masy* [Internet]. 2018;8(1):27–37. Available from: <https://doi.org/10.31934/promotif.v8i1.227>
8. Hardee K, Eggleston E, Wong EL, Irwanto, Hull TH. Unintended Pregnancy and Women's Psychological Well-Being in Indonesia. *J Biosoc Sci* [Internet]. 2004;36(5):617–626. Available from: <https://doi.org/10.1017/S0021932003006321>
9. Jaeni N, McDonald P, Utomo ID. Determinants of Unintended Pregnancy Among Ever-Married Women in Indonesia: An Analysis of the 2007 IDHS [Internet]. Canberra; 2009. Available from: <https://catalog.ihnsn.org/citations/5016>
10. Saptarini I, Suparmi S. Determinan Kehamilan Tidak Diinginkan di Indonesia (Analisis Data Sekunder Riskedas 2013). *J Kesehat Reproduksi* [Internet]. 2016;7(1):15–24. Available from: <https://doi.org/10.22435/kespro.v7i1.5096.15-24>
11. Eggleston E. Determinants of Unintended Pregnancy Among Women in Ecuador. *Int Fam Plan Perspect* [Internet]. 1999;25(1):27–33. Available from: <https://doi.org/10.2307/2991899>
12. Dixit P, Ram F, Dwivedi LK. Determinants of Unwanted Pregnancies in India Using Matched Case-control Designs. *BMC Pregnancy Childbirth* [Internet]. 2012;12:1–12. Available from: <https://doi.org/10.1186/1471-2393-12-84>
13. Tebekaw Y, Aemro B, Teller C. Prevalence and Determinants of Unintended Childbirth in Ethiopia. *BMC Pregnancy Childbirth* [Internet]. 2014;14(1):1–9. Available from: <https://doi.org/10.1186/1471-2393-14-326>
14. Kumar M, Jyoti M, Aruna P, Poddar A, Dhariwal V, Shailendra K. Unintended Pregnancy among Low Income Urban Married Women in India. *J Obstet Gynecol India*

- [Internet]. 2012 Feb;62(1):52–56. Available from: <https://doi.org/10.1007/s13224-012-0157-5>
15. Goto A, Yasumura S, Reich MR, Fukao A. Factors Associated with Unintended Pregnancy in Yamagata, Japan. *Soc Sci Med* [Internet]. 2002;54(7):1065–1079. Available from: [https://doi.org/10.1016/S0277-9536\(01\)00081-8](https://doi.org/10.1016/S0277-9536(01)00081-8)
 16. Bishwajit G, Tang S, Yaya S, Feng Z. Unmet Need for Contraception and Its Association with Unintended Pregnancy in Bangladesh. *BMC Pregnancy Childbirth* [Internet]. 2017 Jun;17(1):1–9. Available from: <https://doi.org/10.1186/s12884-017-1379-4>
 17. Erol N, Durusoy R, Ergin I, Dner B, Çiçekliolu M. Unintended Pregnancy and Prenatal Care: A Study from A Maternity Hospital in Turkey. *Eur J Contracept Reprod Heal Care* [Internet]. 2010;15(4):290–300. Available from: <https://doi.org/10.3109/13625187.2010.500424>
 18. Savaş N, İnandı T, Arslan E, Peker E, Durmaz E, Erdem M, et al. Unintended Pregnancies, Induced Abortions and Risk Factors in Women Admitted to Hospitals due to Birth or Abortion in Hatay. *Turkish J Public Heal* [Internet]. 2017;15(2):85–95. Available from: <https://doi.org/10.20518/tjph.341158>
 19. Aly Nor S, Abel – raof Amasha H, Salah Salama N, Abdel- rahman Osman Abdel-haleem S. Prevalence of Unintended Pregnancy and Associated Factors in Port-Said City. *Port Said Sci J Nurs* [Internet]. 2019;6(1):101–120. Available from: <https://doi.org/10.21608/pssjn.2019.34039>
 20. Geda NR, Lako TK. A Population Based Study on Unintended Pregnancy among Married Women in A District in Southern Ethiopia. *J Geogr Reg Plan* [Internet]. 2011;4(7):417–427. Available from: https://academicjournals.org/article/article1381843891_Geda_and_Lako.pdf
 21. Ali SA, Ali SA, Khuwaja NS. Determinants of Unintended Pregnancy Among Women of Reproductive Age in Developing Countries: A Narrative Review. *J Midwifery Reprod Heal* [Internet]. 2016;4(1):513–521. Available from: <https://doi.org/10.22038/jmrh.2016.6206>
 22. Acharya P, Gautam R, Aro AR. Factors Influencing Mistimed and Unwanted Pregnancies among Nepali Women. *J Biosoc Sci* [Internet]. 2016;48:249–266. Available from: <https://doi.org/10.1017/S002193201500073>
 23. Mohamed EAEB, Hamed AF, Yousef FM., Ahmed EA. Prevalence, Determinants, and Outcomes of Unintended Pregnancy in Sohag District, Egypt. *J Egypt Public Health Assoc* [Internet]. 2019;94(1):1–9. Available from: <https://doi.org/10.1186/s42506-019-0014-9>
 24. Beyene GA. Prevalence of Unintended Pregnancy and Associated Factors Among Pregnant Mothers in Jimma Town, Southwest Ethiopia: A Cross Sectional Study. *Contracept Reprod Med* [Internet]. 2019 Dec;4(1):1–8. Available from: <https://doi.org/10.1186/s40834-019-0090-4>
 25. Yusof M, Abdul Samad A, Omar M, Ahmad NA. Unplanned Pregnancy and Its Associated Factors. *Glob J Health Sci* [Internet]. 2018;10(8):132–142. Available from: <https://doi.org/10.5539/gjhs.v10n8p132>
 26. Grindlay K, Dako-Gyeke P, D. Ngo T, Eva G, Gobah L, T. Reiger S, et al. Contraceptive Use and Unintended Pregnancy among Young Women and Men in Accra, Ghana. *PLoS One* [Internet]. 2018 Jul;13(8):1–13. Available from: <https://doi.org/10.1371/journal.pone.0201663>
 27. Jones J, Mosher W, Daniels K. Current Contraceptive Use in the United States, 2006–2010, and Changes in Patterns of Use Since 1995 [Internet]. Maryland; 2012. Available from: <https://pubmed.ncbi.nlm.nih.gov/24988814/>

28. Gipson JD, Koenig MA, Hindin MJ. The Effects of Unintended Pregnancy on Infant, Child, and Parental Health: A Review of the Literature. *Stud Fam Plann* [Internet]. 2008;39(1):18–38. Available from: <https://doi.org/10.1111/j.1728-4465.2008.00148.x>
29. Link CF. Spousal Communication and Contraceptive Use in Rural Nepal: An Event History Analysis. *Stud Fam Plann* [Internet]. 2011;42(2):83–92. Available from:
30. Hameed W, Azmat SK, Ali M, Sheikh MI, Abbas G, Temmerman M, et al. Women’s Empowerment and Contraceptive Use: The Role of Independent versus Couples’ Decision-Making, from A Lower Middle Income Country Perspective. *PLoS One* [Internet]. 2014;9(8):1–9. Available from: <https://doi.org/10.1371/journal.pone.0104633>