

## Association between Marital Status and the Outcome of Teenage Pregnancy: A Retrospective Review in Year 2009-2012 in Hospital Ampang

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### ABSTRACT

Teenage pregnancy is associated with maternal and neonatal morbidity. Some postulate that it is due to biological immaturity, while others postulate that it is due to inadequate antenatal care. The objective of this study is to compare the maternal and neonatal outcome between married and unmarried teenage mothers. A retrospective study was conducted from 2009 to 2012, where mothers aged below 20 year old were included. Maternal and neonatal outcome was assessed. A total of 750 patients aged below 20 year old delivered at Hospital Ampang. The trend of teenage pregnancy decreased from 3.1% in 2009 to 2.2% in 2012. A total of 578 (77.1%) mothers were married, while 172 (22.9%) were unmarried. Being unmarried was significantly associated with unbooked ( $p < 0.001$ ), preterm birth ( $p = 0.00468$ ), and lower birth weight ( $p < 0.0001$ , and unpaired T-Test with 95% CI -0.2607 to -0.0933). However there is no significant difference in the number of mothers with hypertensive disease ( $p = 0.88428$ ), diabetes in pregnancy ( $p = 0.39602$ ), mode of delivery ( $p = 0.055$  vaginal delivery,  $p = 0.4419$  caesarean section, and  $p = 0.9097$  instrumental deliveries) and NICU admission ( $p = 0.3779$ ) between the two groups. Unmarried teenage pregnancy is associated with a lack of antenatal care, preterm birth, and lower birth weight compared to their married counterpart.

*Keywords:* Marital status, pregnancy outcome, teenage pregnancy

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### INTRODUCTION

Teenage pregnancy is associated with poor maternal and perinatal outcomes (UNFPA, 2015). The increasing trend of teenage pregnancy has been attributed to several factors. Improved health and nutritional status has led to a decrease in the age of obtaining menarche (Wyshack, 1982). It has been

reported that the decline in the age of starting menarche is as much as 2 to 3 months per decade since the 19th century, making an overall decline of three years (Wyshack, 1982). Similarly, the age of sexual debut has decreased over the years as well. In the US, one half of high school students have had sexual intercourse in their lifetime, with approximately 7% reported to having sexual encounters before the age of 13 years old (Centers for Disease Control and Prevention, 2001). For most women in Asia, the onset of sexual activity coincides with marriage. However, with the increasing age one gets married at and changes in socio-cultural norms, there is an increasing number of young women commencing sexual activity before marriage (UNFPA, 2015). In China for example, 19% of unmarried women aged 15-24 years old were reported to be sexually active (Zheng et al., 2010). In Malaysia, a survey was conducted among Malaysian youth in 2009 and it was reported that 27.2% had their first sexual debut at the age of 15-17 (Low, 2009). Lee et al. found that the mean age of sexual debut was 15 (Lee, Chen, Lee, & Kaur, 2006). In another survey done in Malaysia in 2010 by Anwar et al. among 1139 students aged between 15 to 20 years, 13% were reported to have had sex (Anwar, Sulaiman, Khan, & Ahmadi, 2010). The usage of contraception has been poor among teenagers (Anwar et al., 2010). A survey on youth sexuality reported that 90% of in-school females admitted to not taking any precautions against pregnancy (Chiam, 1996). Zulkifli et al. (2000) added that only 37% of teenagers used birth control, although majority of them had knowledge regarding contraception. Meanwhile, World Health Organisation (WHO) reported that only 54% of girls and 49% of boys used a contraceptive method (WHO, 2011).

The age of marriage has been increasing over the years, while more teenagers become pregnant. Teenage pregnancy has been associated with preterm birth, low birth weight and adverse maternal outcomes (Gilbert, 2004). However, poor maternal outcomes have been suggested as not merely due to biological immaturity, but also other factors such as inadequate antenatal follow up, being unmarried, poor support, and low socioeconomic status (McAnarney, 1987). Mahfouz stated that teenage pregnancy is not a risk if there is adequate antenatal care received by the teenage mothers (Mahfouz, El Said, Erian, & Hamid, 1995). Adequate care is influenced by many factors including the presence of social support.

Although an increasing number of Malaysian women are delaying their marriage, it has been a cultural norm to be married as a teenager. This retrospective review, conducted at Hospital Ampang from 2009 to 2012, was intended to evaluate the impacts of being married compared to being single mother on the outcome of pregnancy.

## **METHOD**

Based on the annual birth census, teenage mothers were identified according to their age at the time of delivery in Hospital Ampang. Their hospital number was used to trace their history using a computer database, and this was done by medical officers who had been trained in collecting the data. Those aged below 20 years old were included in this study. Mothers aged 20 years and above at time of delivery, and those who had pre-existing medical conditions were excluded. The demographic data included the marital status, parity, and ethnicity, and

their booking status, as well as any antenatal co-morbidity diagnosed such as hypertensive disease in pregnancy and diabetes in pregnancy. The outcome can be divided into maternal and neonatal outcomes. Maternal outcome is based on the antenatal complications such as diabetes and hypertension disease in pregnancy, the mode of delivery (spontaneous vaginal delivery, instrumental vaginal delivery or caesarean section), and post-partum complications such as postpartum haemorrhage, as well as third and fourth degree vaginal wall tears, were identified. The neonatal outcomes include the week of gestation at the time of delivery, birth weight, Apgar score and NICU admission. The data were analysed using Chi-squared test and T- test with  $p < 0.05$  to be significant.

## RESULTS

### Demographic Data

For age, 5% (38/749) aged < 16, followed by 22.2% (166/749) aged 16-17, and 72.8% (545/749) aged 18-19. The youngest age was noted to be thirteen years old. The prevalence of teenage pregnancy had decreased over the years, i.e. from 3.1% in 2009 to 2.2% in 2012, as shown in Table 1.

Table 1  
*Percentage of teenage pregnancy from year 2009 to 2012*

Year	Total No. of Delivery	Teenage Mothers	Percentage (%)
2009	6485	200	3.1
2010	6832	189	2.8
2011	7449	173	2.3
2012	8302	186	2.2

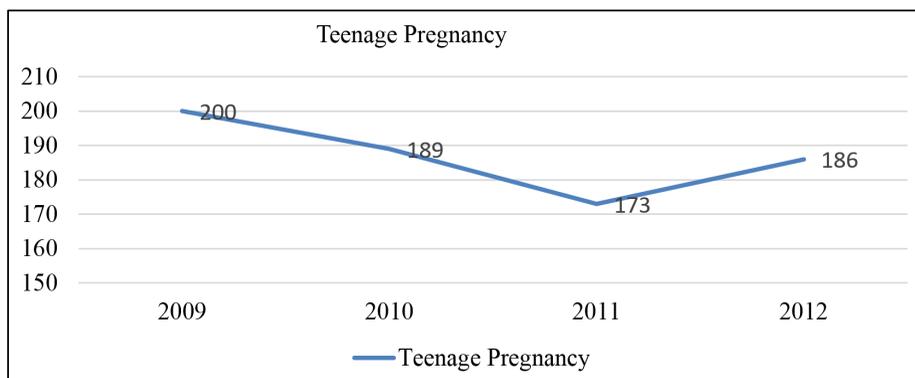


Figure 1. The trend of teenage pregnancy from 2009 to 2012

Further break-ups on the number of teenage pregnancy showed that majority of the teenage mothers aged between 18 to 19 years old (Table 2).

Table 2  
*The age group among teenage pregnancy*

Year	<16 years	16- 17	18- 19	Total
2009	9	40	151	200
2010	9	44	136	189
2011	10	25	138	173
2012	9	54	123	186
Total	37	163	548	570

Meanwhile, 83.1% (623/750) of the teenage mothers had their first pregnancy; 17% of the married teenage mothers have had their second pregnancy before the age of 20, and 5.2% of the unmarried mothers also had their second pregnancy. Out of the total number of teenage mothers, 76.8% (575/749) of them were married. The highest percentage (45.9%) of unmarried teenage mothers was among those aged below 16 years (17/37), followed by aged 16-17 years, which was 39.2% (64/163), and 18-19 years which was 16.8% (92/548). There were a total of 750 teenage deliveries during the studied period, out of which, 578/750 (77.1%) patients were married, while 172/750 (22.9%) mothers were single. The age distribution of the married and unmarried marital status is shown in Table 3.

Table 3  
*Age ethnicity and parity among married and unmarried marital status*

Age group/ Marital Status	Married	Unmarried
<16 years Old	22	17
16- 17	104	63
18- 19	452	92
Total	578	172
Ethnicity/ Marital Status		
Malays	274 (47.4%)	137 (79.65%)
Chinese	52 (8.99%)	9 (5.2%)
Indians	18 (3.1%)	6 (3.49%)
Indonesian	37 (6.4%)	7 (4.07%)
Myanmar	159 (27.5%)	5 (2.9%)
Others	38 (6.57%)	8 (4.65%)
Total	578	172
Parity		
1 <sup>st</sup> pregnancy	460 (79.6%)	163 (94.8%)
2 <sup>nd</sup> pregnancy	98 (17.0%)	9 (5.2%)
3 <sup>rd</sup> pregnancy	18 (3.1%)	-
4 <sup>th</sup> pregnancy	2 (0.3%)	-
Total	578	172

Malays made up the majority of both married and unmarried teenage mothers. There were 15 unbooked pregnancies among the married teenage mothers, and 59 unbooked pregnancies among the unmarried teenage mothers. Being unmarried is therefore significantly associated with unbooked ( $p < 0.001$ ). Table 4 shows the booking status among the teenage mothers.

Table 4  
*Booking status among teenage mothers*

Booking/ Marital Status	Married	Unmarried
Booked	563 (97.4%)	113 (65.7%)
Unbooked	15 (2.6%)	59 (34.3%)
Total	578	172
P value of unbooked pregnancy	p<0.001	

### Maternal Outcome

The mode of delivery amongst the married and unmarried teenage mothers is shown in Table 5. There is no significant difference in the mode of delivery ( $p = 0.055$  vaginal delivery,  $p = 0.4419$  caesarean section and  $p = 0.9097$  instrumental deliveries) between the two categories. However, foetal distress was the most common cause of caesarean section, followed by poor progress, and breech presentation, as shown in Table 6.

Table 7 shows the maternal outcomes between married and unmarried teenage mothers. There was no significant difference in the number of occurrences of hypertensive disease ( $p = 0.88428$ ), and diabetes in pregnancy ( $p = 0.39602$ ) among the two groups.

Table 5  
*Booking status among teenage mothers*

Mode of Delivery/Marital Status	Married	Unmarried
Vaginal Delivery	488 (84.4%)	142 (82.6%)
Caesarean Section	55 (9.5%)	20 (11.6%)
Instrumental Delivery	35 (6.1%)	10 (5.8%)
Total	578	172

Table 6  
*Indication for Caesarean section*

Indication for Caesarean Section	Married	Unmarried
Foetal distress	21 (38.2%)	5 (25%)
Poor progress	11 (2%)	1(5.0%)
Breech	91 (6.4%)	7(35%)
Others (pre-eclampsia, macrosomia, chorioamnionitis)	14 (25.4%)	7(35%)
Total	55	20

Table 7  
*Maternal outcome*

Maternal Outcome	Married	Unmarried
Hypertensive disease in pregnancy	25 (4.3%)	7 (4.1%)
Diabetes in pregnancy	8 (1.4%)	1(0.58%)
Post- partum haemorrhage	1 (0.17%)	0
3 <sup>rd</sup> degree tear	1(0.17%)	0

### Neonatal Outcome

Table 8 summarises the neonatal outcome. There was a significant difference in the number of in preterm delivery with the unmarried mothers noted to have a higher number of incidences compared to married mothers ( $p= 0.00468$ ). The unmarried mothers had a significantly lower birth weight ( $p< 0.0001$ ). However, there was no significant difference in the NICU admission between the two groups ( $p= 0.3779$ ). One neonatal death was reported among the unmarried teenage pregnancy in view of extreme prematurity at 31 week with severe intrauterine growth restrictions with a birth weight of 600 g.

Table 8  
*Neonatal outcome*

Outcome	Married	Unmarried
Preterm delivery	66/578 (11.4%)	34/172(19.8%)
P value in the difference of preterm labour	$p= 0.00468$	
NICU admission	88/578 (15.2%)	31/172 (18.0%)
P value for NICU admission	$p= 0.3779$	
Average weight	2.877g (SD 0.707)	2.7g (SD 0.513)
P value on birth weight	$p<0.0001$ unpaired (T- Test with 95% CI -0.2607 to -0.0933)	

### DISCUSSION

From 2009 to 2012, the prevalence of teenage pregnancy was found to be decreasing. This finding is in line with the earlier findings in other South Asian countries, where the greatest reduction has been documented to be as high as 40% (UNPD, 2013). This might be due to the fact that there is an increasing awareness among teenagers regarding precautions against pregnancy, either by using a barrier method such as a condom, or contraceptive pills (Zulkifli & Low, 2000). At the same time, sex education has been introduced in secondary schools in Malaysia in order to combat both sexual transmitted infections and unwanted teenage pregnancies. The National Population and Family Board, in their survey, found that although only 2.4% of school students admitted that they were having premarital sexual intercourse, 20.7% of the respondents stated that they knew friends who had had premarital sex. Meanwhile, 21.2% knew of friends who were pregnant, and 10% knew friends who had had abortions (National Population and Family Development Board, 1998). Nevertheless, one should be

cautious in interpreting such findings as the figures may not be a true reflection of the actual situation. Some teenage mothers may have opted not to disclose their pregnancy to medical professionals. They may choose to terminate their pregnancy or conceal the pregnancy, leading to infanticide and newborn abandonment.

Malays made up the majority of teenage mothers, followed by the ethnic group from Myanmar. This can be explained due to the fact that majority of the patients receiving care in the antenatal and delivery are Malays. Traditionally, it was culturally accepted for the Malays and Myanmar to get married and pregnant before the age of 20. This could be reflected by the finding that almost 77% of them were married. Moreover, the study was conducted at a public hospital, so it may not be a true reflection of the ethnicity as other races may have opted to receive their care from private healthcare professionals. Being married may indicate that the pregnancy is wanted and that the mother is well supported. This can be reflected by the finding that 97.4% of the married teenage pregnancies had their pregnancy booked. There were, in contrast, a high percentage of unbooked pregnancies among unmarried teenage mothers. From the demographic data, it can be noted that there were only 2.26% unbooked pregnancies among the married mothers, as compared to 34% of unbooked pregnancies among the unmarried teenage mothers. Booking an antenatal appointment is one of the greatest reductions and one of the most important appointments during the antenatal period. Being an unbooked pregnancy may also suggest that there is inadequate antenatal care throughout the pregnancy, and this can impact on the pregnancy outcome. Mahfouz et al. (1995) suggested that a poor outcome of pregnancy among teenage mothers may not just be due to biological immaturity, but could also be due to other environmental factors such as a lack of antenatal care as a result of poor support and a lower economic status.

Marital status is regarded as a very important status among pregnant women in Malaysia. It is still a taboo from the cultural and religious points of view for a girl or a woman to be pregnant when there are still single. Being married will determine the type of support received by the pregnant mothers, as the pregnancy will be much awaited by their partner and family members. On the other hand, unmarried teenage mothers may not be well accepted by their partner, family, school, and the society as a whole. In contrast, it will further put them in a very difficult situation, not just in the form of support they need, but also from the financial point of view. They are often ashamed with their pregnancy, causing them to stop going to school or continuing their education, and not receiving the appropriate medical attention due to embarrassment and limited financial capacity. They would only seek medical attention when emergency situations arise, i.e. bleeding or when they are in labour. Their situation may also make them liable to be taken advantage of including giving away their babies due to financial constraints and pressure by the society. Their future may be bleak, as many may not be able to continue their education and pursue their desired career.

In our study, the caesarean section rate was noted to be less than 15%. There was no significant difference between unmarried and married teenage mothers. The incidence of less than 15% is below the overall caesarean section rate in Hospital Ampang, which is around 20% to 25%. The main indication for the caesarean section among the teenage mothers was foetal distress, which is similar to the overall most common indication for the caesarean section in Hospital Ampang.

The preterm delivery was noted to be higher among unmarried compared to married teenage mothers. Similarly, the birth weight for unmarried teenage mothers was noted to be lower compared to those who were married. There were more babies admitted to NICU among the unmarried teenage mothers compared to those who were married. These neonatal outcomes could be attributed to environmental circumstances because being unmarried put teenage mother into a disadvantage condition with lack of support and financial capacity to ensure adequate nutrition and antenatal care support.

This study has some limitations. Being a retrospective study, important data may be lost. These include the social and economic background, whereby the study did not explore the economic status and kind of support the mothers had during and after their pregnancy. Thus, further studies are needed in order to determine the support needed from the healthcare point of view, as well as sources of funding. Further studies should also look into steps that need to be taken to minimise the number of unwanted pregnancies, especially those affecting young women at a tender age that could potentially affect their future.

## CONCLUSION

Being married at the age below 20 years old is still a cultural norm in Malaysia. Hence, the majority of teenage mothers were married. Nevertheless, the number of teenage pregnancy is decreasing over the years, and this is probably due to the increase in marital age and higher awareness of unprotected sexual intercourse in preventing sexually transmitted infection and unwanted pregnancy among the teenagers. Being unmarried is associated with poor antenatal care, preterm birth, lower birth weight, and higher percentage of NICU admission compared to their married counterpart.

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## REFERENCES

- Anwar, M. S. S. (2010). Awareness of school students on sexually transmitted infections (STIs) and their sexual behavior: a cross-sectional study conducted in Pulau Pinang, Malaysia. *BMC Public Health*, 10(47).
- Centers for Disease Control and Prevention. (2001). Youth risk behavior surveillance-United States, 2001. *Morbidity and Mortality Weekly Report* 2002. *Morbidity and Mortality Weekly Report*, 51, 1–64.
- Chiam, H. K. (1996). *Report on Youth Sexuality Survey*. Selangor, Malaysia: Federation of Family Planning Association.
- Gilbert, W. J. D. (2004). Birth outcomes in teenage pregnancies. *J Matern Fetal Neonatal Med.*, 16, 265–70.

- Lee, L. K., Chen, P. C., Lee, K. K., & Kaur, J. (2006). Premarital sexual intercourse among adolescents in Malaysia: a cross-sectional Malaysian school survey. *Singapore Med. J.*, 47(6), 476-481.
- Low, W. Y. (2009). Malaysian youth sexuality: issues and challenges. *Journal of the University of Malaya Medical Centre (JUMMEC)*, 3-14.
- Mahfouz, A. A. E. S. (1995). Teenage pregnancy: are teenagers a high risk group? *Eur J Obstet Gynecol Reprod. Biol.*, 59, 17–20.
- McAnarney, E. R. (1987). Young maternal age and adverse neonatal outcome. *Am J. Dis Child*, 141, 1053–59.
- National Population and Family Development Board. (1998). *Report of the National Study on Reproductive Health and Sexuality 1994/1995*. Kuala Lumpur: National Population and Family Development Board.
- UNFPA, U. W. (2015). *Sexual and reproductive health of young people in Asia and the Pacific. A Review on Issues, Policies and Programmes*. Bangkok: United Nations Population Funds.
- UNPD. (2013). *Adolescent fertility since the International Conference on Population and Development in Cairo*. New York: UNPD.
- WHO. (2011). *Health of adolescents in Malaysia: World Health Organisation, Western Pacific Region*. WHO.
- Wyshack, G. F. R. (1982). Evidence for a secular trend in age of menarche. *New England Journal of Medicine*, 306, 1033–35.
- Zheng, X. Y., Chen, G., Han, Y. L., Chen, H., Lin, T., & Qiu, Y. (2010). Survey of youth access to reproductive health in China. *Population and Development*, 16(3), 2-16.
- Zulkifli S. N. & Low, W. Y. (2000). Sexual health education for youths – A Malaysian experience. *Asia-Pacific J. Publ. Health*, S58-S66.

