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Profiles of women presenting for abortions in Singapore at the National University Hospital: focus on married women

Xiang Wen Gregory Pek[1], MB BCh BAO, MRCS, Wei Shan Teoh[2], MBBS,
Duoduo Wu[2], MBBS, Kuldip Singh[1], MBBS, FRCOG

[1]Department of Obstetrics and Gynaecology, National University Hospital, [2]Yong Loo Lin School of Medicine, National University of Singapore, Singapore

Correspondence: Prof Kuldip Singh, Senior Consultant, Department of Obstetrics and Gynaecology, National University Hospital, 5 Lower Kent Ridge Road, Singapore 119074. obgkuldi@nus.edu.sg

ABSTRACT

Introduction: In this study, we aimed to identify the differences in sociodemographic variables and reasons for termination of pregnancy (TOP) between married women and single/divorced women. We hope that this study can guide future policies and interventions to reduce the incidence of unsupported pregnancies in this profile group of women.

Methods: We retrospectively evaluated the sociodemographic data of 802 women who underwent an abortion for social reasons at our institution in Singapore from January 2016 to September 2018. We compared the sociodemographic variables, reasons for and methods of TOP between married and single/divorced women.

Results: We analysed data from 524 married women (65.3%) and 278 single/divorced women (34.7%). Married women were more likely to be of older age (29.5 years vs. 24.5 years, $p < 0.001$), had more living children and higher educational qualifications. The top two cited reason for abortions among married women were having enough children (42.0%) and the inability to afford another child (18.7%). Multivariate analysis showed that women aged > 19 years and having more living children were independently associated with recurrent TOPs. Having a tertiary education was noted to be associated with less recurrent TOPs.

Conclusion: The most common reasons married women cited for having TOP include having enough children and the lack of financial capacity to afford another child. Recommendations to support women ought to be personalised and comprehensive in addressing their needs rather than offering a standardised support method. Greater emphasis should be placed on post-TOP family planning counselling to reduce repeated TOP.

Keywords: induced, pregnancy, unwanted abortion

INTRODUCTION

The latest global study on abortions, conducted between 2010 and 2014, revealed that 73% of abortions were sought by married women. Within this period, the estimated annual abortion rate was 36% for all married women and 25% for unmarried women worldwide.[1] This phenomenon where the majority of abortions are sought by married women has also been observed in previous local abortion studies.

Available sources of nationwide data revealed that the percentage of abortions performed on married women were 94% in 1970, 75% in the 1980s and 67.7% in 1993.[2] However, despite a significant proportion of the number of abortions being conducted on married women since 1970, there is an absence of research studies specifically focusing on abortion among married Singaporean women.

This study represents a pioneering effort in providing insights into the current situation of induced abortions among married women in Singapore. We analysed induced abortions in our tertiary institution over a three-year period, specifically focusing on married women. The sociodemographic variables and reasons for termination were compared with unmarried women. We hope that this study can guide future policies and interventions to reduce the incidence of unwanted pregnancies in this subgroup of women.

METHODS

We included all women who sought termination of pregnancy (TOP) from January 2016 to September 2018 in National University Hospital, Singapore, in our study. A total of 136 women who underwent TOP because of medical reasons, including maternal high risk, rubella infection, fetal anomalies and other medical reasons were excluded from the comparison analyses as the reason for TOP was not of social nature.

All women who wish to undergo abortion in Singapore are required by legal legislation to attend compulsory TOP counselling sessions where the risks and complications of the procedure are explained to them. Patient demographics and obstetric information including ethnicity, marital status, educational qualification, number of previous abortions, number of living children, reason for TOP, method of TOP and gestation term when TOP was conducted were collected from the patients in this study when they presented for TOP counselling. The information was collected through an interview with trained TOP counsellors. We stratified the patients into married and unmarried. The 'unmarried' category also included patients who were divorced and widowed. Patient demographics between married and unmarried women were compared to compare the difference in the reasons for TOP. We also analysed the risk factors associated with mid-trimester abortions up to 24-week gestation in all women who underwent TOP in this study period.

All statistical analyses were carried out using R Studio (RStudio: integrated Development for R, Boston, MA, USA). A p-value < 0.05 was determined as statistically significant. Categorical variables are shown as frequencies and percentages, whereas continuous variables are shown as mean and standard deviation if normally distributed. If they are non-normally distributed, they are expressed as median and interquartile range (IQR). Sociodemographic variables between married and unmarried women were compared using Mann-Whitney U test for continuous variables, whereas categorical variables were compared using chi-square test. Two multivariate analyses to identify the factors that predicted second-trimester TOP and recurrent TOP were performed using backward multiple logistic regression analysis. Recurrent TOP was defined as having more than one previous TOP.

RESULTS

From January 2016 to September 2018, a total of 12,352 live births and 938 TOPs were recorded at our institution. The percentage of TOP as a proportion of live births was 7.6% (Table I). A chi-square test of independence was performed to examine the relationship between ethnicity and the TOP rate. The relationship between these variables was significant ($p < 0.001$), showed that TOP rate was highest among Indians and lowest among women of ethnicities other than Chinese, Malay or Indian. In total, 136 (14.5%) patients who underwent TOP because of medical reasons were excluded from the analysis. The sociodemographic variables of patients who underwent TOP because of social reasons is summarised in Table II. There were 524 (65.3%) married and 278 unmarried (34.7%) patients, with the mean ages of presentation for TOP being 32 years and 24 years, respectively ($p < 0.001$). Of all married women, 46.2% of women had two children, and 21.9% of women had only one existing child. 59.4% of married women were working, and the majority (62.6%) had completed their tertiary or A level education. The most commonly cited reasons for TOP for married women were having enough children (42.0%) and not being able to afford another child (18.7%). Multivariate analysis in Table III shows that age > 19 years and being of Malay ethnicity were independently associated with late abortions (second trimester). Table III also shows that age > 19 years and having a greater number of living children were independently associated with recurrent TOP, whereas having a tertiary education was noted as a protective factor against recurrent TOP.

Table I. Number of live births, termination of pregnancies and percentage of TOP over live births from January 2016 to September 2018.

Race	No. of live births	Number of TOP	TOP rate (%)	
			Against total live births	Against total gravid women (%)*
Malays	3,486	275	7.9	7.3
Chinese	4,640	315	6.8	6.4
Indians	1,938	262	13.5	11.9
Others	1,903	86	4.5	4.3
Not reported	385	0	–	–
Total	12,352	938	7.6	7.1

*A chi-square test of independence showed that the relationship between race and TOP rates was statistically significant ($p < 0.001$). *Total number of gravid women is the sum of all live births and all abortions. TOP: termination of pregnancy*

Table II. Sociodemographic information of all 802 patients who underwent termination of pregnancy in the institution, stratified by marital status into unmarried (n = 278) and married (n = 524) groups.

Parameters	No. (%)/mean ± standard deviation			p-value
	Overall (n = 802)	Unmarried (n = 278)	Married (n = 524)	
Age > 19 yr	745 (92.9)	224 (86.6)	521 (99.4)	< 0.001
Age (yr)	29.53 ± 6.59	24.48 ± 5.63	32.21 ± 5.37	< 0.001
Marital status				< 0.001
Divorced	45 (5.6)	45 (16.2)	0 (0)	
Married	524 (65.3)	0 (0)	524 (100.0)	
Single	233 (29.1)	233 (83.8)	0 (0)	
Ethnicity				< 0.001
Chinese	254 (31.7)	111 (39.9)	143 (27.3)	
Indian	223 (27.8)	44 (15.8)	179 (34.2)	
Malay	265 (33.0)	113 (40.6)	152 (29.0)	
Others	60 (7.5)	10 (3.6)	50 (9.5)	
Educational level				< 0.001
Primary	32 (4.0)	14 (5.0)	18 (3.4)	
Secondary/vocational	325 (40.5)	147 (52.9)	178 (34.0)	
Tertiary/A level	445 (55.5)	117 (42.1)	328 (62.6)	
Number of living children				< 0.001
0	246 (30.7)	210 (75.5)	36 (6.9)	
1	154 (19.2)	39 (14.0)	115 (21.9)	
2	255 (31.8)	13 (4.7)	242 (46.2)	
3	84 (10.5)	9 (3.2)	75 (14.3)	
4	45 (5.6)	6 (2.2)	39 (7.4)	
5	9 (1.1)	1 (0.4)	8 (1.5)	
6	8 (1.0)	0 (0.0)	8 (1.5)	
7	1 (0.1)	0 (0.0)	1 (0.2)	
Unemployed/not working	332 (41.4)	119 (42.8)	213 (40.6)	0.607

Had previous TOP	36.8	28.4	33.9	0.020
Number of previous TOP				0.204
0	530 (66.1)	199 (71.6)	331 (63.2)	
1	193 (24.1)	54 (19.4)	139 (26.5)	
2	58 (7.2)	19 (6.8)	39 (7.4)	
3	11 (1.4)	3 (1.1)	8 (1.5)	
4	2 (0.2)	1 (0.4)	1 (0.2)	
5	5 (0.6)	1 (0.4)	4 (0.8)	
9	1 (0.1)	1 (0.4)	0 (0.0)	
10	2 (0.2)	0 (0.0)	2 (0.4)	
Number of previous TOP†	0 [0, 10]	0 [0, 9]	0 [0, 10]	0.024
TOP at 2nd trimester	125 (15.6)	58 (20.9)	67 (12.8)	0.004
Reason for TOP				< 0.001
Enough children	228 (28.4)	8 (2.9)	220 (42.0)	
Unmarried/divorced/widowed	162 (20.2)	149 (53.6)	13 (2.5)	
Cannot afford another child	120 (15.0)	22 (7.9)	98 (18.7)	
Too close to last pregnancy	88 (11.0)	3 (1.1)	85 (16.2)	
Not ready to start a family	84 (10.5)	71 (25.5)	13 (2.5)	
Contraceptive failure	14 (1.7)	3 (1.1)	11 (2.1)	
Others	106 (13.2)	22 (7.9)	84 (16.0)	
Method of TOP				0.012
Drug and surgical procedure	52 (6.5)	24 (8.6)	28 (5.3)	
Solely by drug	235 (29.3)	94 (33.8)	141 (26.9)	
Solely by surgical procedure	515 (64.2)	160 (57.6)	355 (67.7)	

†Data presented as median (range). TOP: termination of pregnancy

Table III. Multivariate analysis using multiple logistic regression showing factors associated with late trimester abortion and recurrent abortion.

Variable	Multivariate analysis			
	Late trimester abortion*		Recurrent abortion†	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Age > 19 yr	0.33 (0.18–0.63)	< 0.001	2.80 (1.31–6.73)	0.012
Ethnicity				
Chinese	Ref.	Ref.	–	–
Indian	1.22 (0.70–2.14)	0.476	–	–
Malay	2.15 (1.33–3.55)	0.002	–	–
Others	1.68 (0.73–3.61)	0.196	–	–
Educational level				
Primary	–	–	ref	ref
Secondary/vocational	–	–	0.87 (0.39–1.91)	0.720
Tertiary	–	–	0.34 (0.15–0.75)	0.008
Number of living children	–	–	1.44 (1.27–1.63)	< 0.001

*Adjusted for marital status, educational level, number of living children, occupation and number of previous terminations of pregnancy. †Adjusted for marital status, race, occupation and trimester at termination. CI: confidence interval; ref: reference group

DISCUSSION

On comparing our results to a similar study in our institution by Lim et al[3] from 2005 to 2009, we found a drop in TOP rates as a proportion of total gravid women. TOP rates dropped from 12.0% to 6.4% among Chinese, from 14.6% to 7.3% among Malays, from 17.6% to 11.9% among Indians and from 12.1% to 4.3% among other races. This fall in TOP rates could be attributed to an increased awareness about family planning over the years. It could also be because of an increase in women who seek abortion from private institutions.

The proportions of Malay and Indian women who presented for abortions as a percentage of total live births at our institution were higher than that for the Chinese (Table I). Moreover, being ethnically Malay was observed to be significantly associated with late abortions (second trimester) on multivariate analysis. This was a finding similar to the two previous research papers published on the profiles of women presenting for abortions.[3,4] Lim et al found that the proportion of contraception usage is significantly lower in Malay women than in Chinese women.[3] It was explained that the lower rate of contraception usage among the Malays could have increased the number of unwanted pregnancies, resulting in more abortions. In addition, Lim et al proposed that it is probable that many Chinese women may be undergoing the TOP elsewhere, such as in private clinics and hospitals.[3] However, because we do not have the data of all women who present for abortions nationwide, we are unable to comment on whether there is truly a significantly higher proportion of Indian and Malay women seeking TOP as a percentage of total live births nationwide.

We have a special interest in understanding the sociodemographic characteristics of married women, as no specific studies have been conducted in this group of women. Marital status appears to be a significant predictor of TOP. This is because married and single women have different unmet needs when making the decision to abort. Understanding the

characteristics of the women who presents for abortion is important in helping policymakers in providing targeted support.

The married women were mostly in their early 30s, with 2–3 living children. The average age at which Singaporean women marry is between 25 and 29 years.[5] This can explain why the married women who sought TOP were mostly in their early 30s. The reasons cited by married women for abortion are often related to specific issues that married couples face— finding two children to be sufficient and lack of financial ability to afford another child. A large proportion of married women cited having enough children as the reason for abortion. The median number of living children in those who cited this reason was two (interquartile range: 2–4). This could be because of the mentality that having two children is enough or that they are overextended with the current number of children. More research should be conducted to analyse the causes of this perception to design policies to provide targeted support. The second reason cited by married women was the inability to afford another child. Of those who cited this reason, 40% were unemployed at the time of TOP. Notably, between single and married women, there was no significant difference in the proportion of women who were unemployed at the time of TOP. This shows that financial ability was a stronger contributing factor to TOP for married women. A higher proportion of single women cited the reasons for TOP as being not married or not ready to start a family than the inability to financially support another child.

The top two reasons cited by single women for undergoing TOP were being single and not ready to start a family. This could be because of the strong traditional family and cultural value of having children only after marriage. It can also be because of a perceived lack of familial support for the child and the woman, should the woman not have a partner or the intention to build a family.

Multivariate analysis showed that a younger age was associated with late trimester abortion. Younger women may seek abortion later because of a lack of knowledge regarding

the channels to seek help and a general social stigma against abortions. Further qualitative studies are warranted to look at teenage pregnancy to characterise the proper reasons and difficulties these women face at seeking TOP early.

Notably, multivariate analysis showed that adult women (aged > 19 years) and having more living children were independently associated with recurrent TOP. By contrast, having a tertiary education was noted to be inversely associated with recurrent TOP (Table III). These findings suggest that the family planning component of abortion counselling may not have been effective in convincing this group of women to utilise effective contraception. More studies should be conducted to identify reasons for recurrent TOPs and the effectiveness of the abortion counselling in reducing recurrent TOPs.

This study was not without limitations. This is a single-centre retrospective study conducted at our institution in Singapore. Hence, the distribution and demographics of women presenting for TOP and live deliveries may not be a true representation of Singapore's population. We do not have access to the information and data of women presenting to other public healthcare institutions, as well as private hospitals. There may also be the presence of interviewee bias, as the information was recorded purely on the basis of the women's own interpretation and perceptions of the questionnaire. Although a counsellor was present to assist with the questionnaire assessment, we cannot exclude the possibility that the interviewee's perceptions had an effect on their responses, especially for the section on reasons for TOP.

In conclusion, the most common reasons married women cited for having TOP include having enough children and the lack of financial capacity to afford another child. Better family planning and contraceptive counselling should be instituted to reduce the incidence of unwanted pregnancies. Recommendations to support women ought to be personalised and comprehensive in addressing their needs. Rather than offering a standardised support method,

recommendations should be based on a multifaceted approach that provides the women with

more perceivable alternatives outside of abortion.

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