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Profiles of women presenting for abortions in Singapore: focus on teenage abortions and late abortions

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ABSTRACT

Objective: Teenage abortions predispose women to adverse pregnancy outcomes in subsequent pregnancies such as anemia, stillbirths, preterm deliveries and low birth weight babies. We aim to profile the women presenting for abortions in our institution and determine risk factors for late presentation for abortions.

Study design: In this retrospective cohort study, all women who underwent an abortion at the National University Hospital, Singapore, from 2005 to 2009 were recruited. Data was obtained from a prepared questionnaire during the mandatory pre-abortion counseling sessions. Profiles of women aged <20 years were compared with those ≥20 years old using Chi-square test if the assumptions for Chi-square test were met; otherwise, Fisher's exact test was carried out. Logistic regression was used to investigate the risk factors for second trimester termination of pregnancy.

Results: 2109 women presented for induced abortions, of which 1998 had single abortion throughout the course of the study. The mean age of women with single abortion was 29.1 years (sd 7). In the group of women with single abortion, 182 (9.1%) were teenage abortions. In contrast to women ≥20 years of age, pregnant teenagers were more likely not to have used any contraception (51.1% vs. 25.2%) and more likely to present late for abortions (39.6% vs. 15.9%). Other risk factors for late presentation for abortions include Malay ethnicity, singlehood, nulliparity and lack of prior usage of contraception.

Conclusion: Teenagers are more likely to have no prior contraceptive usage and to present late for abortions. Lack of proper sexual education and awareness of contraceptive measures may have a major contributory factor to such a trend in teenage abortions. Recommendations have been made in order to curb this societal problem.

1. Introduction

Abortion has been legalized in Singapore by the Abortion Act of 1970. Although instituted to protect women against the dangers of illegal abortions, this act was associated with a liberalization of attitudes toward abortion [1]. The Ministry of Health in Singapore has strict guidelines on termination of pregnancy. The main requirements of the New Abortion Act of 1974 are that the pregnancy should not exceed 24 weeks gestation except in cases where the abortion is immediately necessary to save the life or prevent grave injury to the pregnant woman [2]. There was a dramatic increase in the number of abortions performed beginning in 1974 and peaking in 1985, where 35% of all pregnancies were terminated [3]. The introduction of mandatory abortion counseling in 1986 resulted in a decline in the absolute number of abortions in 1993, with 24.6% of pregnancies terminated [3].

Abortions may lead to undesirable complications such as uterine hemorrhage, perforation and anaesthesia-related complications [4]. Frequency of complications increases with gestational age, particularly after 14 weeks in the second trimester [5]. In particular, there is an increased risk of adverse outcomes in teenage pregnancies. Pregnancies in teenagers have increased risk of complications such as anemia [6,7], stillbirths, preterm deliveries and low birth weights in subsequent pregnancies [8]. Hence, there is a keen research focus on teenage abortions and late abortions.

The aims of this study were to characterise the profiles of teenage abortions and compare them to the general population as well as to identify risk factors for second trimester terminations. This would serve as a basis for further interventions as necessary.

2. Materials and methods

This retrospective study was approved by the National Health Group Domain-Specific Review Board of the hospital and

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conducted on women who presented in the period from January 1, 2005 through December 31, 2009. We included all women who sought abortions (up to 24 weeks gestation) at the National University Hospital in Singapore. All women requesting abortions were required by government legislation to be counseled on the procedure, its risks and complications before termination of pregnancy could take place.

Sociodemographic and obstetric data including ethnic groups, educational level, activity status, marital status, parity, history of previous abortions, gestation period, contraceptive usage and reason for termination was collected from these women through an interview with the abortion counselors and subsequently entered into individual abortion counseling forms. Data entry was performed using Microsoft Excel. Teenage pregnancies are defined as pregnancies occurring in females aged below 20 years of age, hence characteristics of women in the teenage age group (<20 years) were compared to those ≥20 years to find out if there are any significant differences in their profiles. This is similar to the teenage age range used commonly [9]. Racial proportions of women with single abortion out of all gravid women attending NUH (deliveries plus abortions) in the same period were derived by comparing the number of women with only single abortion in our study to the total number of gravid women (including women with both single and multiple abortions in our study and women who underwent deliveries). We also studied the risk factors associated with mid-trimester abortions up to 24 weeks gestation. Analysis was carried out only on the group of women with single abortion throughout the study period so as to prevent erroneous multiple analysis of the profile of a single woman with multiple abortion records. Data of women aged <20 years were then compared with those ≥20 years old.

3. Results

During the period of study, 14,199 gravid women comprising deliveries and abortions were attended to at NUH and a total of 2109 women presented for induced abortions. Of these women, 1998 (94.7%) women had only one record of abortion in the entire study period, while 111 (5.3%) had more than one record of abortion during this period. Out of the 111 women, 76 (68.5%) had 1 repeat abortion, 25 (22.5%) had 2 repeat abortions and 10 (9%) had 3 or more repeat abortions. The subsequent study analysis will be based on the group of 1998 women who had only one record of abortion in the entire 5-year study period.

To determine whether abortion rates were related to ethnicity, we compared racial proportions of women with single abortion out of all gravid women attending NUH (deliveries plus abortions) in the same period. Of the 5531 gravid Chinese women, 12.0% had single abortion (Table 1). The proportions of Malay and Indian women who had single abortion were significantly higher compared with Chinese women respectively ($p < 0.001$). The percentage of Indian women who had single abortion was also higher compared with Malay women ($p = 0.012$).

The mean age of presentation was 29.1 years (sd 7; range 13.6–47.2 years). 48.6% of the women completed secondary education while 45.7% had a tertiary education. 5.7% of the women completed only primary education. Married women made up 66.4% of the study population. Women without a married partner made up the remaining 33.6%. Nulliparous women made up 32.9% of the study population. The majority (81.9%) of the abortions were performed during the first trimester and the rest (19.1%) were performed during the second trimester.

Table 1
Ethnic distribution of women undergoing abortions in NUH (2005–2009).

Race	Gravid women (deliveries plus abortions) $N = 14,199$	Women with 1 abortion (% of gravid women) $n = 1998$
Chinese	5531	663 (12.0%)
Malay	4966	727 (14.6%)
Indians	2922	514 (17.6%)
Others	780	94 (12.1%)

The reasons for termination of pregnancy were mainly socio-economical (86.8%). Being single, widowed or divorced (32.1%) was the most commonly cited reason, followed by having enough children (24.7%), financial issues (11.9%), current pregnancy being too close to last pregnancy (11.9%) and lastly couples not ready to start a family or for another child (6.2%). Besides socioeconomical reasons, other reasons for termination include fetal anomalies or medical reasons (5.7%), advanced maternal age (2.0%) and contraceptive failure (1.5%). In our population sample, 72.4% used some form of contraception. Of those who used contraception, 77.5% practised up to the time of pregnancy while the rest discontinued before pregnancy. For those who practised up to the time of pregnancy, the contraception was only discontinued when the couple was aware of the current pregnancy, while in the latter group, contraception was discontinued prior to knowledge of any pregnancy. The most popular contraceptive method used in this study population was the condom (54.3%), followed by oral contraceptive pills (11.1%), rhythm method (6.8%) and intra-uterine contraceptive device (4.9%). Other methods include hormonal injections and subcutaneous implants insertion.

Subanalysis of women <20 years and ≥20 years are portrayed in Table 2. In this study, 182 (9.1%) women who presented for an abortion at our hospital were <20 years of age. There was a higher percentage (13.6%; 99/727) of Malay women who were in the category of age <20 years as compared to the Chinese (9.4%; 62/663) and Indian (3.1%; 16/514) women. However these proportions were statistically significant only when comparing the Malay and the Indian women ($p < 0.001$). Women who presented during the second trimester of termination of pregnancy made up 39.6% of the group <20 years compared to 15.9% for the rest of the population ($p < 0.001$). Women with prior experience of abortion made up 14.8% of women <20 years as compared with 32.5% those aged ≥20 years ($p < 0.001$). A study of the pre-pregnancy termination contraceptive usage showed that 51.1% of women <20 years of age did not have any prior use of contraception, as compared to 25.2% for women ≥20 years of age ($p < 0.001$).

Multivariate logistic regression analysis revealed that age, ethnicity, marital status, activity status, prior contraceptive usage, prior abortions and parity were important risk factors of late termination of pregnancy in the second trimester (Table 3). There was no statistical significance for educational level for women ($p = 0.879$), hence it is not deemed to be an important risk factor for second trimester termination of pregnancy.

4. Comment

The study has highlighted an area of urgent concern whereby there is a marked increase in the number of cases of abortions over the past decade. In a previous study reported by Singh et al. [10] focusing on a similar group of subjects, a total of 1370 cases (range 218–352) were noted in the period from 1996 through 2000. In contrast, there were a total of 2230 cases (range 413–482) noted in the period from 2005 to 2009, about 1.6 times the number in the previous study. This represented 15.7% of all cases of abortions and deliveries in NUH between 2005 and 2009. This portrays an increasing trend of abortions in our institution and the need for more effective programmes to be implemented in order to curb the continuing rise. A limitation of our study is that women with single record of abortion at NUH from 2005 to 2009 do not necessarily