

# Women's sexuality after termination of pregnancy in Hong Kong Chinese

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## Summary

**Objective:** Our aim is to determine sexuality after termination of pregnancy (TOP) in Hong Kong Chinese.

**Design:** This was a prospective study using self-administered questionnaires given before and eight weeks after abortion.

**Subjects:** Women over age 18 years old requesting TOP were invited to participate in the study during the period 6 December 2005 to 28 March 2006.

**Main outcome measures:** Sexual function, couple relationship and psychological well-being like depression and post-traumatic stress disorder (PTSD) were assessed. Contraception was also reviewed.

**Results:** No significant change in the number of women who presented with sexual dysfunctions before and after abortion. However, women reported subjective decrease in sexual functions after TOP, ranging from 9.8% for those with increased vaginal pain to 24.5% for those with decreased sexual desire. Majority of them (74.8%) suffered from at least moderate degree of post-traumatic stress symptoms and 10.2% had symptoms suggestive of the presence of a PTSD. Significant associations were seen in subjective decrease of sexual functions with post-traumatic stress symptoms after termination of pregnancy. On the other hand, 41.6% felt less depressed after abortion. There was no significant change in couple relationship after abortion.

**Conclusion:** Termination of pregnancy did not cause sexual dysfunctions. However, significant proportion of women did suffer from decreased sexual functions subjectively which may be due to stress related to unplanned pregnancy or the TOP. The abortion itself did not cause depression and women who had completed family were less depressed after abortion. Post-traumatic stress was prevalent in those having abortion and the symptoms were associated with the subjective decrease in sexual functions.

**Keywords:** women's sexuality, couple relationship, psychological well-being, termination of pregnancy, local anaesthetics

## 摘要

**目的:** 研究香港的中國婦女在人工流產後的性能力。

**設計:** 預期性研究。以自行回答問卷方式在手術前及術後八星期作出評估。

**對象:** 2005年12月6日至2006年3月28日期間, 年滿18歲要求人工流產的女士被邀請參加是次研究。

**主要測量內容:** 評估性功能、婚姻關係、心理狀況如抑鬱及創傷後壓力症候群, 檢討避孕方法。

**結果:** 在手術前和手術後的性障礙人數沒有顯著變化, 但有女士匯報手術後感到性功能減退, 由9.8%的性行為時陰道痛楚至24.5%的性慾下降。大部分(74.8%)患有至少中度創傷後壓力徵狀, 而10.2%可能已出現創傷後壓力症候群。於人工流產後性功能減退和創傷後壓力徵狀是有明顯相關性。在另一方面, 41.6%卻在流產後感到抑鬱有所舒緩。而婚姻關係則沒有顯著改變。

**結論:** 人工流產並不會引起性功能障礙。但有部分女士會感到性功能減退; 這可能是由意外懷孕或人工流產所導致的心理壓力引起。人工流產本身並不會引起抑鬱。經已完成生育的婦女, 在流產後會有較少的情緒低落。流產後創傷壓力顯著存在, 而且徵狀和性功能減退有關連性。

**主要詞彙:** 女士性能力、婚姻生活、心理健康、人工流產、局部麻醉藥

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## Introduction

Sexuality after termination of pregnancy had never been evaluated in Chinese. Only four English studies were found discussing similar concern. One of them was a review of non-English studies<sup>1</sup> while others were descriptive studies.<sup>2-4</sup> These four studies were surgical abortions under general anaesthesia.

Boesen<sup>2</sup> found that 15.3% women reported diminished sexual desire and 6% reported diminished orgasmic ability compared to pre-pregnancy level. Bianchi<sup>3</sup> carried out a prospective study on 103 women undergoing induced abortion by vacuum aspiration and found that 31% of the women presented at least one sexual dysfunction. This sexual dysfunction might be explained by anxiety and depression following TOP. Another study by Bianchi<sup>4</sup> found that one third had sexual dysfunctions. He also found that women undergoing abortion had significantly more conflicts in their partnerships. Separation occurred in about one-quarter of all couples.<sup>1</sup>

Sex has long been a taboo in Chinese with strong cultural heritage. Chinese seldom express their feelings on sex even amongst couples. Women in particular are not expected to derive pleasure from sex. Sex education is still insufficient in Chinese society and therefore old folk beliefs prevail. Many Chinese people obtain sexual knowledge from informal sources. Those with sexual dysfunctions will attribute their symptoms to some somatoform disorders and use herbal or folk medicines as remedies. Therefore sexuality in Chinese differs from the West as it is influenced by the traditional culture, insufficient sex education, copious old folk beliefs and somatization.

The present study is novel as it evaluates the sexuality after TOP among Hong Kong Chinese, the psychological well-being and the couple relationship after abortion. Depression and post-traumatic stress disorder (PTSD) were the dimensions studied as psychological well-being. Sexual dysfunctions pre-pregnancy and post-abortion together with self-ratings on subjective changes in sexual functions were assessed. The association of psychological well-being with sexual functions was investigated.

## Methods

### Subject recruitment

All women over the age of 18 who received termination of pregnancy by suction and evacuation in the Family Planning Association of Hong Kong (FPAHK) during the period from 6 December 2005 to 28 March 2006 were invited to join the study. The Family Planning Association is a subvented organization in Hong Kong providing sexual and reproductive health services including safe abortion. Surgical abortion is performed under local anaesthesia. Those separated from their partners, being victims of sexual assault and non-Chinese were excluded. After written consent was sought, the participant completed a self-administered questionnaire before operation. The post-abortion questionnaires were given during the follow-up at 8th week in six birth control (BC) clinics and three youth health care centers (YHCC) of FPAHK.

### Questionnaire

The pre-abortion questionnaire consisted of the following components: 1) Socio-demographic and basic clinical data, 2) Pre-pregnancy sexual dysfunctions, 3) Couple relationship and 4) Psychological well-being. The post-abortion questionnaire collected data on: 1) Changes of marital status, sexual partner, abortion complications, 2) Psychological well-being, 3) Couple relationship, 4) Post-abortion sexual dysfunctions and subjective rating of changes in sexual functions and 5) Contraception status.

Sexual dysfunctions were assessed by ten questions. These questions were about: 1) Satisfaction on sexual desire, 2) Orgasm, 3) Presence of vaginal pain and vaginal dryness, 4) Satisfaction on sexual life, 5) Subjective view on partner's satisfaction of sexual life and satisfaction of sex with or without penile penetration during sex and 6) Frequency of sex with or without penile penetration in a month was assessed by a three-point scale (<4/month, 4-8/month, >8/month). These were assessed in both pre- and post-abortion questionnaires. Self-rated changes in sexual function were assessed in the post-abortion questionnaires using a three-point scale (decreased, no change and increased).

Couple relationship was assessed by the validated Chinese Marital Comparison Level Index (C-MCLI)<sup>5,6</sup> and the Chinese Kansas Marital Satisfaction Scale (C-KMS)<sup>7,8</sup> in both questionnaires. Descriptors



were slightly changed to fit in the study. C-MCLI measured one's perception of the extent to which marital relationship matched one's expectation to areas involving commitment of spouse, time spent together, amounts of sexual activities and relational equity etc. Three questions in C-KMS were satisfactions on marital life, her husband as a spouse and their relationship. The scores were categorized into satisfactory and less satisfactory relationship.

Psychological well-being focused on depression and post-traumatic stress. Depression was assessed by Center for Epidemiological Studies Depression Scale (CES-D). This 20 items self-report scale measured the depressive symptoms during the past week. It incorporated the main symptoms of depression and was derived from five validated depression scales including the Beck Depression Inventory.<sup>9</sup> It had been validated in community, primary care and Chinese populations.<sup>10,11</sup> The scores were grouped into 'not indicative of depression', 'indicative of mild depression' and 'indicative of major depression'. Women also completed the validated 22-items Chinese Impact of event scale-revised version (CIES-R)<sup>12,13</sup> in order to determine the presence of possible psychological trauma. It consisted of 3 domains: the intrusion, avoidance, and hyperarousal subscales. It paralleled the DSM-IV criteria for PTSD. The patient had to rate how much she was distressed in the past week on a five-point scale. There was no official cut-off points. However, scoring based on previous studies indicated that a mean subscale score of 2, representing a moderate level of distress, was the appropriate cut-off point.<sup>13-15</sup> A total score of 24 or above detected post-traumatic stress disorder with 70% sensitivity and specificity.<sup>16,17</sup>

There were quite a number of questionnaires for participants to complete but they were given the right to withdraw from the study at any time with the assurance that this would not affect the services they were to receive. An information sheet on counselling services available for emotional problem and marital relationship was given in case her emotion was stirred up after filling the questionnaire. The study was approved by the Ethics Committee of The Family Planning Association of Hong Kong.

### *Statistical analysis*

Statistical analysis was performed using SPSS for Windows version 11.5 software (SPSS, Chicago, IL,

USA). All completed questionnaires were included for analysis. Wilcoxon Signed Ranks Test for paired samples was used to compare difference in frequency counts for categorical variables and non-parametric continuous variables such as CES-D, C-KMS and C-MCLI score. Mann-Whitney U test was used to compare the difference of CIES-R in subgroup analysis between YHCC and BC clients. Bivariate analysis for associations was tested by Chi-square test and Fisher's Exact Test.

## Results

During the 3-months study period, there were 822 eligible subjects. A total of 661 women agreed to participate, yielding a recruitment rate of 80.4%. 322 women came back for follow up and filled the post-abortion questionnaires. Forty-eight subjects were excluded either because of incompletely filled questionnaires or followed up before 7th week post-abortion. Only 274 questionnaires were suitable for analysis. The attrition rate was 141%.

### *Subject characteristic*

The demographic characteristic was shown in **Table 1**. The mean age of the participants was 28.9 years old. During the study period, the mean age of all women attending FPAHK for abortion was 29.4 years old and 13.5% were undergraduates. There was no significant difference in demographic characteristics between our subjects and the whole group of women attending TOP during the period. The mean time of follow up was 8 3/7 weeks.

### *Abortion complications*

Sixty-five women (24.5%) experienced vaginal bleeding and eight of them had abdominal pain beyond two weeks after TOP. Only one required repeat operation for incomplete abortion. Thirteen women (4.7%) required antibiotics.

### *Couple relationship*

There was no significant change in the marital status or sexual partner after TOP. There were 62.5% women living with a partner, either married (52.6%) or cohabitated (9.9%). Nearly half of the subjects (50.4%) reported satisfactory couple relationships and the mean scores of C-KMS and C-MCLI were approximated to the

**Table 1: Demographic characteristics of subjects included in the analysis**

	N=274 (%)		N=274 (%)
<b>1. Age</b>		<b>6. Education level</b>	
18-27	134 (48.9)	Illiterate	0 (0)
28-36	77 (28.1)	Primary	12 (4.4)
37-45	63 (23)	Secondary	226 (82.5)
<b>2. Employment status</b>		Under-graduate	34 (12.4)
Unemployed	13 (4.7)	Post-graduate	2 (0.7)
Housewife	69 (25.2)	<b>7. Smoking</b>	
Full time	141 (51.5)	Yes	63 (23)
Part time	21 (7.7)	No	211 (77)
Student	30 (10.9)	<b>8. Previous induced abortion</b>	
<b>3. Marital status</b>		0	92 (33.6)
Single	96 (35.0)	1	99 (36.1)
Cohabitation	27 (9.9)	2	57 (20.8)
Married	144 (52.6)	3	22 (8.0)
Separated	4 (1.5)	4	3 (1.1)
Divorced	3 (1.1)	5	1 (0.4)
<b>4. Change of marital status after TOP</b>		<b>9. Reasons of TOP</b>	
No change	270 (98.5)	Unstable relationship	17 (6.2)
Cohabitation to married	1 (0.36)	Social and economic reason	112 (40.9)
Single to married	1 (0.36)	Continuing study or job	27 (9.9)
Married to divorced	1 (0.36)	Advanced age	23 (8.4)
Separated to divorced	1 (0.36)	Completed family	81 (29.6)
Change in sexual partner	8 (2.9)	Others	14 (5.1)
<b>5. Unplanned pregnancy</b>		<b>10. Hesitation in determining TOP</b>	
Yes	268 (97.8)	Yes	84 (30.7)
No	6 (2.2)	No	190 (69.3)

mean scores of Chinese.<sup>8,6</sup> Couple relationship had no significant difference after abortion.

### Sex resumption and contraceptive used after TOP

There was no association between sex resumption with prolonged vaginal bleeding after TOP. Other abortion complications were too few to test for significance of association. Most of the women (89.4%) resumed sex at 8<sup>th</sup> week post-abortion. The main contraceptive used was shown in **Table 2**. There were 96% women reported using reliable contraceptives after TOP compared to 73% before abortion ( $Z=-5.586$ ,  $P=0.000$ ). 23.2% changed to more reliable methods, 73.9% continued their previous methods and 2.9% just changed their contraceptive method. Besides, 90.2% reported using contraceptives regularly post-abortion compared to 39.1% pre-abortion ( $Z=-10.3$ ,  $P=0.000$ ).

### Psychological well-being

There were 114 women (41.6%) who felt less depressed after abortion ( $Z= -6.963$ ,  $P=0.000$ ). Fewer respondents were in the symptomatic category after TOP as shown in **Table 3**. This change was associated with

**Table 2: Main contraceptives used before and after abortion**

Contraceptives	Pre-abortion N=274%	Post-abortion N=245%
<b>None</b>	<b>20 (7.3)</b>	<b>4 (1.6)</b>
<b>Less reliable contraceptive</b>	<b>54 (19.7)</b>	<b>6 (2.4)</b>
Safety period	27 (9.9)	2 (0.81)
Coitus interruptus	22 (8.0)	2 (0.81)
Emergency contraceptives pills	3 (1.1)	2 (0.81)
Spermicide	2 (0.7)	0 (0)
<b>Reliable contraceptive</b>	<b>200 (73)</b>	<b>235 (96)</b>
Combined oral contraceptive pill	14 (5.1)	121 (49.4)
Contraceptive patch	0 (0)	1 (0.4)
Injection	3 (1.1)	12 (4.9)
IUCD	6 (2.2)	18 (7.3)
Condom	177 (64.6)	83 (33.9)
<b>Consistency of use</b>		
Regular use of contraceptive	24 (39.1)	221 (90.2)

**Table 3: Category of depression by CESD before and after TOP (N=274, %)**

	Before TOP		After TOP	
	N	%	N	%
Not indicative of depression	116	(42.3)	202	(73.7)*
Indicative of depression	117	(42.7)	55	(20.1)*
Indicative of major depression	41	(15.0)	17	(6.2)*

\*Significant change ( $P<0.05$ )

those whose reason of abortion was ‘completed family’ ( $\chi^2=87.902, p=0.000$ ).

There were 74.8%, 52.9%, 70.8% of women scoring 2 or above in the above three subscales of post-traumatic disorder, which meant that the majority of them suffered from certain degree of distress. 25 (10.2%) of women who scored above 24 were suggestive of having PTSD. There was no association between sex resumption with those likely to have PTSD.

A subgroup analysis was carried out to see whether there was any significant difference in CIES-R score between YHCC clients (those under 26 years old and

unmarried) versus adult women in BC clinics. There were 99 women from YHCC and 175 women from BC clinics. Mean CIES-R score for YHCC clients was significantly higher than BC clients meaning they experienced more post-traumatic stress. ( $Z=-3.854 p=0.000$ )

**Sexuality**

There was no significant difference in sexual dysfunction between pre-pregnancy and post-abortion except less people felt unsatisfied with sexual life without penile penetration after TOP. ( $z = -2.065, p < 0.05$ ) (Table 4) There were 108 (44.1%) women presented at least one of four sexual dysfunctions (unsatisfied sexual desire, orgasm, vaginal dryness or vaginal pain). Of the

**Table 4: Sexual dysfunctions before and after termination of pregnancy**

	Pre-pregnancy		After TOP		Difference
	N=274	%	N=245	%	
Sexual desire					
unsatisfied	28	(10.2)	26	(10.6)	NS
satisfied	246	(89.8)	219	(89.4)	
Sexual orgasm					
unsatisfied	37	(13.5)	38	(15.5)	NS
satisfied	237	(86.5)	207	(84.5)	
Vaginal dryness					
yes	73	(26.6)	66	(26.9)	NS
no	201	(73.4)	179	(73.1)	
Vaginal pain					
yes	62	(22.6)	53	(21.2)	NS
no	212	(77.4)	192	(78.8)	
Satisfaction of sexual life					
unsatisfied	19	(6.9)	22	(9)	NS
satisfied	255	(93.1)	223	(91)	
Subjective feelings of partner’s satisfaction of sexual life					
unsatisfied	24	(8.8)	23	(9.4)	NS
satisfied	250	(91.2)	222	(90.6)	
Sexual life with penis penetration					
unsatisfied	21	(7.7)	17	(6.9)	NS
satisfied	253	(92.3)	228	(93.1)	
Sexual life without penis penetration					
unsatisfied	143	(52.2)	113	(46.1)	Z=-2.065*
satisfied	131	(47.8)	132	(53.9)	(P=0.039)
Sexual frequency with penis penetration					
<4/ month	98	(35.8)	97	(39.6)	NS
4-8 /month	149	(54.5)	125	(51)	
>8/month	27	(9.9)	23	(9.4)	
Sexual frequency without penis penetration					
<4/ month	225	(82.1)	198	(80.8)	NS
4-8 /month	34	(12.4)	31	(12.7)	
>8/month	15	(5.5)	16	(6.5)	

NS - not statistically significant \* - statistically significant

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sample, 59 women (24.1%) had one, 33 women (13.5%) had two, 13 women (5.3%) had three and 3 women (1.2%) had all four sexual problems.

For subjective ratings on changes of sexual functions, majority of them felt their sexual functions were affected after TOP (Table 5). Nearly a quarter of women (24.5%) reported subjective decrease in sexual desire after abortion, 17.6% women reported less sexual orgasm, 10.6% and 9.8% reported more vaginal dryness and vaginal pain after abortion respectively. There were 16.3% women reported decrease in receiving sex and 24.1% women reported decrease in requesting sex.

Associations of subjective changes in sexual function with post-traumatic stress symptoms were shown in Table 6. Associations were seen in more vaginal pain, less requesting sex with distress shown in intrusion subscale of CIESR ( $\chi^2=11.6, p=0.003; \chi^2=0.728, p=0.026$  respectively). Hyperarousal was associated with subjective decrease in most sexual functions ( $\chi^2$  ranged 7.149 to 17.283,  $p<0.05$ ). Less sexual desire, more vaginal pain, less requesting and receiving sex were associated with avoidance ( $\chi^2$  ranged 5.311 to 12.878,  $p<0.05$ ).

**Discussion**

*Positive and negative psychological well-being after abortion*

In recent years, there have been concerns of unwanted pregnancy and abortion on mental health. There may be long term adverse mental health effects owing to the feelings of guilt, unresolved loss and lowered self esteem. There are also increase risks of a wide range of mental disorders.<sup>18</sup> This study clearly revealed the psychological well-being after abortion. Compared to the prevalence rates of PTSD which was 1%-5% for childbirth and 14%-59% for a life-threatening situation in an

**Table 5: Subjective changes of sexual functions after abortion (N=245, %)**

	<i>Less</i>	<i>No change</i>	<i>More</i>
Sexual desire	60 (24.5)	178 (72.6)	7 (2.9)
Sexual orgasm	43 (17.6)	194 (79.2)	8 (3.2)
Vaginal dryness during sex	25 (10.2)	194 (79.2)	26 (10.6)
Vaginal pain during sex	17 (6.9)	204 (83.3)	24 (9.8)
Receiving sex	40 (16.3)	199 (81.2)	6 (2.5)
Requesting sex	59 (24.1)	177 (72.2)	9 (3.7)

intensive care unit,<sup>19</sup> our rate of 10.2% women with scores suggestive of PTSD after abortion was quite alarming, although the definitive diagnosis of PTSD should have been substantiated by clinical interviews. About 50-70% of subjects had at least moderate level of distress in either one of the subscales of CIES-R. The post-traumatic stress can be due to both the unwanted pregnancy and the termination of pregnancy. Subgroup analysis for younger clients (in YHCC clinics) had higher CIES-R score than older clients (in BC clinics). It is understandable that those clients who were unmarried and young with less social support would have more post-traumatic stress. The findings suggest that counselling is important for such group of vulnerable clients requesting for abortion. Clinicians should be aware that substantial proportion of women might have PTSD after abortion. Therefore, they should watch out for symptoms of PTSD during post-abortion follow up and make appropriate referral for specialist assessment. On the other hand, study subjects felt less depressed after TOP. The change was associated with those whose reason of abortion was ‘completed family’. Therefore, for those patients who completed family with unwanted pregnancy had certain degree of stress and it was relieved after TOP. This could support our indication for TOP is to relieve possible mental injury from the unwanted pregnancy.

*Sexuality after TOP*

There was no significant change of sexual dysfunctions before and after abortion. Therefore termination of pregnancy itself did not cause sexual dysfunctions as revealed in this study. However, women had negative feelings on sexual functions as reflected by the subjective ratings. The deterioration in sexual function occurred more frequently than reported in the literature.<sup>2,3</sup> A population study in Hong Kong studied the prevalence of sexual problems and satisfaction in 2005.<sup>21</sup> Over half of all female respondents (53%) reported at least one sexual symptom. Individual sexual problem was prevalent ranging from 6.9% (anxiety) to 24.7% (lack of interest) that were comparable to our results. Certain proportion of our patients already had sexual dysfunctions before abortion. The severity of symptoms was exaggerated after abortion as revealed by the subjective changes.

Several factors might account for the high rate of subjective worsening in sexual functions in our study. Firstly, there was a high incidence of post-traumatic stress

**Table 6: Associations of subjective changes of sexual functions with PTSD its subscales**

	PTSD	Intrusion	Hyperarousal	Avoidance
<b>Sexual desire</b>				
x <sup>2</sup>	3.622	6.197	9.591	5.311
p value	0.57	0.46	<b>0.002*</b>	<b>0.021*</b>
<b>Sexual orgasm</b>				
x <sup>2</sup>	NA	4.577	17.283	2.648
p value	0.165 <sup>a</sup>	0.101	<b>0.000*</b>	0.266
<b>Vaginal dryness</b>				
x <sup>2</sup>	NA	3.156	10.46	2.336
p value	1 <sup>a</sup>	0.206	<b>0.005*</b>	0.311
<b>Vaginal pain</b>				
x <sup>2</sup>	NA	11.6	12.955	7.985
p value	0.687 <sup>a</sup>	<b>0.003*</b>	<b>0.002*</b>	<b>0.018*</b>
<b>Receiving sex</b>				
x <sup>2</sup>	NA	4.553	6.464	9.257
p value	0.573 <sup>a</sup>	0.103	0.11	<b>0.002*</b>
<b>Requesting sex</b>				
x <sup>2</sup>	0.955	0.728	7.149	12.878
p value	0.328	<b>0.026*</b>	<b>0.008*</b>	<b>0.002*</b>

<sup>a</sup>Fishers' exact test was used. Otherwise, chi-square test was used.

\*significant test  $p < 0.005$

NA- Not applicable

symptoms among our subjects and they were associated with subjective decrease of sexual functions. Our finding echoes with Bianchi's study that the sexual symptoms could be affected by psychological factors. These, in turn, can be due to the unplanned pregnancy or the termination of pregnancy. Unplanned and unwanted pregnancy itself was already a stress. Besides, women might have more vivid memories of the abortion event under local anaesthetics and therefore a higher level of post-traumatic stress symptoms. Secondly, as mentioned previously, Chinese culture believes that sex/abortion is a taboo. Women will not discuss their adverse feelings verbally with their friends, relatives or even partners. Therefore, their anxiety associated with unplanned pregnancy and abortion was suppressed instead of ventilated. The subjective change in sexual functions could be a somatoform of underlying psychological trauma and the self-administered questionnaires serve as a source of silent ventilation for them to exhaust their long suppressed feelings.

### Contraception

About 90% women in our study resumed sex at 8th week post-abortion; therefore it would be wrong to believe that most women having abortion for an unwanted pregnancy would have a considerable period of time without sexual activity. The study revealed that majority

of women used more reliable contraception after abortion and used it more regularly. This may be due to the easy availability and non-expensive supply of various contraceptive methods and efforts of medical staffs in discussing contraception in our Association. However, this contraceptive practice may not apply to all women seeking abortion since those taking pills were more likely to come back for follow up than those using other forms of contraception. In fact, 66.4% women had previous history of abortion. It is important that women should have concrete contraception plan at abortion counselling session to reduce the risk of accidental pregnancy again.

### Couple relationship

There was no significant change in marital status or partner after TOP. This could be related to Chinese culture and relatively short duration of follow-up in our study. Satisfaction towards couple relationship did not differ from the normal Chinese population and was independent of the effect of abortion.

### Limitations of the study

#### 1) High attrition rate

Although the recruitment rate of the study (80.4%) was satisfactory and the recruited subjects were representative, only half of them returned for follow

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**Key messages**

1. Termination of pregnancy did not cause sexual dysfunctions.
2. Significant proportion of women reported decreased sexual functions subjectively which may be due to stress related to unplanned pregnancy or the TOP.
3. Post-traumatic stress was prevalent in those having abortion and they are likely to report decrease in sexual functions.
4. The abortion itself did not cause depression and many of them were less depressed after abortion especially those who had completed family.
5. No significant change of couple relationship was noticed during the period of follow up.
6. 90% women resumed sex at 8<sup>th</sup> week post-abortion and majority of women reported regular use of more reliable contraception provided with proper counselling and provision of non-expensive contraceptives.

up at 8<sup>th</sup> week. To have a more comprehensive review, future studies can be modified to trace the defaulters.

2) *Confounding factors*

The pre-post design has taken into account the effect of unwanted pregnancy, therefore the change in the measures of psychological characteristics from before TOP to after TOP pretty much reflects the effect of abortion. However, the subjective change of sexual functions may be confounded by the unwanted pregnancy. Nevertheless, it does not affect our aim to study the sexuality after termination of pregnancy and not the impact of it.

3) *Causal inferences*

The present study only examined the association of sexual functions with psychological factors but the causal relationship is not determined.

4) *Standardized questionnaire on sexual function*

Although there are many standardized questionnaires assessing the sexual function, there is scanty Chinese validated version. The famous Chinese version of 'Derogatis Sexual Function Inventory' is too lengthy for the study. The idea of questions designed in the

present questionnaire was originated from previous similar studies. We hope we can have a general idea on how sexual function is changed after termination of pregnancy in Chinese.

**Conclusion**

Our study suggested that termination of pregnancy did not cause sexual dysfunctions. However, significant proportion of women did suffer from decreased sexual functions subjectively which may be due to stress related to unplanned pregnancy or the TOP. The abortion itself did not cause depression and women had completed family were less depressed after abortion. Post-traumatic stress was prevalent in those having abortion and the symptoms were associated with the subjective decrease in sexual functions.

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