Acceptability of the combined oral contraceptive pill among Hong Kong women

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A B S T R A C T

Objective: To evaluate the motivators and barriers to the use of the combined oral contraceptive pill among Hong Kong women.

Methods: The Family Planning Association of Hong Kong commissioned the *ESDlife* to launch an online survey and invited its female members aged 18 to 45 years who had used contraceptives in the past 12 months to participate in this survey. The online survey was posted on the *ESDlife* website between April 2015 and May 2015. Measurements included contraceptive choice, and motivators and barriers to the use of a combined oral contraceptive pill.

Results: A total of 1295 eligible women with a median age of 32 years participated in this survey. In the past 12 months, 76.1% of them used a male condom, 20.9% practised coitus interruptus, 16.2% avoided coitus during the unsafe period, and 12.6% took a combined oral contraceptive pill. These women chose a combined oral contraceptive for convenience, effectiveness, and menstrual regulation, though 60.9% had stopped the pills because they were worried about side-effects, experienced side-effects, or consistently forgot to take the pills. Some women had never tried a combined oral contraceptive pill because they feared side-effects, they were satisfied with their current contraceptive method, or pill-taking was inconvenient.

Conclusions: The combined oral contraceptive pill is underutilised by Hong Kong women compared with those in many western countries. A considerable proportion of respondents expressed concern about actual or anticipated side-effects. This suggests that there remains a great need for doctors to dispel the underlying myths and misconceptions about the combined oral contraceptive pill.

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New knowledge added by this study

- Some women chose a combined oral contraceptive (COC) pill for convenience, effectiveness, and menstrual regulation.
- Some women had never tried a COC pill because they feared its side-effects, were satisfied with their current contraceptive method, or pill-taking was inconvenient.
- Some women stopped taking their COC pill because they feared its side-effects, experienced side-effects, or consistently forgot to take pills.

Implications for clinical practice or policy

- During contraceptive counselling, doctors should educate women and dispel the myths and misconceptions about COC pills.
- Doctors should explain the side-effects of the COC pill, its absolute risk, and the underlying health conditions that might increase the risk of complications as well as the non-contraceptive benefits of COC thoroughly so that women can make an informed decision and use it safely.
- To help women stay on the pill, doctors should inform women that different pills have slightly different side-effect profiles and they can switch to another formulation if they experience any problem with their current COC. Improving accessibility by allowing walk-in consultations for problems with the COC pill gives women additional support.

Introduction

According to the Family Planning Knowledge, Attitude and Practice in Hong Kong Survey 2012 among Hong Kong couples,[1] the male condom was the most popular contraceptive. The proportion of couples who used a male condom doubled from 32.2% in 1987 to 69.6% in 2012. Combined oral contraceptive (COC) pill was the second most common form of contraception, though the proportion of women using a COC pill declined from 20.3% in 1987 to 10.8% in 2012. The failure rate of the male condom when used correctly is 6 times higher than that for the COC pill.[2] Although the low-dose COC pill has a low incidence of complications,

香港女性對混合荷爾蒙避孕丸的接受程度

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目的：評估香港女性使用混合荷爾蒙避孕丸的原因和障礙。

方法：香港家庭計劃指導會委託「生活易」網站於2015年4月至5月期間邀請其女性會員參加一項網上調查。凡年齡介乎18至45歲，並在過去12個月內曾使用任何避孕方法均可參與是次調查。搜集資料包括被訪者採用的避孕方法，以及使用混合荷爾蒙避孕丸的原因和遇到的障礙。

結果：共1295名合資格的女性參與是次調查，她們平均年齡中位數為32歲。在過去12個月內，有76.1%被訪者的避孕方法為使用男性避孕套、20.9%採取體外射精、16.2%只在安全期進行性交、12.6%使用混合荷爾蒙避孕丸。選擇使用混合荷爾蒙避孕丸的原因為其便利性、有效性和可調節月經；但當中60.9%被訪者由於擔心其副作用、已出現的副作用，或持續地忘記服藥已停止服用混合荷爾蒙避孕丸。部分婦女因為擔心出現副作用、滿意自己正採用的避孕方法和服藥不方便而從來沒有嘗試使用混合荷爾蒙避孕丸。

結論：與許多西方國家比較，香港女性使用混合荷爾蒙避孕丸的比率偏低。很多受訪者表示擔心混合荷爾蒙避孕丸所帶來的實際或預期副作用。由此可見，醫生絕對有需要向病人傳遞混合荷爾蒙避孕丸的正確信息以破除謬誤。

high efficacy, and many non-contraceptive benefits, relatively few women use it in Hong Kong. The report of the United Nations world contraceptive patterns 2013 estimated that the prevalence of pill use in Hong Kong women aged 15 to 49 years was 6.7%, which is much lower than other countries with similar development, wealth, and culture such as Australia (30.0%), Canada (21.0%), Singapore (10.0%), the UK (28.0%), and the US (16.3%).[3] Unlike these countries, the COC pill is not a prescription drug in Hong Kong. Women can buy a low-dose COC pill that contains either 30-μg or 20-μg ethinylestradiol and one of the progestogens: levonorgestrel, gestodene, desogestrel, or drospirenone at any of the large-chain personal health and beauty retailers or pharmacy stores. All pills have similar efficacy. Their failure rate is 0.3% within the first year of perfect use.[2] Low-dose pills are safer, better tolerated, and have equal or higher efficacy than high-dose pills that contain 50-μg ethinylestradiol.

With 70% of couples in Hong Kong using the male condom,[1] the demand for abortion due to failed contraception cannot be ignored. It was shown that 77.4% of women who underwent an abortion were using contraception during the index pregnancy and 51.2% of them were using a male condom.[1] The number of legal abortions in Hong Kong has reduced from 25 363 in 1995 to 10 359 in 2014 (personal communication, Department of Health), though the number of abortions carried out across the border is unknown. According to the results from the serial 5-yearly territory-wide family planning survey,[1] the proportion of married women who went to China for their last abortion increased from 24.3% in 1992 to 47.2% in 2012. Given the limited resources assigned to abortion in public hospitals, women have to resort to the more expensive legal abortion service in private hospitals or the Family Planning Association of Hong Kong (FPAHK). The FPAHK performs 3000 medical and surgical first-trimester abortions each year and has reached its full service capacity. There is a need to further reduce unplanned pregnancies and abortion in Hong Kong. One plausible solution is to encourage more women to use more effective contraception such as the combined hormonal contraceptive pill, progestogen-only contraceptives, intrauterine contraceptive device, or sterilisation. The failure rate of these effective contraceptives when used correctly is <1% in the first year of use.[2]

Studies have shown that identifying women's perspective can help doctors understand their motive to choose one contraceptive over another.[4] One study identified personal choices, local factors, women's perceived safety, effectiveness, and convenience of the method as determinants of contraceptive choice.[5] Among the effective contraceptives available in Hong Kong, the COC pill is the most accepted. We performed this survey to determine the motivators and barriers to COC pill use.

Methods

The Family Planning Association of Hong Kong invited *ESDlife* to host the survey that was open to its female members aged between 18 and 45 years. The questionnaire was designed by the investigators. *ESDlife* is an online lifestyle media in Hong Kong. It is a joint venture between the Hong Kong SAR Government and a commercial firm that began in 2000 with the aim of providing e-government and e-commerce services. With the establishment of the Government's own website in 2008, all government services have migrated to the official website and *ESDlife* remains a solely commercial portal. As of 2 January 2015, it had 297 152 members of whom 64.4% were female. Among the female members, 89.0% were within our target age range: 32.3% were 30-34 years old, 23.3% were 35-39 years old, 19.3% were 25-29 years old, 10.3% were 40-45 years old, and 3.8% were 18-24 years old.

ESDlife sent out 100 000 invitations randomly to its female members aged between 18 and 45 years on 21 April 2015 and invited them to participate in this online survey between 21 April 2015 and 20 May 2015. There were 16 questions that explored the basic demographic characteristics of respondents (6), their contraceptive choice (3), and their motivators and barriers to COC use (7). Invited members entered the survey via a link and those who

had not used any contraception in the previous 12 months were screened out by the first question. Only eligible subjects could proceed with the survey. They could stop at any question and the questionnaire would be voided. To encourage participation, a $50 supermarket coupon was given to every 10th respondent via *ESDlife*. This study was reviewed and approved by the Health Services Subcommittee and Ethics Panel of the FPAHK.

Data analyses were accomplished using the Statistical Package for the Social Sciences (Windows version 22.0; SPSS Inc, Chicago [IL], US). Descriptive statistics were presented. Bivariate Chi squared test was performed to analyse the demographic characteristics that predicted COC pill use.

Results

During the survey period, only completed questionnaires were captured by the system so the number of incomplete questionnaires was unknown. A total of 1566 women completed the survey within the 1-month period, 271 were screened out by Question 1 because they had not used regular contraception in the past 12 months and 1295 questionnaires were analysed. The response rate was 1.57%. The median age of the respondents was 32 years (interquartile range, 29-36 years). Half of them (50.7%) had a university education, 20.5% had a post-secondary education (diploma or associate degree), and 28.3% had a secondary education. The majority (65.5%) were married, 29.0% were unmarried, 3.3% were cohabiting, 2.1% had separated or divorced, and 0.2% were widowed. Over half of the respondents were nulliparous (56.7%) and had no plan for pregnancy (52.3%). They usually purchased contraceptives from a chain of personal health and beauty retailers (52.8%), convenience store and supermarket (43.9%), or pharmacy (23.6%). They usually sought contraceptive information from an online health website (46.5%), online forum (40.1%), gynaecologists (27.8%), or family planning clinic (21.6%). A summary of the socio-demographic characteristics is shown in Table 1.

Among the 1295 respondents, 453 (35.0%) had used more than one type of contraceptive in the previous 12 months. The contraceptive choices of the whole group were: male condom (76.1%), coitus interruptus (20.9%), safe period (16.2%), and COC pill (12.6%) [Table 1]. The contraceptive choices of the 986 male condom users were further analysed to estimate their risk of unplanned pregnancy. Among them, 598 (60.6%) used a male condom alone, 295 (29.9%) also used other less effective contraceptives such as a female condom, safe period, and coitus interruptus but whether they used them all together during coitus or switched between these contraceptives was unknown. Therefore, these condom users were indisputably at risk for

TABLE 1. Socio-demographic characteristics (n=1295)

Socio-demographic characteristic	No. (%) of participants
Relationship status	
Married	848 (65.5)
Co-habitation	43 (3.3)
Divorced / separated	27 (2.1)
Widowed	2 (0.2)
Unmarried	375 (29.0)
Education attained	
Primary	7 (0.5)
Secondary	367 (28.3)
Diploma	265 (20.5)
University	656 (50.7)
Have you had children?	
No	734 (56.7)
Yes	561 (43.3)
Do you plan to get pregnant (again)?	
No	677 (52.3)
Yes	618 (47.7)
Where do you buy contraceptives? (can choose more than one)	
Convenience store / supermarket	569 (43.9)
Watsons / Mannings	684 (52.8)
Pharmacy store	305 (23.6)
Family Planning Association of Hong Kong	132 (10.2)
Maternal & Child Health Clinics	94 (7.3)
Family doctor	34 (2.6)
Gynaecologists	30 (2.3)
Online stores	39 (3.0)
When you need information on contraception, where / who will you turn to? (can choose more than one)	
Television programme	204 (15.8)
Online brand website	201 (15.5)
Online health website	602 (46.5)
Online forum	519 (40.1)
Friends / family	122 (9.4)
Family doctor	205 (15.8)
Gynaecologist	360 (27.8)
Newspaper / magazine	169 (13.1)
Family planning clinic	280 (21.6)
Others	14 (1.1)
Contraceptive(s) used in past 12 months (can choose more than one)	
Combined oral contraceptive	163 (12.6)
Progestogen-only pill	78 (6.0)
Combined injectable contraceptive	33 (2.5)
Progestogen-only injectable	12 (0.9)
Intrauterine contraceptive device	27 (2.1)
Male condom	986 (76.1)
Female condom	34 (2.6)
Safe period	210 (16.2)
Vasectomy	2 (0.2)
Female sterilisation	8 (0.6)
Coitus interruptus	271 (20.9)
Emergency contraceptive pill	57 (4.4)
Others	9 (0.7)
Have you ever tried combined oral contraceptive?	
No	842 (65.0)
Yes	453 (35.0)

unplanned pregnancy because they did not use other effective contraceptives with the male condom.

In this study sample, 842 (65.0%) women had never tried a COC pill. The main reasons were fear of side-effects (72.1%), satisfied with their current contraceptive (32.1%), and pill-taking was inconvenient for them (18.5%) [Table 2]. Among 453 women who had tried a COC pill, the median age they started use was 24 years (interquartile range, 20-28 years). Use of COC pill was associated with older age (mean ± standard deviation: users and non-users was 33.4 ± 5.8 and 32.4 ± 5.5 years, respectively; *t* test, P=0.003), not planning to get pregnant (P=0.002), and university education (P=0.004). There was no association with relationship status (P=0.968) or parity (p=0.427). These women preferred the COC pill because of convenience (47.7%), effectiveness (44.8%), menstrual regulation (33.6%), recommendation by their doctor (24.7%), reduced burden to partner (17.0%), for relief of dysmenorrhoea (14.1%), and improvement of acne (12.6%) [Table 3]. They chose a COC pill based on the dosage of hormones, type of hormones, and price. Among the 453 ever-users, 177 (39.1%) had been taking a COC pill in the previous 12 months. Use had stopped in 276 because they feared side-effects (39.1%); they experienced side-effects such as nausea, vomiting, breast tenderness, oedema, or weight gain (27.9%); they consistently forgot to take pills (19.9%); their doctor told them to stop (14.1%); or they were having less frequent coitus (12.3%) (Table 4).

TABLE 2. Reasons for never tried combined oral contraceptives (n=842)

Reason*	No. (%)
Pill-taking is inconvenient.	156 (18.5)
I fear of its side-effects (eg headache, nausea, breast tenderness, oedema, weight gain, irregular bleeding).	607 (72.1)
It is expensive.	79 (9.4)
My existing health condition makes me unsuitable to use it.	45 (5.3)
I am satisfied with my current contraceptive(s).	270 (32.1)
None of the above.	66 (7.8)

* Could choose more than one option

TABLE 3. Reasons for using combined oral contraceptives (n=453)

Reason*	No. (%)
It is an effective contraceptive.	203 (44.8)
It is convenient to use.	216 (47.7)
To reduce burden on my partner.	77 (17.0)
To reduce menstrual flow.	41 (9.1)
To relieve dysmenorrhoea.	64 (14.1)
To improve acne.	57 (12.6)
To regulate menses.	152 (33.6)
It is cheap.	28 (6.2)
It can prevent gynaecological diseases.	6 (1.3)
It can prevent endometrial and ovarian cancers.	4 (0.9)
My doctor recommends it to me.	112 (24.7)
None of the above.	10 (2.2)

* Could choose more than one option

TABLE 4. Reasons for cessation of combined oral contraceptives (n=276)

Reason*	No. (%)
I always forget to take pills.	55 (19.9)
I experience side-effects (headache, nausea, breast tenderness, oedema, weight gain).	77 (27.9)
I have irregular bleeding.	8 (2.9)
I have less frequent coitus.	34 (12.3)
I fear of its side-effects.	108 (39.1)
COC are expensive.	5 (1.8)
I am getting old.	33 (12.0)
My doctor told me to stop.	39 (14.1)
None of the above.	32 (11.6)

Abbreviation: COC = combined oral contraceptives

* Could choose more than one option

Discussion

The pattern of contraceptive use in this study sample was similar to that in the 2012 territory-wide survey.[1] Male condom was the most popular contraceptive, used by 76.1% of couples in our study. The proportion of women using a COC pill in our study was also similar to that in the 2012 survey. Our survey has provided some information about the characteristics of women who chose to take the COC pill, such as older age, university education, and no plan for future pregnancy. A similar age profile and education attainment were identified in a national survey conducted in the US,[6] in which parity and relationship status were also characteristics associated with COC pill use.

Fear of side-effects was the major reason cited by both subgroups of women who stopped or had never tried a COC pill. Studies carried out in both developed and developing countries have also shown that the experience of side-effects as well as the fear of side-effects are major reasons for discontinuation.[7-10] It appeared that fear of side-effects was a unique barrier across different countries and cultures. Minor side-effects such as breast tenderness, fluid retention, nausea, and vomiting were transient and usually subsided after one to two cycles. Major health hazards such as myocardial infarction, stroke, thromboembolism, breast cancer, and cervical cancer are rare. Two meta-analyses showed a 2-fold increase in myocardial infarction and stroke in low-dose COC pill users compared with non-

users.[11,12] The risk of venous thromboembolism was increased by 3- to 5-fold depending on the type of progestogen used.[13] Since the baseline incidence of these vascular events in women of reproductive age is very low (myocardial infarction: 0.2 per 100 000 at age 30-34 years to 2.0 at age 40-44 years[14]; stroke: 1 per 100 000 at age 30-34 years to 1.6 at age 40-44 years[14]; thromboembolism: 2 per 10 000 women at reproductive age[15]), the absolute risk of such vascular complications is very small. Breast cancer risk with a low-dose COC pill is also small. A large meta-analysis of case-control studies from 25 countries showed a modest increase in breast cancer risk with the COC pill (relative risk=1.24; 95% confidence interval [CI], 1.15-1.33).[16] The risk of cervical cancer depends on the duration of use. Women who used a COC pill for less than 5 years have no increased risk of cervical cancer. The odds ratio for cervical cancer after using COC for 5 to 9 years was 2.82 (95% CI, 1.46-5.42) and 4.03 (95% CI, 2.09-8.02) for 10 years or longer.[17] Cervical cancer is largely preventable by regular cervical smears, safe sex, as well as avoidance of smoking. The overall morbidity and mortality associated with the low-dose COC pill are low and most healthy women can use it without major concerns.

The lack of access to consultation services has exacerbated concern about side-effects, both for women who experience them and for those who fear them.[9] At our clinics, women are counselled about the common side-effects and complications of the COC pill. This prevents them from panicking when minor side-effects occur. They are also told to stop taking the COC pill immediately and consult a doctor if they develop signs and symptoms of a major complication. Such counselling helps women establish realistic expectations and they are able to use COC safely. An information sheet detailing side-effects and complications, warning signs and symptoms for major complications, commonly used drugs that interact with COC pill, and missed pill management is given to all users. When first prescribed, we usually provide two packs and then review acceptability after 2 months. Women are advised that different COC pills vary slightly in their side-effect profile and they can change to another formulation if they have problems. We also offer walk-in clinics for any woman who wishes to get contraceptive advice from nurses. The above COC pill delivery mode conforms to the World Health Organization recommendations.[18]

Apart from side-effects and complications, women should be informed of the non-contraceptive benefits of the COC pill, such as menstrual regulation and relief of dysmenorrhoea; reduced risk for endometrial, ovarian, and colorectal cancers; lower incidence of gynaecological diseases such as endometriosis, pelvic inflammatory disease, ectopic pregnancy; and improved acne and bone health. All such information should be shared with women to help them establish an impartial perspective on the risks and benefits of the COC pill.

The main limitation of this survey is the very low response rate, albeit not unexpected with online survey. There was also selection bias as members of an exclusive group were invited to participate. Those who participated in the survey prompted self-selection bias as they might be systematically different from those who chose not to respond. When we planned the study, we had explored other alternatives such as face-to-face interview, phone interview, or online survey for the general public. Nonetheless, the first would be too expensive and in the last two alternatives, we would be unable to verify respondent's age or gender. We settled with this arrangement as it was the most convenient means to reach our target group since *ESDlife* only allowed female members aged 18 to 45 years to participate. The demographic statistics provided by *ESDlife* revealed that the education attainment and income reported by its female members were better than the population average. The contraceptive choice in this group matched that of the population study and the sample size was not small. Although the results obtained cannot be generalised to the local population, we believe they provide useful insight into the reasons why women do or do not use the COC pill. The other limitation is the number of questions we could ask was limited by the budget. If we had a larger budget to include more questions, we would have explored the type of COC pill used, total duration of use, and the switch pattern in women who used more than one contraceptive in the previous 12 months. Lastly, there was a discrepancy in the number of women who were using a COC pill in the past 12 months. For "Question 15. Are you still on COC in the past 12 months?", 177 responded positively. In response to Question 7, however, only 163 chose COC pill as one of the contraceptives they had used in the past 12 months. Some women might have omitted COC when they selected their contraceptives from the list provided in Question 7.

Conclusions

The COC pill remains underutilised in Hong Kong compared with many western countries. The male condom is the most popular contraceptive and the proportion of women using a COC pill is one sixth of that of women who use a male condom. A considerable proportion of respondents expressed concerns about actual or anticipated side-effects. Doctors should focus on this area during contraceptive counselling and help dispel the underlying myths and misconceptions surrounding COC pill use. Studies have shown that minor side-effects are transient,

major complications are rare in healthy women, and there are many non-contraceptive benefits of the COC pill. These facts should be emphasised during COC counselling to help women balance the risks and benefits of the COC pill and make an informed choice about contraception.

Declaration

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