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ORIGINAL ARTICLES

Women's knowledge of, and attitudes to, contraceptive effectiveness and adverse health effects

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Summary
Our objectives were to determine women's knowledge of the effectiveness of different contraceptive methods and the risks of thrombosis with use of hormonal contraceptives, and their attitudes regarding the acceptability of bleeding irregularities and weight change. An additional aim was to determine what information women want to be given about contraceptives.

In order to satisfy the study objectives, a series of semi-structured focus groups was conducted with women of differing life-stage and background from Oxford. Quantitative data were collected using a structured questionnaire. Qualitative data were collected through discussion with group members. Forty-five women attended four focus groups. Women were segregated into the following groups: professional working mothers; non-professional mothers; young, unmarried professional women; and undergraduate students.

Women tended to overestimate the risks and underestimate the effectiveness of hormonal contraceptives. They were resistant to interference with their bleeding patterns and weight.

Key words
adverse effects; contraceptive effectiveness; women's knowledge; women's views

Key message points

- Women tended to overestimate the effectiveness of female sterilisation and underestimate that of hormonal contraceptives, particularly implants.
- Many women were more concerned about the adverse health effects associated with hormonal contraceptives than about effectiveness.
- Women tended to be particularly concerned about bleeding irregularities and weight gain that might result from the use of hormonal contraceptives.
- Women tended to overestimate the risk of thrombosis associated with hormonal contraceptive use.

Introduction

Patients are becoming increasingly aware of the medical options available to them and, as a result, some may wish to be involved in decisions concerning their health and medical care. They require accurate and representative information, relevant to their needs, in order to establish the balance between the benefit and harm (or risks) of different interventions. However, issues and questions of importance to patients may be different from those considered by healthcare professionals or researchers.[1]

Research may be used to explore patients' knowledge, attitudes and information requirements; one method of doing this is through the use of focus groups.[2] Results can be utilised to provide patients with the quality evidence they require in a format that they find acceptable. The provision of information to patients enhances patient choice.[1]

Two similar approaches to evidence-based information for patients have been put forward to date.[1,2] Hope indicates a research process whereby the issues of importance to patients are recognised, good quality evidence is gathered and made accessible to patients with minimum bias, and the information is then used by patients to enhance choice.[1] Entwistle and colleagues put forward three criteria for evidence-informed patient choice (EIPC),[2] all of which must be met:

- There must be a healthcare decision concerning an intervention a patient will or will not receive.
- The patient should be provided with research-based information about the effectiveness (benefits and harms/risks) of at least two interventions.
- The patient must have some input in the decision-making process.

Both approaches highlight the need for the provision of evidence-based information in order for patients to be involved in decision-making processes. Such information is important for women wishing to make informed contraceptive choices. Different contraceptive methods

offer varying degrees of protection against pregnancy, though if used correctly (according to the manufacturers' recommendations) pregnancy can be avoided in most instances. Hormonal contraceptives are more efficacious than barrier methods, and equally as effective as male sterilisation,[3] with the added advantage of ease of reversibility. However, hormonal contraceptives may be associated with adverse health effects such as disruption to a woman's bleeding pattern, weight change and, in rare circumstances, development of a thromboembolism.

The incidence and pattern of adverse effects has been reported to be a major determinant of the acceptability of a contraceptive method to women.[4] Examples are bleeding irregularities and weight change, which have been shown to affect compliance and have been cited as reasons for women discontinuing their chosen contraceptive.[5]

Previous studies have been conducted to determine how women make contraceptive decisions and the impact that providing information to them has on their knowledge of contraceptive efficacy.[6] Adverse effects have been cited as an important factor in women's contraceptive decision-making.[5]

We aimed to determine:

- What women know about the effectiveness of different contraceptive methods.
- What they know about the risks of thrombosis with use of hormonal contraceptives.
- Their attitudes regarding the acceptability of bleeding irregularities and weight change.

Additionally, we sought to determine what information women want to be given about contraceptives. In order to fulfil our objectives, a series of semi-structured focus groups was conducted with women from differing life-stages and backgrounds.

Method

Local ethics committee approval was granted for the study. Female volunteers, aged 18-45 years, were recruited from three general practices, a family planning clinic, a university campus and a day nursery in Oxford. Women of differing life-stage and socio-economic group were recruited for involvement in a series of focus group discussions on contraception, and segregated accordingly. Socio-economic group was determined by a woman's (or her partner's) stated occupation or occupational training. Consent was obtained from all women who agreed to participate in the focus groups; additional consent was obtained in order to audiotape the group discussions. In thanks for time taken to attend a focus group, women were offered a gift voucher, and travel costs were reimbursed. The focus groups were conducted by the three female members of the research team.

Focus group content

Quantitative data on bleeding pattern irregularities and weight change were presented to women through focus groups. Additionally, information on the risk of thrombosis in healthy women, users of hormonal contraceptives and pregnant women was gathered from the medical literature and presented to women.

Quantitative data collection

Information was initially presented to women in the form of questions and scenarios in a questionnaire. Quantitative data were collected on women's knowledge of contraceptive effectiveness, the risk of thrombosis, and the acceptability of bleeding irregularities and weight change. The acceptability to women of bleeding irregularities and weight change was assessed using a five-point scale (1 = very acceptable; 2 = fairly acceptable; 3 = I have no opinion on this; 4 = fairly unacceptable; 5 = not at all acceptable). Information on contraceptive effectiveness was presented as the number of women out of 10 000 who would become pregnant if they used the method of contraception for 1 year continuously and according to the manufacturer's recommendations. Similarly, information on the risk of thrombosis was presented as the number of women out of 100 000 who would develop a thrombosis in 1 year.

Qualitative data collection

Qualitative data were obtained through discussions held after completion of the questionnaires by women attending the focus groups. The aim of the discussions was to collect information supplementary to that provided by the questionnaire, particularly regarding women's attitudes and opinions.

Data extraction

The focus group discussions were audiotaped (consent was sought from women) and relevant information was extracted.

Results

Forty-five women attended four focus groups (Table 1). Their backgrounds are shown in Table 2. Four women from Group 2 (non-professional mothers; NPM) did not return their questionnaires; two of these women experienced difficulties when completing the questionnaire. Quantitative data were missing for these four women, though their verbal opinions are included below. Quantitative analysis for Group 2 (NPM) was therefore performed on the results of the seven women who completed questionnaires.

How effective do women want contraception to be?

All women, from all groups, stated that they wanted contraception to be 100% effective, but agreed that most methods do not provide this level of cover:

"But you can't have that."

"Nothing is foolproof."

Women from Group 1 (professional mothers; PM) agreed that women may want contraception to be 100% effective,

Table 1 *Socioeconomic group and life-stage of women attending focus groups on contraception*

	Life-stage	Socioeconomic group	Working status	Long-term partner	Children	Age (years)	Number of women
Group 1	Mothers	Middle	Professional	Yes	Yes	25–40	12
Group 2	Mothers	Lower	Non-professional	Yes	Yes	22–45	11
Group 3	Unmarried	Middle	Professional	Yes/No	No	23–35	13
Group 4	Unmarried	Middle	Students (undergraduates)	No	No	18–21	9

Table 2 *Profession/background of women attending focus groups*

Group 1		Group 2		Group 3		Group 4	
Profession	Number of women	Profession	Number of women	Profession	Number of women	Profession	Number of women
Nurse	3	Supermarket check-out worker	2	Psychologist	1	Science	7
Physiotherapist	1	Administrator	2	Researcher (science)	2	European business studies	1
Researcher (science)	1	Non-working or partner in a manual profession	7	Primary school teacher	1	Nursing	1
Researcher (health care)	2			Designer	1		
Radiographer	1	Scientist (qualified PhD)	1	Editor (books)	1		
Administrator	2			Mature students (studying for a PhD)	6		
Social worker	1						
Housewife (formerly in a professional career)	1						

but if they are in a stable relationship this is not always quite so important:

"There have been periods when I haven't wanted a child right there and then, but if it had occurred it would have been OK. Younger women would want it to be 100%; it depends what situation you are in."

"If you are in a stable relationship, it is not the be-all and end-all… it's not quite so important."

Women from Group 2 (NPM) agreed that contraception had to be 100% effective:

"You're taking something that's artificial, you like to know that you're doing it for a good reason."

"You want to know that it's going to do what it's supposed to."

All women from Group 3 (young, professional women; YPW) and Group 4 (undergraduate students; US) agreed they needed their contraception to be 100% effective, but realised this was not the case. Most (10/13) women in Group 3 (YPW) thought contraception was probably 90–95% effective 'if used correctly'. Most women (8/9) in Group 4 (US) thought that the Pill was the most effective method they used and considered it to be 97–99% reliable:

"If you use the method properly, according to the manufacturer's recommendations, you can guarantee 99% at least."

Method of contraception used/normally used

Group 1 (PWM). Female sterilisation and IUCDs were the most common forms of contraception used by members of this group. The Pill or diaphragm were used by two women.

Group 2 (NPM). The Pill and IUCDs were the most commonly used methods of contraception.

Group 3 (YPW). The Pill and the male condom were the most commonly used methods of contraception. No woman had been sterilised or used an IUCD.

Group 4 (US). One woman used no contraception. The other women used either the male condom, the Pill (or mini-pill), or a combination of the condom with the Pill. In this latter case, the condom was thought to provide extra protection against pregnancy, but its main use was for protection against sexually transmitted infections:

"Most women use the Pill, and use a condom for the sake of HIV and STDs. Most people use this method."

Knowledge of contraceptive effectiveness

Women were presented with information on the effectiveness of different contraceptive methods: male condom, female condom, most reliable IUCDs, combined oral contraceptive pill, hormonal implants, male and female sterilisation.

The number of women who knew, or correctly guessed, the effectiveness of different contraceptives is shown in Table 3. Sixty-three percent of women provided the correct answer for male sterilisation, 56% for the female condom, 49% for the male condom, 32% for IUCDs, 29% for contraceptive implants, 22% for female sterilisation and 12% for the combined oral contraceptive pill (Table 3).

The effectiveness of contraceptive implants was underestimated by women from all groups (Table 4), with 92% of women from Group 3 (YPW) making underestimations. The effectiveness of the Pill and the most reliable IUCDs was also underestimated (Table 4).

More than 80% of mothers (Groups 1 and 2) and students (Group 4) overestimated the effectiveness of female sterilisation (Table 4). Fewer women from Group 3 (YPW) overestimated its effectiveness.

When questioned about the male condom, one-third of women in Groups 3 and 4 (YPW, US) overestimated its effectiveness. This proportion was lower for mothers.

Women were generally surprised by the information presented to them on the effectiveness of different contraceptive methods, particularly the difference between barrier methods and hormonal contraception. Information on the number of women who would become pregnant if they used no contraception was thought to be a useful comparator by all women.

Previous information provided to women on different contraceptive methods

Leaflets and verbal advice from a healthcare professional were the main method of presentation of information on contraception. Most women felt advice on contraception was limited, with few methods being explained to them. Information on effectiveness was usually presented as a percentage.

Mothers from Group 1 (PWM) reported having been given information on sterilisation and IUCDs more frequently than other methods. Women from Group 2 (NPM) were told about IUCDs, while the majority of women from Groups 3 and 4 (YPW, US) stated that they had been provided with information on the Pill and condoms only.

Table 3 *Knowledge of the effectiveness of contraceptive methods*

	Number of women providing the correct answer						
Method of contraception	Male condom	Female condom	Most reliable IUCD	Contraceptive implants	Combined oral contraceptive pill	Male sterilisation	Female sterilisation
Group 1	3/12	6/12	6/12	7/12	2/12	8/12	2/12
Group 2	5/7	3/7	2/7	2/7	0/7	4/7	1/7
Group 3	7/13	13/13	3/13	1/13	1/13	7/13	5/13
Group 4	5/9	1/9	2/9	2/9	2/9	7/9	1/9
Percent of women providing the correct answer (n = 41)	49%	56%	32%	29%	12%	63%	22%

Acceptability of bleeding pattern irregularities

Information was presented to women through three scenarios in which different bleeding patterns were outlined (amenorrhoea, frequent bleeding, prolonged bleeding). Table 5 shows the acceptability of the three scenarios to women.

Amenorrhoea. Amenorrhoea was found to be the most acceptable form of the three bleeding irregularities (Table 5). Approximately 50% of mothers (Groups 1 and 2) and over 65% of women from Groups 3 and 4 (YPW, US) found this acceptable.

Though most women thought amenorrhoea was reasonably acceptable, some had concerns that they would worry about being pregnant if this happened (5/12 in Group 1 (PWM); 8/13 in Group 3 (YPW); 7/9 in Group 4 (US):

"How could you be sure you're not pregnant?"

Other concerns raised were about the effects the hormones were having on their bodies:

"…frightened that I'd never actually get my periods back."

"I'd feel that I would want to bleed every month… you would worry if you didn't."

Among those women who considered amenorrhoea to be acceptable, there were some concerns:

"I'd expect some kind of change, but if it went on for longer than 6 months I'd be worried and think it was unacceptable."

Women who had previously experienced amenorrhoea were less likely to consider amenorrhoea unacceptable.

Frequent bleeding and spotting

Experiencing frequent episodes of bleeding was acceptable to 50% of women in Group 2 (NPM) and one-third of women in Group 4 (US) (Table 5). Over 50% of women in Group 1 (PWM) and 92% of women in Group 3 (YPW) found this unacceptable.

Frequent bleeding was seen as a nuisance or inconvenience rather than a major concern to most women, though some women did not consider this to be acceptable:

"…extremely inconvenient and very expensive."

"You'd have to be insane (to find this acceptable)."

Table 4 *Underestimation and overestimation of contraceptive effectiveness*

	Proportion of women who UNDERESTIMATED contraceptive effectiveness													
Method of contraception	Male condom		Female condom		Most reliable IUCD		Contraceptive implants		Combined oral contraceptive pill		Male sterilisation		Female sterilisation	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Group 1	6/12	42	0/12	0	5/12	42	5/12	42	10/12	83	4/12	33	10/12	83
Group 2	2/7	29	0/7	0	2/7	29	5/7	29	7/7	100	3/7	43	0/7	0
Group 3	2/13	15	0/13	0	9/13	69	12/13	92	12/13	92	5/13	38	0/13	0
Group 4	1/9	11	0/9	0	7/9	78	7/9	78	7/9	78	2/9	22	0/9	0

	Proportion of women who OVERESTIMATED contraceptive effectiveness													
Method of contraception	Male condom		Female condom		Most reliable IUCD		Contraceptive implants		Combined oral contraceptive pill		Male sterilisation		Female sterilisation	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Group 1	3/12	25	6/12	50	1/12	8	0/12	0	0/12	0	0/12	0	10/12	83
Group 2	0/7	0	4/7	57	3/7	43	0/7	0	0/7	0	0/7	0	6/7	86
Group 3	4/13	31	0/13	0	1/13	8	0/13	0	0/13	0	0/13	0	6/13	54
Group 4	3/9	33	7/9	100	0/9	0	0/9	0	0/9	0	0/9	0	8/9	89

Table 5 *Number of women rating the acceptability of bleeding irregularities on a scale from 1 to 5*

		Amenorrhoea					Frequent bleeding plus spotting					Prolonged bleeding				
	Score	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
	Number of women in group															
Group 1	12	1	5	0	5	1	0	4	1	6	1	0	1	0	4	7
Group 2	7	2	1	0	2	2	0	4	0	0	3	0	0	0	1	6
Group 3	13	1	8	0	3	1	0	1	0	11	1	0	0	0	1	12
Group 4	9	0	6	0	1	2	0	3	0	4	1	0	0	0	3	6

Key to score:
1 Very acceptable
2 Fairly acceptable
3 I have no opinion on this
4 Fairly unacceptable
5 Not at all acceptable

Prolonged bleeding

Prolonged bleeding was fairly acceptable to one woman from Group 1 (PWM). No other women, from any group, found this acceptable (Table 5):

"…drags you down."

"It's a contraception in itself!"

Over 95% of women stated that they would find prolonged bleeding unacceptable (Table 5), their reason being the effect on their well-being caused by increased tiredness and lethargy. Women who had previously experienced prolonged bleeding were more likely to consider it unacceptable.

Acceptability of weight change

Information was presented to women through six scenarios, each of which outlined a different degree of weight gain or loss. Women's ratings of the acceptability of weight change are shown in Table 6. Women were more willing to experience a weight loss than a weight gain (Table 6).

Weight gain. A weight gain of 3 kg over 1 year was found to be fairly acceptable to 25% of women in Group 1 (PWM), 42% in Group 2 (NPM), 15% in Group 3 (YPW) and 66% in Group 4 (US). However, a weight gain of 6 kg was only fairly acceptable to two women (22%) in Group 4 (US) and was not acceptable to any women in Groups 1, 2 or 3 (PWM, NPM, YPW). Only one woman (11%) in Group 4 (US) found a weight gain of 9 kg acceptable; no other woman in any group found this acceptable.

Weight loss

A weight loss of 3 kg over 1 year was found to be acceptable to the majority (at least 75%) of women in all groups (Table 6). A weight loss of 6 kg was acceptable to about 20–25% of women in Groups 1, 2 and 4, (PWM, NPM, US) and to 50% of women in Group 3 (YPW). A weight loss of 9 kg was acceptable to 25% of women in Group 1 (PWM), 57% in Group 2 (NPM), no woman in Group 3 (YPW) and 11% in Group 4 (US).

Women agreed that the acceptability of a weight gain or loss depended on a woman's original weight before starting a hormonal contraceptive. Most felt that a weight change of a couple of pounds was acceptable, though concerns were raised:

Table 6 *Acceptability of weight change to women using hormonal contraceptives*

WEIGHT GAIN		Number of women rating the acceptability of weight change on a scale from 1 to 5														
		Weight gain of 3 kg					Weight gain of 6 kg					Weight gain of 9 kg				
	Score	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
	Number of women in group															
Group 1	12	0	3	0	8	1	0	0	0	2	10	0	0	0	0	12
Group 2	7	0	3	1	3	0	0	0	1	2	4	0	0	1	0	6
Group 3	13	0	2	1	8	2	0	0	1	11	1	0	0	0	1	12
Group 4	9	0	6	0	3	0	0	2	0	4	3	0	1	0	1	7

WEIGHT LOSS																
		Weight loss of 3 kg					Weight loss of 6 kg					Weight loss of 9 kg				
	Score	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
	Number of women in group															
Group 1	12	4	6	1	1	0	2	1	0	8	1	2	1	0	1	8
Group 2	7	3	2	0	2	0	3	1	0	1	2	3	1	0	0	3
Group 3	13	8	3	0	2	0	3	3	0	6	1	0	0	0	1	12
Group 4	9	3	4	0	2	0	1	1	0	5	2	1	0	0	3	5

Key to score:
1 Very acceptable
2 Fairly acceptable
3 I have no opinion on this
4 Fairly unacceptable
5 Not at all acceptable

"With any weight loss... people worry don't they? Unless you're dieting..."

Though body image was one concern with weight change, women – particularly those in Groups 3 and 4 (YPW, US) – felt the effect the contraceptive was having on their body was a more important concern:

"It must be affecting your metabolism."

"...but still, it's affecting another part of your system that has nothing to do with getting pregnant."

Knowledge of and attitudes towards the risk of thrombosis

Women were asked to determine the risk of thrombosis in healthy women (neither using contraception nor pregnant), pregnant women and users of hormonal contraception. The risk of thrombosis associated with use of the combined oral contraceptive pill was used as an example. Data were not available for other hormonal methods of contraception.

Table 7 shows women's knowledge of the risk of thrombosis. The proportion of women who knew or correctly guessed the risk of thrombosis was greatest in Group 3 (YPW) and lowest in Group 4 (US) (Table 7).

The proportion of women who overestimated the risk of thrombosis in healthy women (who were neither pregnant nor users of hormonal contraception) varied between 54% and 89% (Table 7). The proportion of women who overestimated the risk for users of the combined oral contraceptive pill ranged between 38% and 100%, while for pregnant women it varied between 15% and 78% (Table 7). Higher proportions of women in Groups 3 and 4 (YPW, US) overestimated these risks than in the two groups of mothers. Up to one-third of women underestimated the risks during pregnancy or use of the combined oral contraceptive pill (Table 7).

One woman in Group 3 (YPW) was not aware that there was a risk of thrombosis with the use of hormonal contraceptives. All other women were aware that this risk existed. Women stated that they had heard of thrombosis through friends, family or adverse publicity in the media/press; few had received reliable information from other sources (e.g. pamphlets or healthcare professionals). Two women (Groups 2 and 4; NPM, US) knew of somebody who had died from a thromboembolism.

Most women from all groups were surprised by the lower risk of thrombosis during use of the contraceptive pill than during pregnancy:

"I thought it would be the other way around."

Only two women from the four focus groups (Group 4; US) had previously seen numerical information on the risk of thrombosis.

What information do women want?

Women from all groups wanted accurate information on the effectiveness of different contraceptive methods. Women from Groups 1, 3 and 4 (PWM, YPW, US) also required information on the associated risks and likelihood of occurrence of adverse health effects. Women from Group 2 (NPM), however, did not want numerical information on the risk of thrombosis to be presented to them.

Women from Groups 1, 3 and 4 (PWM, YPW, US) wanted as much information as possible so they could weigh up the pros and cons of each method and make an informed decision themselves. Women in Group 2 (NPM) wanted a personal approach to contraceptive advice and for contraceptive decisions to be made either with them or for them by a healthcare professional.

Women from Group 3 (YPW) were less concerned with the effectiveness of contraceptive methods than the adverse health risks (other than pregnancy) associated with them.

Table 7 *Women's knowledge of the risk of thrombosis*

Proportion of women who knew or correctly guessed the risk of thrombosis in:	Healthy women		Users of hormonal contraceptives		Pregnant women	
Group	Number	Percent	Number	Percent	Number	Percent
1	4/12	33	4/12	33	7/12	58
2	2/7	29	0/7	0	3/7	43
3	6/13	46	6/13	46	7/13	54
4	1/9	11	0/9	0	1/9	11
Proportion of women who overestimated the risk of thrombosis in:	**Healthy women**		**Users of hormonal contraceptives**		**Pregnant women**	
Group	Number	Percent	Number	Percent	Number	Percent
1	8/12	67	8/12	67	3/12	25
2	5/7	71	5/7	71	2/7	29
3	7/13	54	5/13	38	2/13	15
4	8/9	89	9/9	100	7/9	78
Proportion of women who underestimated the risk of thrombosis in:	**Healthy women**		**Users of hormonal contraceptives**		**Pregnant women**	
Group	Number	Percent	Number	Percent	Number	Percent
1	0/12	0	1/12	8	2/12	17
2	0/7	0	2/7	29	2/7	29
3	0/13	0	2/13	15	4/13	31
4	0/9	0	0/9	0	1/9	11

Note: Healthy women are non-users of hormonal contraception and are not pregnant.

Women in Group 4 (US) were also concerned with adverse health risks, though one-third (3/9) considered common effects such as weight change and bleeding irregularities to be more important to them than thromboembolism, since the risk of thromboembolism was small.

Discussion

Of the women who attended focus groups, younger women tended to use either the male condom, the Pill (or mini-pill), or a combination of the male condom with the Pill for contraception. In older women, use of the Pill declined and the coil increased; sterilisation was a popular choice once a woman's family had been completed.

When questioned about the level of effectiveness required from a contraceptive method, women who attended focus groups stated that they wanted their chosen method to be 100% effective. However, the majority of women acknowledged that current methods of contraception are not foolproof and that this level of effectiveness cannot be obtained. Only two women who had been sterilised thought their contraception was 100% effective.

Knowledge of contraceptive effectiveness varied between the groups (Table 3) and differed according to the method of contraception. From our results, it was possible to produce a rank order of the different methods of contraception according to the proportion of women knowing (or correctly guessing) their effectiveness; the method for which the greatest proportion of women provided the correct answer appears at the top of the rank order. The rank order is: male sterilisation, female condom,

male condom, IUCD, contraceptive implants, female sterilisation, combined oral contraceptive pill. This rank order indicates women's knowledge of the effectiveness of male sterilisation is good (63% gave the correct answer), whilst their knowledge of hormonal methods is poor (29% gave the correct answer for contraceptive implants, and 12% for the combined oral contraceptive pill).

Over estimations of the effectiveness of female sterilisation and under estimations of that of hormonal implants were made (Table 4). Fewer than 20% of women from Groups 1, 2 or 3 (PWM, NPM, YPW) knew or guessed the correct effectiveness of contraceptive implants, and nearly all (12/13) women from Group 3 (YPW) underestimated the effectiveness of hormonal contraception (both the Pill and implants). Two previous studies,[6,7] including a randomised trial,[6] have indicated women's knowledge of basic contraceptive issues to be variable; however, data on women's knowledge of contraceptive effectiveness were not available. The study by Taylor and colleagues also highlighted the importance to most women of avoiding pregnancy.[7]

Our study indicated that avoiding pregnancy was of importance to most women attending the focus groups, though some women stated that this was more important for women outside a stable relationship. However, contraceptive effectiveness was not considered to be the most important issue by some women. Most women were concerned about the possibility of adverse health effects associated with the use of hormonal contraceptives. Younger women (Groups 3 and 4; YPW, US) showed more concern than the two groups of mothers (Groups 1 and 2; PWM, NPM). Women in Group 3 (YPW) were more concerned about the adverse effects associated with a hormonal contraceptive than its level of effectiveness, though 50% of these women stated that they used the contraceptive pill despite their concerns because they could not afford (personally) to become pregnant.

The three hormone-associated adverse effects examined in this study were bleeding irregularities (amenorrhoea, frequent bleeding and prolonged bleeding), weight change (gain or loss), and thrombosis. Women's opinions regarding the acceptability of bleeding irregularities and weight change differed, both within and between focus groups.

Opinions on bleeding irregularities tended to differ according to whether women had experienced these effects before (whether the disruption was due to hormonal contraception or not). Women who had previously experienced amenorrhoea were less likely to consider amenorrhoea unacceptable, whereas women who had previously experienced prolonged bleeding were more likely to consider it unacceptable. Of the bleeding irregularities described to women, amenorrhoea was considered the most acceptable, though concerns over the possibility of pregnancy were raised by some group members (Table 5). Attitudes to frequent bleeding differed with about 50% of mothers (Groups 1 and 2; PWM, NPM) finding this acceptable, and more than two-thirds of younger women (Groups 3 and 4; YPW, US) scoring this as unacceptable. Over 95% of women stated that they would find prolonged bleeding unacceptable (Table 5), their reason being the effect on their well-being caused by increased tiredness and lethargy.

Attitudes to varying degrees of weight change (both gain and loss) also differed between focus groups. A weight increase of 3 kg was found to be fairly acceptable by 25%, 42% and 66% of women in Groups 1, 2 and 4 (PWM, NPM, US), respectively (Table 6). In contrast, few women (15%) in Group 3 (YPW) marked this as acceptable and most were unwilling to experience any weight gain (Table 6). Conversely, more women in Group 3 (YPW) marked a weight loss of up to 6 kg as acceptable.

Adverse effects have been cited as a major determinant of contraceptive acceptability and one of the main reasons for women discontinuing use of hormonal contraception.[4,5] Our findings indicate that women's main concerns about bleeding irregularities and weight change are the effects the contraceptive has on their metabolism and body functioning. These adverse effects were of particular concern to younger women (Groups 3 and 4; PWM, US) who wanted to know the likelihood of experiencing these adverse effects and their possible duration. Heightened concerns by younger women may be partially explained by a number of factors, including body image, increased awareness of adverse effects, increasing health consciousness and media publicity.

In addition to seeking information on common adverse effects, we also sought women's knowledge of the risk of thrombosis in healthy women not using hormonal contraception, pregnant women and users of hormonal contraception.

Only one woman did not previously know of the association between hormonal contraceptive use and thrombosis. Women tended to overestimate the risk of developing a thrombosis (Table 7); the risk was considered to be higher in users of hormonal contraception than in pregnant women by most focus group participants. Nearly all students overestimated the risk in all three categories (Table 7). When questioned about the information they had received previously, most women stated that they had heard of thrombosis through magazines, the media and friends or family. Few women had been provided with information on the risk of thrombosis during pregnancy.

In a previous study,[7] users of the oral contraceptive pill were identified from a practice register and invited to attend a focus group. In contrast to our findings, women were found to lack knowledge of the association between the contraceptive pill and thrombosis and showed that they were unaware of the possible symptoms.[7]

When questioned about the information they wanted to receive concerning adverse effects, younger women (YPW, US) wanted accurate and representative information on the risks of all adverse health effects (including thrombosis, weight change and bleeding irregularities). This type of information was requested for all hormonal methods of contraception. Students gave priority of importance to common effects, such as weight change and disruption to bleeding pattern, and considered the impact of these effects to be greater to them than the risk of developing a thrombosis. Women from Group 1 (PWM) and some members of Group 2 (NPM) thought information on the risk of rare effects (e.g. thrombosis) would be more useful for their children, and some women in Group 2 (NPM) stated that they did not want this information for themselves. Women's desire for, and the importance of, information on adverse effects has also been reported previously for users of the oral contraceptive pill.[7] The authors reported women's concerns about possible long-term effects of the Pill and their ratings of the need for information on these effects as either being important or very important to women.[7]

Our findings indicate that the level of education of women affects their information requirements. Women with a higher level of education wanted more information on both contraceptive effectiveness and the associated risks. These women considered it essential to have all the facts in

order to make an informed choice and wished, as far as possible, to make their own contraceptive decisions. Less educated women did not want information on the risks associated with contraceptives, wanted personalised advice and were content for a healthcare professional to make their contraceptive choices either for them or with them.

Conclusions

Women tend to overestimate the risks and underestimate the effectiveness of hormonal contraceptives. They are resistant to interference with their bleeding patterns and weight.

Life-stage, age, level of education and personal experience play an important role in women's knowledge of and attitudes towards contraception. We have shown that knowledge of hormonal contraceptive methods other than the Pill is relatively poor in young women, though their awareness of adverse health effects is greater than that of more mature women. Adverse effects are considered of importance to women in their contraceptive decision-making and have been cited as major reasons for determining a method's acceptability.[4,5]

Accurate and representative information on the effectiveness and risks of adverse health effects (common and rare) associated with hormonal contraceptives is required for women wishing to make evidence-based and informed decisions when choosing a method of contraception. However, this information is not readily available. Improving the quality and availability of information to women may help them choose a contraceptive method that meets their individual requirements for effectiveness, safety and convenience, in a form that is suitable to them (e.g., Pill, implant, IUCD). Poor knowledge of the contraceptive pill has been shown to put women at risk of pregnancy;[6] this may be the case for other contraceptive methods.

The provision of educational leaflets to women, when combined with questioning about contraception, has been shown to increase women's contraceptive knowledge.[6] Women deserve the right to be provided with quality information on which to make informed choices. Woman-informed choice is essential for the avoidance by women of methods of contraception that would be unacceptable to them. This may improve contraceptive compliance, reduce discontinuations of contraceptive use and, hence, reduce the number of unwanted pregnancies.[6]

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