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Current contraceptive trends among married Egyptian women: a cross-sectional survey

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ABSTRACT

Objective: The aim of our study was to assess the knowledge and attitudes of married Egyptian women towards the different methods of contraception, examining the role of employment and education in modulating contraceptive behaviour.

Methods: A cross-sectional survey was conducted among 2360 Egyptian women between 15 and 45 years of age who were attending outpatient clinics at a university hospital in Cairo between August 2017 and January 2018. The survey collected sociodemographic data as well as information on education, employment, knowledge about contraceptive methods, current and previous use of contraception, source of family planning advice and side effects from previous contraceptive use.

Results: The response rate was 90.2%. Current use of a contraceptive method was 38.3%. The intrauterine device (IUD) was the leading contraceptive method (50.7%), followed by oral contraceptives (OCs) (23.6%). Contraceptive prevalence was significantly higher among working women ($p < .001$), whose primary choice was OCs, while IUD use was significantly higher among non-working women ($p < .001$). Contraceptive prevalence was highest among women with secondary school education or higher (41.6%).

Conclusion: Both employment status and educational level of the surveyed women played a significant role in their contraceptive behaviour.

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Introduction

In developing countries, improvement of family planning and reproductive health programmes has markedly helped decrease the number of unwanted pregnancies [1]. Both the availability and quality of family planning services are believed to play an important role in the rise in contraceptive use and the decline in fertility rates in developing countries [2].

Family planning reduces unwanted pregnancies, thereby protecting women from high-risk pregnancies or unsafe abortions. It also leads to a reduction in the number of maternal deaths and helps in the prevention of cancer, sexually transmitted infections including HIV/AIDS [3]. A review of the literature shows the enormous advantages of good family planning, by reducing the high fertility rate that has been linked with underdevelopment in developing countries [4].

In 2014, the total Egyptian population reached 83.4 million people, rising from 27.9 million in 1960, corresponding to a 199% increase during the last 50 years [5]. Based on birth registration data, the Central Agency for Public Mobilization and Statistics (CAPMAS) calculated that the crude birth rate increased by 17% between 2008 and 2012, rising from 27.3 to 31.9 births per 1000 population [6]. Also, data from earlier surveys as well as from the 2013 EDHS show that the total fertility rate increased by 17% between 2008 and 2013, rising from 3.0 to 3.5 births per woman [7].

The Egyptian family planning programme started in the late 1960s but had no real impact until 1980. In 1980, contraceptive prevalence among women was less than 25%. By 1984, it had increased to around 30%. In 1988, it exceeded 33% and by 1992, 45% of women reported using a method of contraception.

The reason for contraceptive use is divided into either the desire to limit family size or the need to space pregnancies. In Egypt, according to the EDHS 2003 survey, among women using a contraceptive method, 40% aimed to limit the number of births, while only 10% desired spacing [8].

Egypt is a developing country with a high fertility rate and low use of contraception. In this study, we aimed to investigate the knowledge and attitudes of married Egyptian women towards the different methods of contraception, with a special focus on the role of work and educational level in modulating women's contraceptive behaviour.

Methods

A cross-sectional survey was conducted in the outpatient clinics, of all specialties, in Kasr El Aini Hospital, Cairo, from August 2017 to January 2018. The survey was approved by the Institutional Review Board of Cairo University. All participants agreed to take part in the survey after they had received a thorough verbal explanation of its nature. For participants who could not read or write, an attending

Table 1. Demographic characteristics of the study participants ($n = 2128$).

Characteristic	Value
Age in years, mean (SD)	30.75 (6.71)
Number of living children, mean (SD)	2.17 (1.33)
Number of desired children, mean (SD)	2.15 (1.34)
Education, n (%)	
None	149 (7)
Reading and writing	149 (7)
Primary	102 (4.8)
Secondary and above	1728 (81.2)
Employment status, n (%)	617 (29.0)

health care professional read the questions aloud in a neutral manner and wrote the participants' answers on the questionnaire sheet.

Married women aged 15–45 years who were not pregnant at the time of the survey were included. Postmenopausal or pregnant women and those who refused to participate in the survey were excluded from the study.

Participants were asked their current age, their age at first marriage, duration of the marriage, educational level, occupational status and number of living and desired children. Questions covering contraceptive attitudes were divided into three parts: the first included participants' knowledge about the different available methods of contraception, the second included their current contraceptive choice, and the third included their previous contraceptive use. A further two questions were also included: participants' source of advice when selecting or discontinuing a method of contraception, and the main side effects they had experienced the different contraceptive methods used.

Before the trial started, pilot testing of the questionnaire was performed among 25 eligible women to identify any misinterpretations or misconceptions in the survey questions. The questionnaire was initially written in English and then translated into colloquial Arabic to facilitate understanding. It took ~10 min to complete. Some of the questions were changed so that they could be answered by a simple tick.

Owing to the lack of previous studies assessing Egyptian women's level of knowledge about contraceptive methods, the sample size could not be formally calculated; therefore, the survey was distributed daily for six months among outpatient clinic attendees who fulfilled the inclusion criteria.

Results are presented as the mean \pm standard deviation (SD) for numerical variables, and number (%) for categorical variables. Microsoft Office Excel 2007 and IBM SPSS, version 21 (IBM, Armonk, NY), was used to analyse the results.

Results

The response rate to the questionnaire was 90.2%. Of the 2360 women who were invited to participate in the study, 2128 accepted and 168 declined. Excluded from the analysis were 64 incomplete questionnaires. Demographic data of the participants are shown in Table 1.

Knowledge of the different contraceptive methods is shown in Figure 1. The intrauterine device (IUD) was the best-known method (88.7%), followed by oral contraceptives (OCs) (87.2%). The least known method was the contraceptive vaginal ring (9.0%).

Table 2 shows the distribution of current and previous contraceptive use among the study population. Current

contraceptive prevalence was 38.3% ($n = 815$). The IUD was the most commonly used method (50.7% of current total contraceptive use), followed by OCs (23.6% of current total contraceptive use); none used an implant, surgical sterilisation or contraceptive vaginal ring as a method of contraception. Regarding previous contraceptive use, 811 women (38.1%) reported using a method of contraception throughout their life: 47.7% had used an IUD, followed by 15.5% who had used OCs.

Table 3 shows that health care professionals were the main source of family planning advice (69.2%), followed by family and friends (9.3%). Use of the internet was not popular among the surveyed women, as it was reported as a source of knowledge by only 6.8%.

Figure 2 shows the side effects that led to discontinuation of previous contraception or that affected current contraceptive choice. The most common side effects were: irregular vaginal bleeding (20.3%), backache (18.8%), weight gain (13.5%) and vaginal discharge (12.0%).

The impact of educational level on contraceptive behaviour is shown in Table 4. The highest number of actual and desired children was among those with only primary education, and the lowest was among those who had completed secondary or higher levels of education. Current contraceptive use was highest among women with secondary education, with the IUD being the most commonly used method, followed by OCs. Injectables, safe period, emergency contraception and condoms were only used by those with secondary education.

The relation between occupational status and contraceptive behaviour is shown in Table 5. Working women had a desired and significantly lower number of children compared with non-working women. There was a significant difference between the two groups (working and non-working women) regarding current contraceptive use in general ($p < .01$) and the specific use of OCs, emergency contraception and condoms ($p < .001$, $p < .009$ and $p < .001$, respectively).

Discussion

Findings and interpretation

The low prevalence of contraceptive use found among Egyptian women may be attributed to our selection criteria, as those seeking medical care in public hospitals usually have the following characteristics: rural residence, high total fertility rate, low education, low employment, extremes of reproductive age and parity, and a high rate of unmet contraceptive need (about 13%), including one-third who needed contraception for spacing and the rest for limiting pregnancies [7].

Another important factor is the autonomy of Egyptian women and their decision to use contraception. A national study in 2015 acknowledged the positive role of women's autonomy in their use of contraception [9]. It has been shown that if women are free to decide on household and budgetary matters and have freedom of movement they are more likely to use contraception [10].

Well-educated and wealthier women, on the contrary, tend to obtain their medical services through the private sector and pay for their contraception. Also, women living in urban areas usually have better access to a wider range of family planning services [11].

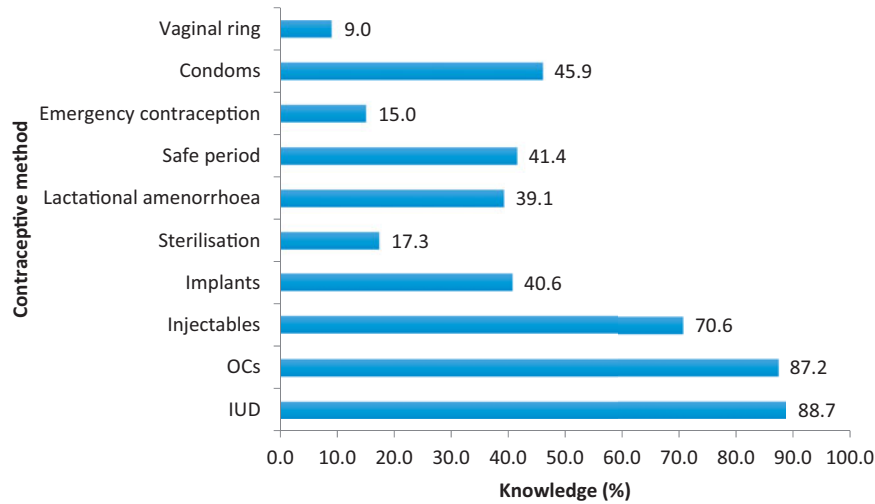


Figure 1. Knowledge of different contraceptive methods among study participants.

Table 2. Current and previous contraceptive use among the study participants ($n = 2128$).

Contraceptive method	Current use ($n = 815$; 38.3%)	Previous use ($n = 811$; 38.1%)
IUD	413 (50.7)	387 (47.7)
OC	192 (23.6)	126 (15.5)
Injectable	32 (3.9)	128 (15.8)
Implant	0 (0)	16 (2.0)
Sterilisation	0 (0)	0 (0)
Lactational amenorrhoea	34 (4.2)	64 (7.9)
Safe period	80 (9.8)	48 (5.9)
Emergency contraception	16 (2.0)	17 (2.1)
Male condom	48 (5.9)	11 (1.4)
Contraceptive vaginal ring	0 (0)	14 (1.7)

Results are expressed as n (%).

The IUD is considered the most widely used contraceptive method for a number of reasons: Egyptian gynaecologists are well trained to place IUDs, and there is also a widespread fear of the long-term use of hormonal contraception such as implants and injectables. In addition, the IUD is a long-term contraceptive method that can be used for pregnancy spacing as it is reversible. Health care professionals in Egypt usually explain to their patients the concept of short- vs. long-acting contraception. Women in need of pregnancy spacing for a short period of time are advised to use OCs, condoms or spermicides. Women requiring long-term contraception are advised to use IUDs, injectables or implants [12].

Differences and similarities in relation to other studies

Our results reflect those of the EDHS showing that the IUDs reached a prevalence of 37% in 2003 [8]. The IUD has been the most popular contraceptive method among Egyptian women since 1988. Before that, OCs were the leading method used by Egyptian women [8]. These two methods are well known to health care providers and are recommended by them. Although in recent years a wide variety of different contraceptive options have been introduced to the Egyptian market, women's lack of awareness of their availability has led to low usage, for example, the vaginal ring, which only 9.0% of participants knew about and 0% used.

Our results differ from those of a multicentre study performed in more developed countries (UK, Germany, Spain, Italy and the USA) which showed that the most commonly

Table 3. Source of contraceptive knowledge among the study participants ($n = 2128$).

Source of information	n (%)
Health care professionals	1472 (69.2)
Family/friends	198 (9.3)
Internet	144 (6.8)
Husband	140 (6.6)
Published articles	96 (4.5)
Pharmacists	64 (3.0)
Other	14 (0.7)

used contraceptive methods were OCs and condoms, and recommended better counselling about other available contraceptive options [13]. A Canadian survey reached the same conclusions, confirming that condoms and OCs were the most commonly used methods [14]. The explanation for the low use of the IUD was that trained health care providers were needed to insert them but may not be widely available in some parts of Canada.

The most commonly used methods in developing countries such as Cameroon were condoms, safe period, injectables and OCs [15]; in Nigeria they were condoms and OCs [16], and in Ethiopia, injectables and OCs [17]. Unfortunately, these studies did not investigate the reason behind the popularity of these methods among their study populations.

We found that the main source of knowledge and advice was health care providers. The CHOICE study (Contraceptive Health Research of Informed Choice Experience) reported that proper counselling of women aged 15–40 years seeking contraceptive advice from their health care provider resulted in more than 40% of women changing their initial choice of hormonal contraception in light of the counselling they had received [18]. Therefore, the lack of knowledge about and the low use of some methods of contraception may be attributed to the lack of proper counselling.

A Nigerian study found that the factors behind low contraceptive use were: low educational levels, extremes of reproductive age and parity, fear of side effects, lack of knowledge, lack of spousal consent, poor level of health care provider training and lack of relevant information supplied to women [16]. These circumstances are similar to those found in the Egyptian population.

Regarding the impact of employment and contraception on contraceptive choice, there are limited resources to compare with the results of our study. To the best of our

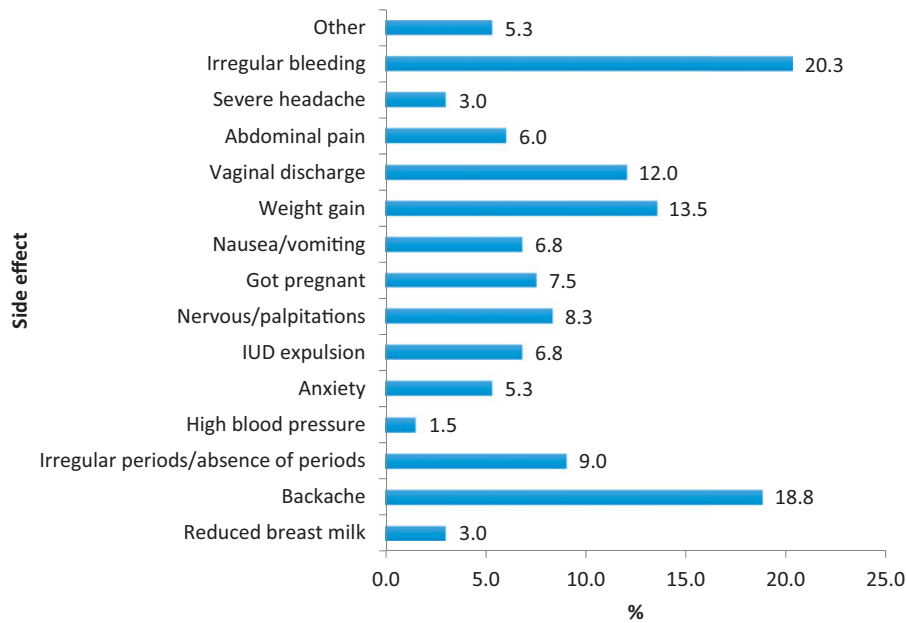


Figure 2. Previous side effects from contraceptive use reported by study participants.

Table 4. Relation between level of education and contraceptive behaviour among the study participants ($n = 2128$).

Contraceptive behaviour	Level of education				<i>p</i> Value
	No education ($n = 149$)	Reading and writing ($n = 149$)	Primary ($n = 102$)	Secondary ($n = 1728$)	
Number of living children	2.94 ± 1.75	2.71 ± 1.45	3.76 ± 1.51	1.9 ± 1.1	<.001
Ideal number of children	2.37 ± 1.86	2.34 ± 1.85	3.29 ± 2.05	2.05 ± 1.16	<.001
Current contraceptive use ($n = 815$)	34 (4.2)	51 (6.3)	10 (1.2)	720 (88.3)	<.001
OCs	0 (0)	33 (64.7)	10 (100)	149 (20.7)	
IUD	34 (100)	18 (35.3)	0 (0)	361 (50.1)	
Injectables	0 (0)	0 (0)	0 (0)	32 (4.4)	
Lactational amenorrhoea	0 (0)	0 (0)	0 (0)	34 (4.7)	
Safe period	0 (0)	0 (0)	0 (0)	80 (11.1)	
Emergency contraception	0 (0)	0 (0)	0 (0)	16 (2.2)	
Condoms	0 (0)	0 (0)	0 (0)	48 (6.7)	
Previous contraceptive use ($n = 811$)	85 (10.5)	102 (12.6)	39 (4.8)	585 (72.1)	<.001
OCs	17 (20.0)	4 (3.9)	5 (12.8)	100 (17.1)	
IUD	35 (41.2)	75 (73.5)	22 (56.4)	255 (43.6)	
Injectables	19 (22.4)	23 (22.5)	3 (7.7)	83 (14.2)	
Implants	8 (9.4)	0 (0)	6 (15.4)	2 (0.3)	
Lactational amenorrhoea	4 (4.7)	0 (0)	2 (5.1)	58 (9.9)	
Safe period	0 (0)	0 (0)	0 (0)	48 (8.2)	
Emergency contraception	2 (2.4)	0 (0)	1 (2.6)	14 (2.4)	
Condoms	0 (0)	0 (0)	0 (0)	11 (1.9)	
Vaginal ring	0 (0)	0 (0)	0 (0)	14 (2.4)	
Source of advice					<.001
Health professionals	99 (66.4)	131 (87.9)	79 (77.5)	1163 (67.3)	
Internet	0 (0)	0 (0)	21 (20.6)	123 (7.1)	
Husband	15 (10.1)	4 (2.7)	0 (0)	121 (7.0)	
Family/friends	23 (15.4)	12 (8.1)	2 (2.0)	161 (9.3)	
Articles/books	0 (0)	0 (0)	0 (0)	96 (5.6)	
Pharmacist	0 (0)	0 (0)	0 (0)	64 (3.7)	
Other	12 (8.1)	2 (1.3)	0 (0)	0 (0)	

Results are expressed as mean ± SD or n (%).

A p Value <.05 was considered significant.

knowledge, ours is the first study to address the impact of those two factors on contraceptive choices in Egypt.

As the IUD is the most known and used contraceptive method among Egyptian women, the most common side effects were those particular to IUD use: irregular vaginal bleeding (20.3%), followed by backache (18.8%).

Relevance of the findings: implications for policy-makers and health care providers

Total contraceptive use was found to be about 38.3%, which is quite unsatisfactory in light of the high level of awareness of some of the available contraceptive methods.

Better education and continuous updating of primary health care providers' knowledge and skills should be addressed so that they may deliver correct and sound contraceptive advice.

Strengths and weaknesses of the study

The strengths of the study lie in its inclusion of a large number of participants, as well as its focus on an important issue: contraceptive prevalence and preference among married Egyptian women.

The study has several limitations. First, the design itself being cross-sectional has a number of disadvantages, as it

Table 5. Relation between employment and contraceptive behaviour (current and previous use and source of advice) among the study participants ($n = 2128$).

Contraceptive behaviour	Employment		<i>p</i> Value
	Yes ($n = 617$)	No ($n = 1511$)	
Number of living children	1.72 ± 1.18	2.25 ± 1.30	<.001
Ideal number of children	1.89 ± 1.17	2.24 ± 1.38	.01
Current contraceptive use ($n = 815$)	262 (42.5)	553 (36.6)	.01
OCs	94 (35.9)	98 (17.7)	<.001
IUD	79 (30.2)	334 (60.4)	<.001
Injectables	12 (4.6)	20 (3.6)	.33
Lactational amenorrhoea	2 (0.8)	32 (5.8)	<.001
Safe period	32 (12.2)	48 (8.7)	.03
Emergency contraception	10 (3.8)	6 (1.1)	.009
Condoms	33 (12.6)	15 (2.7)	<.001
Previous contraceptive use ($n = 811$)	418 (51.5)	393 (48.5)	<.001
OCs	62 (14.8)	64 (16.3)	<.001
IUD	210 (50.2)	177 (45.0)	<.001
Injectables	89 (21.3)	39 (9.9)	<.001
Implants	9 (2.2)	7 (1.8)	.02
Lactational amenorrhoea	4 (1.0)	60 (15.3)	.001
Safe period	18 (4.3)	30 (7.6)	.19
Emergency contraception	9 (2.2)	8 (2.0)	.05
Condoms	8 (1.9)	3 (0.8)	.003
Vaginal ring	9 (2.2)	5 (1.3)	.005
Source of advice			
Health professionals	460 (74.6)	1012 (67.0)	<.001
Internet	38 (6.2)	106 (7.0)	.51
Husband	39 (6.3)	101 (6.7)	.85
Family/friends	39 (6.3)	159 (10.5)	.002
Articles/books	29 (4.7)	67 (4.4)	.82
Pharmacist	11 (1.8)	53 (3.5)	.03
Other	1 (0.2)	13 (0.9)	.08

Results are expressed as mean ± SD or n (%).
A p Value <.05 was considered significant.

could not analyse behaviour over a period of time nor determine cause and effect. Also, the short duration of the study might have affected the results. Second, the questionnaire was not tested for reliability. Third, by questioning only married women, it is not possible to provide a full and comprehensive assessment of contraceptive use in Egyptian society. For cultural reasons, it is difficult to assess contraception in unmarried women. Finally, our study did not explore the reasons behind the attitudes adopted by the surveyed women: for example, why they were using or not using contraception, what were the most important factors in choosing their method of contraception, and whether they found any obstacles in obtaining contraception.

Open questions and future research

Future research should be directed towards finding the reasons behind the low contraceptive prevalence among Egyptian women and should address the reasons that led to their contraceptive choices.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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