

Women in Cairo, Egypt and their risk factors for unmet contraceptive need: a community-based study

Mohammed Mahmoud Kotb, Iman Bakr, Nanees A Ismail, Naglaa Arafa, Mohamed El-Gewaily

Department of Community, Environmental and Occupational Medicine, Faculty of Medicine, Ain Shams University, Egypt

Correspondence to

Dr Naglaa A Arafa, Department of Community, Environmental and Occupational Medicine, Faculty of Medicine, Ain Shams University, Egypt; naglaaarafa@yahoo.com

Received 19 February 2010

Accepted 11 June 2010

Abstract

Background and methodology Although modern family planning methods are readily available in Egypt at low cost, a considerable proportion of women still have an unmet contraceptive need. The aim of this study was to detect the risk factors of unmet contraceptive need among married women in the childbearing period in an underprivileged area in Cairo with high population density. A survey of 2340 women in the Marg district of Eastern Cairo was conducted by means of home interviews. For every woman identified as having an unmet contraceptive need ($n=174$), the next two women identified with met contraceptive need were selected as controls ($n=348$).

Results The prevalence of unmet need was 7.4%. Risk factors identified were: belief that contraception is religiously prohibited (OR 2.08, 95% CI 1.06–4.09); poor interspousal communication about the desired number of children (OR 2.59, 95% CI 1.40–4.79); husband opposition to contraceptive use (OR 2.96, 95% CI 1.47–5.97); a previous history of unwanted pregnancy (OR 2.98, 95% CI 1.73–5.14); and experiencing side effects from previous contraceptive use (OR 5.69, 95% CI 3.46–9.37).

Conclusions The authors propose training physicians to identify and counsel women who experience contraceptive side effects and/or a previous unwanted pregnancy, as well as the transmission of clear media messages on the religious acceptability of contraceptive use.

Introduction

Rates of contraceptive use have increased recently in most developing countries, as has the desire of most married couples for smaller families.¹ However, an estimated 17% of married women in the developing world still have an unmet need for contraception, defined as use of no contraceptive method in spite of sexual exposure and an expressed desire

Key message points

- ▶ Efficient counselling by health care providers on the side effects of contraceptive use may reduce discontinuation rates, and thus unmet need.
- ▶ Clear media messages on the acceptability of family planning in Islam may reduce opposition to contraceptive use.

to avoid pregnancy.² Women identified as having an unmet need include those who expressed a desire to postpone their next birth for more than 2 years (spacing) as well as those who wish to have no more children (limiting). Women who are pregnant or have postpartum amenorrhoea who report that their pregnancy was unintended (either mistimed or unwanted) are also classified as having an unmet need.¹ Unintended pregnancy is an important public health issue in both developed and developing countries because of its negative association with social and health outcomes for both mothers and children.³

Numerous risk factors for unmet need in developing countries have been identified. In Egypt, perceived low risk of fertility (infrequent or no sex, infecundity, postpartum amenorrhoeic, or breastfeeding), fear of the side effects of contraception, lack of knowledge of family planning methods and husband opposition have been reported.^{4,5}

Understanding the underlying reasons of unmet contraceptive need will help to reduce the number of unwanted pregnancies and reduce the birth rate of Egyptian women.

Subjects and methods

The study aim was to identify the risk factors of unmet contraceptive need among married women in the childbearing period in an underprivileged district in Cairo. The study was conducted in the Marg district in Eastern Cairo, which is

an underprivileged district of high population density. A household survey of 2340 currently married women between the ages of 15 and 49 years was conducted. For every woman identified as having an unmet contraceptive need ($n=174$), the next two women identified with met contraceptive need were selected as controls ($n=348$).

The following operational definitions were used in the study. A woman with unmet contraceptive need (i.e. a case) was a married woman who was: pregnant and who stated that the pregnancy was unwanted or mistimed; or amenorrhoeic after delivery and who stated that the last delivery was unwanted or mistimed; or neither pregnant nor amenorrhoeic and who was not using a contraceptive despite a stated desire to either space their pregnancy for another 2 years, or to limit their number of children.⁴ A woman with a met contraceptive need (i.e. a control) was defined as a married woman using a contraceptive method at the time of the interview, either for spacing or limiting.

A pretested, closed-ended interview questionnaire was applied to both cases and controls, and was completed during home visits by trained female health visitors. The questionnaire included sociodemographic data; previous unintended pregnancies; status of the woman during interview (whether pregnant, in puerperium or non-pregnant); knowledge of contraceptive methods; fertility preferences; and current and previous use of contraceptive methods. It also included interspousal discussion of contraception; religious beliefs regarding acceptability of contraceptive use; beliefs of health risks associated with contraceptive use, and actual experience thereof; and utilisation and opinion of health care services.

An informed consent was taken from the study participants after explaining the aim of the study and ensuring the confidentiality of the data.

Statistical analysis

The prevalence of unmet need was calculated by dividing the number of women with unmet need by the total number of married woman between the ages of 15 and 49 years surveyed. Parametric (Student's *t*-test) and non-parametric (Mann-Whitney *U* test) statistical tests were employed to analyse the quantitative study data. The Chi-square (χ^2) test was used to compare qualitative variables. Multivariable logistic regression was performed on the 487 women who had ever used contraception, for all risk factors found significant at the 0.10 level on univariate analysis, controlling for age as follows: <25, 25–29, 30–34, 35–40 and ≥ 40 years. All data analyses were done using Stata software (version 8.0) (StataCorp LP, College Station, TX, USA).

Results

A total of 2340 married women were surveyed in the study. Their mean age was 31.4 (SD 7.4) years; 88.0% were housewives, and 35.5% were illiterate.

One hundred and seventy-four women were identified as having an unmet need for contraception, giving a prevalence rate of 7.4%, of whom 81 (46.6%) had an unmet need for spacing, and 93 (53.4%) had an unmet need for limiting.

Cases ($n=174$) and controls ($n=348$) shared a similar sociodemographic profile, with no statistically significant differences between them. Regarding religious background, 169 (97.1%) cases and 327 (94.0%) controls were Muslims. There was no difference in the educational level of the husbands of cases and controls. However, cases were significantly more likely to have had a previous unwanted pregnancy than controls (Table 1).

All controls had knowledge of where to obtain contraceptives, compared to only 77% of cases ($p<0.001$). Cases had significantly lower knowledge of various types of contraceptives, and were significantly less likely than controls to receive their knowledge of contraceptive methods from physicians or health assistants, and more likely to receive their knowledge from television or neighbours and relatives. Cases were significantly less likely than controls to have attended health education seminars on family planning (Table 2).

Regarding religious beliefs, a statistically significantly lower proportion of cases believed that contraceptive use was religiously accepted (*halal*), compared to controls (50% vs 76%). Some 68% of cases responded that contraceptive use may be associated with adverse effects compared to only 40% of controls (Table 2). Cases and controls showed similar levels of previous use of all contraceptive methods except for the intrauterine device (IUD), which was used more by the controls. However, cases were more likely to have experienced complications associated with contraceptive use (80% vs 35%), especially for the use of IUDs and injectable contraceptives (Table 2).

Table 1 Sociodemographic characteristics of women in the studied groups

Characteristic	Cases ($n=174$)	Controls ($n=348$)	<i>p</i>
Woman's age in years [mean (SD)]	31.5 (7.1)	32.0 (6.9)	0.507
Number of children [median (IQR)]	3 (2, 4)	3 (2, 4)	0.583
Number of sons [median (IQR)]	1 (1, 2)	1 (1, 2)	0.073
Number of daughters [median (IQR)]	1 (1, 2)	1 (1, 2)	0.127
Previous unwanted pregnancy [<i>n</i> (%)]	63 (36.2)	38 (10.9)	<0.001
Woman's occupation [<i>n</i> (%)]			
Housewife	151 (86.8)	306 (87.9)	
Working	23 (13.2)	42 (12.1)	0.708
Women's education [<i>n</i> (%)]			
Illiterate/read and write	68 (39.1)	118 (33.9)	
School	91 (52.3)	181 (52.0)	0.158
University	15 (8.6)	49 (14.1)	

IQR, interquartile range; SD, standard deviation.

Interspousal communication was deficient among cases as compared to controls. Cases were significantly less likely to have discussed contraceptive use, and desired number of children in the family, with their husbands. Cases were significantly less likely than controls to report that the decision to have children was taken as a couple. 14.1% of cases stated that the husband was undecided on having more children, compared to only 6.3% of controls. Finally, a statistically larger proportion of husbands of cases opposed the use of contraception, compared to husbands of controls (Table 3).

No statistically significant differences were found in family planning service utilisation between the two groups. More than 85% of both cases and controls used the government primary health centres, with the remainder using private clinics and pharmacies. Both cases and controls reported similarly high (>70%) levels of satisfaction with the services. Family planning services were highly accessible, with more than 80% of study subjects able to arrive by walking, and more than 90% arriving within half an hour. Only 4.7% of cases and 2.9% of controls found the services expensive.

Finally, 83% of both cases and controls found the waiting time to see the health provider satisfactory (data not shown).

Logistic regression analysis revealed that the strongest independent risk factors for unmet contraceptive need were previously experiencing an adverse effect from contraceptive use, followed by previous unwanted pregnancy, husband opposition to contraceptive use, not discussing the desired number of children in the family with the husband and, finally, either believing that contraceptive use is religiously unacceptable (*haram*), or not knowing the religious position (Table 4).

Discussion

Factors identified as determinants of unmet need have included access and quality of available health care services, health concerns about contraceptive use, social and familial opposition, especially from husbands, and a low perceived risk of pregnancy.^{1 5 6}

The prevalence of unmet contraceptive need in this community-based study was 7.4%, which is lower

Table 2 Knowledge, beliefs and practice of family planning in the studied groups

Variable	Cases [n (%)]	Controls [n (%)]	p
Knowledge			
Different methods of contraception			
Oral contraceptive pill	159 (91.4)	346 (99.4)	<0.001
Intrauterine device	165 (94.8)	343 (98.6)	0.013
Injectable hormonal contraceptive	152 (87.4)	327 (94.0)	0.009
Intradermal implant	103 (59.2)	234 (67.2)	0.070
Condom	67 (38.5)	172 (49.4)	0.018
Breastfeeding	24 (13.8)	60 (17.2)	0.312
Main sources of knowledge of family planning methods			
Television	54 (31.0)	92 (26.4)	
Doctor	52 (29.9)	143 (41.1)	
Nurse	15 (8.6)	18 (5.2)	0.034
Health assistant and outreach services	19 (10.3)	48 (13.5)	
Neighbours and relatives	34 (19.5)	47 (13.5)	
Previous attendance of family planning seminars	48 (27.6)	147 (42.2)	<0.001
Beliefs			
Religious beliefs regarding contraceptive use			
Accepted (<i>halal</i>)	88 (50.6)	259 (76.1)	
Not accepted (<i>haram</i>)	36 (20.7)	35 (10.1)	<0.001
Don't know	50 (28.7)	48 (13.8)	
Belief that contraceptive methods may be associated with adverse effects	119 (68.4)	139 (39.9)	<0.001
Contraceptive use			
Previous use of contraceptive methods			
Oral contraceptive pill	62 (35.6)	109 (31.3)	0.323
Intrauterine device	98 (56.3)	286 (82.2)	<0.001
Injectables	38 (21.8)	76 (21.8)	1.0
Previous complication from use of*			
Oral contraceptive pill	30/62 (48.4)	38/109 (34.9)	<0.001
Intrauterine device	61/98 (62.2)	17/286 (5.9)	0.082
Injectable hormonal contraceptive	29/38 (76.3)	19/76 (25.0)	<0.001
Any contraceptive method	108/135 (80.0)	121 (34.8)	<0.001

*Calculated only for those ever using contraceptives, and according to type of method.

Table 3 Interspousal discussion of contraceptive use and fertility preferences of women in the studied groups

Variable	Cases [n (%)]	Controls [n (%)]	p
Discussion of contraception use			
Always	32 (18.4)	85 (24.4)	
Sometimes	91 (52.3)	199 (57.2)	0.013
Never	51 (29.3)	64 (18.4)	
Agreement on the desired number of children			
Agree	83 (47.7)	224 (64.4)	
Don't agree	47 (27.0)	61 (17.5)	0.001
Don't discuss	44 (25.3)	43 (12.4)	
Decision-maker about number of children in family			
Both wife and husband	86 (49.4)	228 (65.5)	
Wife	21 (12.1)	27 (7.8)	<0.001
Husband	56 (32.2)	88 (25.3)	
Others	11 (6.3)	5 (1.4)	
Husband desires more children (n=107)*			
Yes	33 (30.8)	102 (29.3)	
No	59 (55.1)	224 (64.4)	0.028
Undecided	15 (14.1)	22 (6.3)	
Husband opposes contraception use	37 (21.3)	22 (6.3)	0.001

*Asked only for women who were neither pregnant nor in puerperium.

Table 4 Age-adjusted logistic regression analysis of independent risk factors of unmet contraceptive health needs, for women who had ever used contraceptives (n=487)

Variable	OR	95% CI	p
Agreement between husband and wife about desired number of children			
Agree	1		
Don't agree	1.54	0.86–2.78	0.148
Don't discuss the issue	2.59	1.40–4.79	0.002
Religious beliefs regarding contraceptive use			
Accepted (<i>halal</i>)	1	1	
Unaccepted (<i>haram</i>)	2.08	1.06–4.09	0.035
Don't know	2.15	1.17–3.97	0.014
Husband opposition to contraceptive use	2.96	1.47–5.97	<0.001
Previous unwanted pregnancy	2.98	1.73–5.14	<0.001
Previous side effects from contraceptive use	5.69	3.46–9.37	<0.001

CI, confidence interval; OD, odds ratio.

than the level of 13% found in an area of similarly low socioeconomic level.⁷ However, it is similar to the national level (9.2%) found by the most recent Egypt Demographic and Health Survey (EDHS 2008).⁸

In this study, cases and controls were similar in almost all sociodemographic factors. No significant difference was noted between cases and controls as regards level of education, although many authors reported that less-educated women face more obstacles to using contraception.^{7,9} However, the EDHS 2008 revealed that generally the rate of unmet need remains relatively constant regardless of educational level.⁸ This may be due to comprehensive family planning services provided to the general public by the Ministry of Health in Egypt, which is able to deliver these services to a large segment of the population, irrespective of

their socioeconomic status. Other investigators have reported that socioeconomic differentials in contraceptive use become smaller in countries where contraceptives are widely available and accessible.¹⁰

An important finding of this study was that cases were more likely to have a previous unwanted pregnancy than controls (OR 3.03, 95% CI 1.8–5.2). This finding agrees with that of Magadi, who reported that women who have experienced an unwanted birth are highly likely to have this repeated,¹¹ and provides an opportunity for the identification of women with unmet need by health care providers.

Cases were less likely than controls to report that their main source of knowledge of family planning was from physicians. Other investigators have reported that non-users were less likely to have heard of family

planning from a health care provider.¹² Adhikari *et al.* found that women who had a higher level of knowledge about family planning methods were less likely to experience unintended pregnancy.³ This agrees with the present study as attending seminars on family planning was higher among the met need than the unmet need group.

Fear of experiencing adverse effects from contraception has been frequently reported as a reason for unmet need of contraception,^{7 8 13–16} Interviews in Egypt, Nepal, Pakistan and Zambia reveal that fear of the health side effects of contraceptives dissuades women from using a method, not only because of the physical complications, but also because of the expected time and financial costs of managing the side effects, the potential loss of labour productivity, the possibility of interference with spousal sexual relations and a sense that the side effects signify divine disapproval.¹⁶ In addition, our findings show that on multivariable logistic regression analysis, the strongest independent risk factor for unmet need was the respondent's actual previous experience of an adverse effect from contraceptive use. Experiencing menstrual side effects has a significant impact on contraceptive discontinuation,¹⁷ which may be later associated with an unmet contraceptive need due to fear of recurrence. Our study respondents with unmet need reported experiencing side effects due to injectable contraceptive and IUD use; this agrees with data from the EDHS 2008, where the highest rates of discontinuation among ever-users of contraceptives was for women who had experienced side effects due to either IUDs or injectable contraceptives.⁸ This actual experience of an adverse effect appears to be more important than fears of an adverse effect in influencing unmet need; it also gives health care providers a tangible method to identify women with a possible future unmet need, and with effective, appropriate counselling, to provide a suitable alternative method.

This study found that belief that contraception is religiously prohibited is a predictor of unmet need, consistent with results obtained in other Muslim countries.^{7 12 14} The Slow Fertility Transition Study of Egypt reported that almost 20% of respondents believed that religious leaders do not support family planning, believing it to interfere with God's will.⁵ Similarly, men in Pakistan also perceived that religious leaders are against family planning.¹⁸ This indicates the need for close co-operation between family planning programmes, religious authorities and the media, to emphasise the Islamic acceptance of contraceptive use to the public. It is advisable to involve local religious leaders as well, as community-level research has shown this to be an important means to improve the effectiveness of family planning programmes in communities.¹⁸

Deficient interspousal communication about contraceptive use and the desired number of children was an

important risk factor for unmet need on multivariate analysis. Interestingly, on multivariate logistic regression, non-discussion of the desired number of children in the family was a more important risk factor for unmet need than disagreement on the number of the children. This suggests that recognition of this disagreement by women in this study enabled them to take the decision to postpone or limit childbearing. Non-discussion of family planning between husband and wife has been found to be associated with unmet need.¹⁹ Moreover, in some instances, husbands and wives have different perceptions of their unmet need,²⁰ with wives believing that they have an unmet need while their husbands do not. Previous studies have shown that better interspousal communication is correlated with increased contraceptive use.^{12 19 21}

Husband opposition is another important risk factor for unmet need. Some 21.3% of women with unmet need faced their husbands' opposition compared to only 6.3% of the met need group. This is repeatedly found in many different studies, in diverse cultures and countries such as Jordan, the Philippines, Rwanda and Honduras, as well as in Egypt.^{9 13 19 21 22}

High levels of utilisation of, and satisfaction with, family planning health services were recorded among both cases and controls. This may be because in the small, urban district studied, with high provision of government-provided family planning services, little differences are found in the quality and accessibility of the health services available. Furthermore, literature exists demonstrating that unmet need is driven mainly by health concerns and societal opposition, rather than quality of services.^{13 22}

In addition to other risk factors previously reported, our study findings showed that a high proportion of women with unmet need (73%) had actually used contraceptive methods previously, similar to the proportion of ever use in Egypt (79%).⁸ This indicates that many women with unmet need, at least at some point in their reproductive life, were willing to use contraceptives. In addition, a high proportion reported previously experiencing complications related to contraceptive use. This, as well as the data on previous unwanted pregnancy, confers health care providers with an important tool to identify women who are at risk of having a future unmet need. The study findings also indicate that concerted efforts should be directed by family planning programmes to men and to the general population to reduce their opposition to contraception use, and to assure them of the acceptability of family planning in Islam.

Recommendations

Training physicians to identify and counsel women who experience contraceptive complications and/or previous unwanted pregnancy, and clear media messages on the religious acceptability of contraceptive use, may help reduce the prevalence of unmet need.

Funding The study was supported by a financial grant from the National Population Council of Egypt.

Competing interests None.

Ethical approval The study was approved by the ethical committee of medical research from the Egyptian Ministry of Health and Population (No. 180, 1/1/2009).

Provenance and peer review Not commissioned; externally peer reviewed.

References

- Westoff CF, Bankole A. The potential demographic significance of unmet need. *Int Fam Plan Perspect* 1995;22:16–20.
- Ross JA, Winfrey WL. Unmet need for contraception in the developing world and the former Soviet Union: an updated estimate. *Int Fam Plan Perspect* 2002;28:138–143.
- Adhikari R, Soonthornhadha K, Prasartkul P. Correlates of unintended pregnancy among currently pregnant married women in Nepal. *BMC Int Health Hum Rights* 2009;9:17.
- El-Zanaty F, Way A. *Egypt Demographic and Health Survey, 2005*. Cairo, Egypt: Ministry of Health and Population, National Population Council, El-Zanaty and Associates, and ORC Macro; 2006.
- Casterline J, Roushdy R. *Slow Fertility Transition in Egypt*. Population Council of Egypt, Cairo Demographic Center. 2007. http://www.popcouncil.org/pdfs/Egypt_SFT.pdf [accessed 11 June 2010].
- Bongaarts J, Bruce J. The causes of unmet need for contraception and the social content of services. *Stud Fam Plann* 1995;26:57–75.
- Kotb MM, Ismail NA, Ramy AR, et al. Unmet need for family planning in a slum area of Cairo governorate: its prevalence and underlying causes: a population based study. *Ain Shams Med J* 2004;4:465–491.
- El-Zanaty F, Way A. *Egypt Demographic and Health Survey, 2008*. Cairo, Egypt: Ministry of Health, El-Zanaty and Associates, and Macro International; 2009.
- Mawajdeh S. Demographic profile and predictors of unmet need for family planning among Jordanian women. *J Fam Plann Reprod Health Care* 2007;33:53–56.
- Khadr Z. Monitoring socioeconomic inequity in maternal health indicators in Egypt: 1995–2005. *Int J Equity Health* 2009;8:38.
- Magadi MA. Unplanned childbearing in Kenya: the socio-demographic correlates and the extent of repeatability among women. *Soc Sci Med* 2003;56:167–178.
- Pasha O, Fikree F, Vermund S. Determinants of unmet need for family planning in squatter settlements in Karachi, Pakistan. *Asia Pac Popul J* 2001;16:93–108.
- Casterline JB, Perez AE, Biddlecom AE. Factors underlying unmet need for family planning in the Philippines. *Stud Fam Plann* 1997;28:173–191.
- Shah MA, Shah NM, Chowdhury RI, et al. Unmet need for contraception in Kuwait: issues for health care providers. *Soc Sci Med* 2004;59:1573–1580.
- Bhattacharya SK, Ram R, Goswami DN, et al. Study of unmet need for family planning among women of reproductive age group attending immunization clinic in a medical college of Kolkata. *Indian J Community Med* 2006; 31: 2006-04–2006-06.
- Casterline J, Sinding S. Unmet need for family planning in developing countries and implications for population policy. *Popul Dev Rev* 2000;26:691–723.
- Tolley E, Loza S, Kafafi L, et al. The impact of menstrual side effects on contraceptive discontinuation: findings from a longitudinal study in Cairo, Egypt. *Int Fam Plan Perspect* 2005;31:15–23.
- El Hamri N. Approaches to family planning in Muslim communities. *J Fam Plann Reprod Health Care* 2010;36: 27–31.
- Ndaruhuye DM, Broekhuis A, Hooimeijer P. Demand and unmet need for means of family limitation in Rwanda. *Int Perspect Sex Reprod Health* 2009;35:122–130.
- Yadav K, Singh B, Goswami K. Unmet family planning need: differences and levels of agreement between husband-wife, haryana, India. *Indian J Community Med* 2009;34:188–191.
- Giusti C, Vignoli D. Determinants of contraceptive use in Egypt: a multilevel approach. *Stat Methods Appl* 2006;15: 89–106.
- Speizer IS, Irani L, Barden-O'Fallon J, et al. Inconsistent fertility motivations and contraceptive use behaviors among women in Honduras. *Reprod Health* 2009;6:19.