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**Abstract**

**Background**: Misconceptions about modern contraceptives affect their use in low- and middle-income countries.

**Aims**: This study aimed to determine the prevalence of myths about modern contraceptives and their association with ever and current use of contraceptives by women in Minia, Upper Egypt.

**Methods**: This was a cross-sectional study of 1212 married Egyptian women aged 18–49 years attending urban and rural health centres in Minia. Data were collected using a structured interview questionnaire and analysed by logistic regression analysis; odds ratios (OR) and 95% confidence intervals (CI) were calculated.

**Results**: Most of the women (88.7%) had one or more misconceptions about contraceptives. The most prevalent misconceptions were that birth control pills cause cancer and intrauterine devices (IUDs) can penetrate the uterus and move to the heart. The current use of birth control pills and IUDs was significantly lower in women with misguided beliefs than those without such beliefs; adjusted OR = 0.59 (95% CI: 0.37–0.90) and adjusted OR = 0.50 (95% CI: 0.34–0.76) respectively. Belief in an increasing number of myths was associated with lower odds of ever use of birth control pills: OR = 0.72 (95% CI: 0.57–0.96), OR = 0.61 (95% CI: 0.43–0.91), OR = 0.48 (95% CI: 0.29–0.69) and OR = 0.43 (95% CI: 0.24–0.63) in women with 1, 2, 3 and ≥ 4 misconceptions versus those with none.
Conclusions: Myths about contraceptives are common in women in Minia and may have a significant effect on their choice and use of contraceptive method. Reproductive health programmes to refute such misguided beliefs are recommended.

Keywords: reproductive health, contraception, prevalence, female, Egypt

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Introduction

According to the Egyptian Ministry of Health and Population, the proportion of contraceptives users in 2014 was still less than 50% and was far below the corresponding proportion of married women (> 80%) who desire no more children (1). With the rapid growth of the Egyptian population from 20.8 to 98.1 million inhabitants in the past 50 years (2), strenuous efforts have been made to promote maternal and child health through family planning programmes that empower families to make informed decisions on the number of children and interval between children they want and to reduce unintended pregnancies.

The use and type of contraceptives should be guided by women’s health status (3). However, in low- and middle-income countries, culture and other non-medical factors have been shown to play an important role in women’s decision to use contraceptives (4). Despite evidence on the positive effect of contraceptive use, not only on controlling fertility but also on women’s health, family welfare and social life in general (5), myths and misconceptions about modern contraceptives are still prevalent in such communities (6–8) and may prevent their use, which can lower general health of the women (7–9) and may be obstacles to effective family planning programmes (7,8,10).
Myths and misconceptions about contraceptives are very common in deprived areas and low- and middle-income communities (4,6–8,11,12). In Egypt, especially in rural areas, poverty, illiteracy and misguided religious beliefs have created a culture and environment that have helped spread misinformation about modern contraceptives since their introduction in 1967 (13,14).

Evidence on these issues is from the 1980s and more recent studies are lacking. Furthermore, those earlier studies focused on misconceptions about oral contraceptive pills only. For example, one study showed that 57% and 52% of urban and rural Egyptians respectively believed that using oral contraceptive pills had substantial health risks (15). The most prevalent myths were that contraceptive pills cause severe headache (86% in rural and 95% in urban communities), anaemia (55% and 53%), sterility (20% and 37%), breast cancer (21% and 16%) and birth defects (17% and 11%) (15).

Therefore, the current study aimed to assess the prevalence of myths about various modern contraceptive methods used by women in Minia governorate in Upper Egypt and evaluate their effect on ever and current use of modern and traditional contraceptives. It is hypothesized that myths about contraceptives in such communities could be influencing women’s choice about family planning options.

**Methods**

**Study design and place**

This was a cross-sectional study of married women aged 18–49 years recruited during their visits to the 10 accredited urban and rural health centres (eight urban and two rural) in Minia. These centres are accredited by the Egyptian Ministry of Health and Population to provide specific maternal and child health services. Minia is an Upper Egypt governorate with about 5.6 million inhabitants and an area of 30 000 km². The fertility rate in Minia according to the most recent census data was 3.8 per 1000 women aged 15–49 years (2). The uptake of contraceptives in Minia in 2015 was 37% for intrauterine devices (IUDs), 31% for oral contraceptives and 20% for injectables, with an overall prevalence of contraceptive use of 53% (4). These rates are comparable to national figures in 2014, which were 30% for the IUD, 16% for oral contraceptives and 9% for injectables, with an overall contraceptive prevalence of 59% (1).

**Study sample**

The study population was married women aged 18–49 years. All women visiting the selected
health centres seeking maternal and child health services and family planning services from June to December 2015 were approached by trained data collectors from the Public Health Department at Minia University and fourth-year medical students and invited to participate after giving verbal consent. If they agreed, they were interviewed at that time and interviews took about 10–15 minutes. Exclusion criteria were unmarried females, pregnant women, women aged 49 years, women who did not give their consent, and duplicate observations for women who visited the same or other centres more than once in the study period.

**Structured interview questionnaire**

Data were collected about the participants’ sociodemographic characteristics, reproductive history, ever and current use of modern and traditional contraceptive methods and belief in seven myths about modern contraceptives using a structured interview questionnaire in Arabic (4). We tested the reliability of the questionnaire in a pilot study of 50 women.

Modern contraceptives included oral birth control pills, IUDs and injectables; traditional contraceptives included methods based on fertility awareness, such as calendar and lactational amenorrhea, and the withdrawal method. Due to the small number of participants who reported the use of barrier methods (five for condoms and three for diaphragms), we added these to the traditional methods category and labelled the group “traditional and barrier methods”.

**Myths and misconceptions about contraceptives**

A pilot study including 50 women from two health centres (one rural and one urban) was carried out to assess the contraceptive prevalence rate and non-medical factors associated with their use. Women were asked to freely report any fears and rumours about contraceptives that they had heard or that were circulating in their communities or families. Based on the myths reported by the women in the pilot study, seven that were frequently reported and related to the three main modern contraceptive methods available in Egypt (oral contraceptives, IUDs and injectables) were included in the main questionnaire. The myths were: oral birth control pills cause cancer, IUDs can penetrate the uterus and travel up to the heart, injectables cause permanent infertility, difficulty in getting pregnant after stopping the use of contraceptives, contraceptives adversely affect women’s health, contraceptives are for older women only, and contraceptive use increases the risk of fetal defects.

**Statistical analysis**

SPSS, version 20 was used for data entry and analysis. Characteristics of the women who had and did not have misconceptions about contraceptives were expressed as number and percentage or mean and standard deviation (SD). Chi-squared and t-tests were used to assess statistically significant differences in characteristics. The frequency of belief each of the seven
myths was categorized according to women’s use of contraceptives: never (used contraceptives, modern or traditional), ever (used contraceptives at some time), and current users. Multivariable logistic regression analysis was used to assess the association between misconceptions about contraceptives and current and ever use of oral birth control pills, IUDs, injectables and total traditional and barrier methods. Odds ratios (ORs) and 95% confidence intervals (95% CI) were adjusted for: age, age at menarche, at marriage and at first baby, number of children, desired number of children, woman’s education and occupation, husband’s education and occupation, residence and decision-maker on the use of contraceptives. In addition, the effect of increasing number of myths believed (1, 2, 3 and ≥4 myths versus none) on contraceptive use was evaluated. P

### Ethical considerations

Approvals to conduct the study were obtained from the Egyptian Ministry of Health and Population and the managers of the health centres. The Ethical Committee of Minia University granted ethical approval for this research. Women gave their verbal consent to participate.

### Results

We approached 2021 women at the health centre in the study period; 1504 met our inclusion criteria (married, not-currently pregnant, seeking maternal and child health services and family planning services, aged 18 to 49 years). Of these women eligible for inclusion, 1212 consented to participate, giving a response rate of 81%. As shown in Table 1, 1075 women (88.7%) believed myths about contraceptives. Women with misconceptions about contraceptives were younger and had younger age at menarche but were older at the time of the birth of their first child when compared with those without such misconceptions. A greater proportion of rural than urban women and women whose husbands were unemployed than whose husbands had a job had misconceptions about contraceptives. Of ever and current users of contraceptives, 137 (12.3%) and 100 (15.5%) respectively reported no misguided beliefs, while all women who had never used contraceptives (96, 100%) reported believing one or more myths about contraceptives. The 96 never users, had a higher mean of number of desired children (3.7 children) compared with ever contraceptive users (3.3 children). In addition, although never users were four years younger than contraceptive users, their mean number of children (2.5 children) did not differ greatly from that of contraceptive users (2.4 children), which suggests repeated pregnancies and deliveries. Eleven women (14.1%) who were currently using traditional or barrier contraceptive methods had no misconceptions about contraceptives compared with 33 (16.6%), 43 (18.1%) and 13 (10.1%) of current users of oral birth control pills, IUDs and injectables, respectively.

Table 2 shows responses to seven myths about contraceptives among never, ever and current contraceptive users and the total sample of women. The most prevalent myth about contraceptives was that birth control pills cause cancer which was expressed by 926 women (76.4% of the total sample), followed by the misconception that IUDs can travel up to the heart by penetrating the uterus – 568 (46.9%) of the women. A greater proportion of never users of
contraceptives believed the myths than ever and current users.

The multivariable logistic regression analysis of the association between misconceptions about modern contraception and ever use and current use of modern and traditional contraceptives is shown in Table 3. Women who have ever used any contraceptive method, and specifically birth control pills, were less likely to believe myths about contraceptives (OR = 0.79; 95% CI: 0.65–0.89 and OR = 0.40; 95% CI: 0.26–0.61 respectively). However, women who had ever used traditional and barrier methods had about twice the odds of believing myths than those who had not used these methods, but this difference was not statically significant (OR = 2.32; 95% CI: 0.92–7.47). Among current contraceptive users, women using any method, birth control pills and IUDs were less likely to believe myths about contraceptives, OR = 0.31 (95% CI: 0.20–0.47), OR = 0.59 (95% CI: 0.37–0.90) and OR = 0.50 (95% CI: 0.34–0.76) respectively (Table 3).

The association between believing myths and type of contraceptive used showed a dose-response pattern with belief in an increasing number of myths about contraceptives (Table 4).

**Discussion**

To the best of our knowledge, this is the first study to measure the prevalence of myths about contraceptives among women in Upper Egypt, and the first to evaluate the effect of those myths on ever and current use of contraceptives. According to our findings, myths about contraceptives were prevalent; 88.7% of the women had misconceptions, mainly the belief that oral birth control pills caused cancer and that IUDs can penetrate the uterus and move to the heart. Accordingly, the ever use of oral contraceptives and current use of oral contraceptives and IUDs were lower and the ever use of traditional and barrier contraceptives was higher in women who believed in such myths about contraceptives compared with women who did not.

Challenging traditional customs and fertility habits by encouraging people to use contraceptives has always faced resistance (5,6,11–16). Because of the wide gap between scientific evidence and public perception of the safety of contraceptives, one path of resistance to contraceptive use was the ready spread of health-related myths about contraceptives in Egypt (13,14). Similar to our findings, these myths were prevalent and impeded the use of contraceptives in Senegal, Nigeria and Kenya (11), Ghana (12,17), India (18), Malawi (19), Nigeria (20) and many other countries as reported in two previously published reports (7,8).
Ever and current use of oral birth control pills was significantly lower in women in Minia who believed in myths about contraceptives. This is plausible given that the most prevalent myth about contraceptives reported by over three quarters of those women was that oral contraceptives cause cancer. Since they became available in the 1960s, oral contraceptives have been the most stigmatized contraceptive method as result of disinformation and myths. Such falsehoods started in the 1980s with the rumour that oral contraceptives cause “weakness” (13), a non-medical based condition of lethargy, dizziness and fatigue associated with contraceptive pill use, and the myth was prevalent in Egypt (13), Botswana and the Islamic Republic of Iran (21). Other myths reported worldwide include the association between the oral contraceptives and ovarian, endometrial and breast cancer (22).

Despite the scientific evidence that IUDs are one of the safest forms of contraceptive (23), and its discontinuation rate is the lowest among contraceptive users in Egypt (1,4), the second most prevalent myth about contraceptives in women in Minia was that IUDs can travel up to the heart by penetrating the uterus. The current use of IUDs was 50% lower among women who believed this myth. Similar misrepresentations have been important barriers to IUD uptake in other low- and middle-income countries (7,8,24).

The use of oral birth control pills and IUDs decreased as the number of myths believed by women about contraceptives increased, while the ever use of traditional and barrier contraceptives increased among those who believed such myths. Women with lower levels of education also preferred traditional health practices to modern ones, and perception of such modern methods was affected by doubts regarding its safety.

Previous research has pointed to the non-contraceptive health benefits of modern contraceptive use on women’s health such as alleviating uncomfortable menstruation symptoms (heavy, painful and irregular periods), improving acne and hirsutism, treating endometriosis and reducing the risk of endometrial and ovarian cancers (5,9), their effect on uncontrolled fertility rates and the resulting improved family welfare (5,9). Unfortunately, the high prevalence of contraceptives myths found in Upper Egypt suggests poorer health status, high fertility rates and other adverse effects on the family of our studied women (7,8). Further research on these effects is needed, especially as the women with misguided beliefs about contraception tended to want a higher number of children.

It is clear that myths were widely circulated and persisted even among women who were using modern contraceptives. All the women who never used contraceptives reported believing in all or some of the myths, but data were not available on when they heard to rumours – before or after marriage for example – and how long they had for believed in them. However, a report
from eight low- and middle-income countries, including Egypt, showed no difference in the rate of contraceptive use with different durations of belief in the myths (15). In addition, another study showed that the duration of oral contraceptive use did not influence the prevalence of misconceptions about the birth control pills (21).

This study only included women from one governorate of Upper Egypt which could affect the generalizability of the study findings; however, our sample of urban and rural women was large. A review has shown that male respondents in many studies have reported myths about condoms such as weakening the penis, causing impotence or reducing pleasure (8). We did not look at myths about male contraceptive methods including condoms. Very few participants in the current study reported using condoms as a contraceptive method and such myths might be associated with this low use. Future studies to include the experience of both men and women about male methods of contraception are needed.

Conclusion

The belief in myths about contraceptives is common in Minia and was associated with lower use of modern contraceptive methods, especially oral contraceptive pills and IUDs, but higher use of traditional methods of contraception. Reproductive health programmes to refute myths and misguided beliefs about modern contraceptives may help increase the use of modern contraceptive methods and are recommended, along with continuous provision of such contraceptives. Suggestions have been made for mass media and family planning health campaigns to improve awareness about the benefits of modern contraceptives and to change social norms about their use (25). However, training of reproductive health service providers to interact with and respond to incorrect information held by clients is recommended. These health service providers can also involve the community through counselling sessions and seminars, which include satisfied contraceptive users to share their experiences, to help dispel pervasive myths in their local communities.

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Mythes concernant les méthodes de contraception modernes et traditionnelles entretenus par les femmes de Minya en Moyenne-Égypte

Résumé

**Contexte** : Les idées fausses concernant les méthodes contraceptives modernes ont une incidence sur leur utilisation dans les pays à revenu faible et intermédiaire.

**Objectifs** : La présente étude avait pour objectif de déterminer la prévalence des mythes concernant les méthodes contraceptives modernes et leur association avec une utilisation, antérieure ou au moment de la réalisation de l'étude, de contraceptifs par les femmes de Minya en Moyenne-Égypte.

**Méthodes** : Il s'agissait d'une étude transversale portant sur 1212 Égyptiennes mariées, âgées de 18 à 49 ans, fréquentant les centres de santé des zones urbaines et rurales de Minya. Les données ont été recueillies à l'aide d'un questionnaire d'entretien structuré et traitées dans le cadre d'une analyse de régression logistique ; les odds ratios (OR) et les intervalles de confiance à 95 % (IC) ont été calculés.

**Résultats** : La majorité des femmes (88,7 %) avaient une ou plusieurs idées fausses sur les méthodes de contraception. Les idées les plus répandues étaient que la pilule contraceptive provoque des cancers et que les dispositifs intra-utérins (DIU) peuvent perforer l'utérus et migrer vers le cœur. Le taux d'utilisation de la pilule contraceptive et des DIU était significativement plus faible chez les femmes ayant des croyances erronées que chez celles qui n’en avaient pas, OR ajusté = 0,59 (IC à 95 % : 0,37-0,90) et OR ajusté = 0,50 (IC à 95 % : 0,34-0,76) respectivement. La croyance dans un nombre de plus en plus important de mythes était associée à une probabilité plus faible d’un éventuel recours à la pilule contraceptive : OR = 0,72 (IC à 95% : 0,57-0,96), OR = 0,61 ; IC à 95 % : 0,43-0,91), OR = 0,48 (IC à 95 % : 0,29-0,69) et OR = 0,43 (IC à 95 % : 0,24-0,63) chez les femmes ayant un nombre d'idées fausses égal à 1, 2, 3 ou supérieur ou égal à 4 comparativement à celles qui n'en avaient aucune.

**Conclusions** : Les mythes concernant les moyens de contraception sont largement répandus chez les femmes de Minya et peuvent avoir une incidence notable sur le choix et l’utilisation d’une méthode contraceptive. Il est recommandé de mettre en place des programmes de santé génésique permettant de réfuter ces croyances erronées.
WHO EMRO | Myths about modern and traditional contraceptives held by women in Minia, Upper Egypt

**Summary**

The study aimed to determine the prevalence of myths about modern and traditional contraceptives among women in Minia, Upper Egypt, and their association with contraceptive use.

**Methods**

The study included 18 married women aged 12-50 years in Minia. They were asked about their contraceptive use and beliefs. The prevalence of myths and their association with contraceptive use were analyzed using logistic regression.

**Results**

- **88.7%** of women held misconceptions about contraception, especially about the risks and side effects. These misconceptions were more common among women with lower education and lower socioeconomic status.

- **Logistic regression analysis** showed that misconceptions were associated with lower contraceptive use, with odds ratios ranging from **0.50 to 0.72**.

- **Misconceptions** about the effectiveness of contraception and the risk of side effects were more common among women who had not used contraception.

- **Conclusion**

  The study highlights the importance of addressing misconceptions about contraception to improve contraceptive use. Health education programs need to be strengthened to educate women about the benefits and risks of contraception.
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