

Differences in knowledge about contraception among Saudi males and females at tertiary hospitals in Riyadh

Maysoon S. Aladham, Hafiza Turkistany, Nazish Masud, Faisal O. Alaqeel, Rawan H. Alharbi, Lujain H. Aljbli, Arwa A. Alharisi, May M. Alotaibie, Aryaf M. Almotairi, Alanoud H. Alassaf

Collage of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia

ABSTRACT

Context: Family planning is a voluntary practice that individuals engage in to control the number of children for promoting the health and development of countries. The aim is to evaluate the level of contraceptive knowledge in Saudi males and females in Riyadh at King Abdul-Aziz Medical City (KAMC) and King Abdullah Specialist Children's Hospital (KASCH). **Methods:** A cross-sectional questionnaire-based study conducted among educated, under educated, single, married Saudi males and females ($n = 385$), and aged (20 to 65) years old. Healthcare providers and participants underwent permanent sterilization were excluded. **Results:** Approximately half of the participants were aware about contraceptive methods. More males ($n = 132$, 70%) were significantly aware compared to females ($n = 110$, 56%) (P -value < 0.001). The most commonly used contraceptive methods were oral contraceptive pills, male condom, and intrauterine device (69%, 34%, 22%, respectively). A significant difference was noted for the used and preferred contraceptive method, which was condom for male and oral contraceptive pills in female (P -value < 0.001). Healthcare provider was the main source of information and women significantly consult healthcare provider more than men 47% vs 32%, ($\chi^2 = 9.23$, P value = 0.002). Side effects were reported as a main reason for discontinuation 61% ($n = 120$) of females and 52% ($n = 98$) in males, respectively. Logistic regression indicated a significant association of contraceptive knowledge with age and parity. **Conclusions:** Regardless of educational level, high levels of awareness were identified in both genders. Oral contraceptive pills were reported as the most used, safest, and preferred method.

Keywords: Barrier methods, contraception, cross-sectional, IUD, knowledge, Saudi

Introduction

Family planning is a voluntary practice that individuals engage in to control the number of children for promoting the health and development of countries.^[1] A prevalent family planning method is contraception, which is defined as the intentional prevention of pregnancy by means of various methods.^[2,3] A noticeable benefit of contraception is the decline in the fertility rate, which

consequently saves both the life of the mother and child.^[4] The current estimated fertility rate is 2.27 births per woman which represent a decline of 1.43% from 2019. Currently, in 2020, the birth rate is 17.09% per 1,000 people, which represented a decline of 2.65% compared to 2019.^[5]

Several studies have been conducted across different provinces in Saudi Arabia regarding female use and knowledge of contraception. A study undertaken in Al-Madinah region reported that only 33% of 300 participants had correct knowledge about contraceptive methods, and 63.7% recommended teaching sessions on the use of contraceptives.^[6] Another study reported

Address for correspondence: Lujain H. Aljbli, Riyadh, Saudi Arabia.
E-mail: aljbli010@ksau-hs.edu.sa

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that 78% of female participants had poor knowledge about contraceptive modalities before counselling, whereas satisfaction increased after receiving counselling sessions.^[7] Relatively few studies have examined male knowledge about contraception and contraceptive practices. In France the never users of contraception stand at 3.4% among men aged between 15 and 49 while in United Arab Emirates (UAE) 20% men reported currently using contraception.^[8,9] Contrasting results have been reported internationally in comparison to the extant Saudi-based studies. A recent study in India targeting 94 female health care workers found 90.4% correctly knew the types of family planning but 75% ever used one or more of family planning methods.^[10] Another study was conducted among 708 Ethiopian women revealed that 52.1% had acceptable level of knowledge but only 41.2% reported using contraceptive method.^[11]

Given the limited number of studies that have been conducted to address the level of knowledge of contraceptive methods in males and females, both in the KSA and internationally, the aim of this study was to assess the level of knowledge in Saudi males and females in Riyadh at two tertiary hospitals: first, King Abdul-Aziz Medical City (KAMC); and second, King Abdullah Specialist Children's Hospital (KASCH).

Methods

Study design and setting

A cross-sectional study was undertaken using a survey strategy from September 2018 to December 2019; questionnaires were disseminated to visitors attending King Abdul-Aziz Medical City (KAMC) and King Abdullah Specialist Children's Hospital (KASCH).

Clinics in Riyadh, KSA. KAMC, a tertiary hospital, was established in 1983, and it currently has 1,501 beds. KASCH is one of the largest academic medical districts in the Riyadh Region. It is one of the largest tertiary care hospitals of Saudi Arabia and provides care to mostly the employees or the dependents of the ministry of National Guards.

Study participants

A total of 385 participants returned the hard copies of filled survey after completion. The inclusion criterion of the participants was married Saudi males and females aged 20 and 65 years. In order to reduce the bias of over reporting, the Healthcare providers were excluded from the final analysis. Also, participants who did permanent sterilization and were not currently eligible for using any contraceptive method were excluded from study. The sample size was calculated with a 5% margin of error, a 95% confidence level and assuming the prevalence of knowledge about contraception at 50% in order to get maximum sample size. Non-probability convenience sampling strategy was used to recruit participants from the lobbies and waiting areas of KAMC and KASCH in case the participants could not read or write, the research team data

collectors read the survey and filled the response based on participant's opinion.

Data collection

Data were gathered using a hard copy questionnaire, in context of the cultural norms of KSA male team members were responsible for distributing questionnaires to male participants and vice versa. All participants provided voluntary and informed consent before filling the survey. The data collection survey was designed for this study specifically followed by face and content validity by two independent experts followed by a pilot study with 30 participants for measuring the reliability of the questionnaire (Cronbach's alpha = 72).^[12] The survey was designed in Arabic language and consisted of three sections. The first section included the demographic profile the second section had three main items related to contraception ever use, safest method and preferences (each item further subdivided to 7 items). The last section had 12-items related to contraception knowledge, side effects, source of information, method switching and affordability. All responses were recoded as closed-ended categorical variables, and the questionnaires took approximately five minutes to complete. The study was approved by King Abdullah International Medical Research Center (KAIMRC). Confidentiality and anonymity were maintained throughout the study. No names, medical record numbers, or any other forms of identifying information were obtained from the patients.

Statistical analysis

For statistical analysis Statistical Package for Social Sciences IBM® SPSS® Statistics version 22 was used. The data was initially recoded in Microsoft excel and then transferred to SPSS for data management. The categorical variables were presented as percentages out of the total sample along with the frequencies. All the results were stratified based on gender along with total percentages. The Chi squared test for independence was used to measure the association of ever use, safest and preferred method of contraception with gender. Factors associated with better knowledge about contraception were investigated using binary logistic regression and odds ratio along with 95% confidence intervals were reported. The Reference category for age category was set as "51-65 years"; female for gender, for educational status "higher degree PHD and other" and for variable of number of children "having no children" was set as reference category. The statistical significance was set at P value <0.05 for all the tests applied.

Results

Profile of the study participants

A total of 400 people completed the survey out of which only 385 were included in the final analysis. Fifteen surveys were removed because of incomplete data or had performed hysterectomy and were not eligible for using contraception. The male to female ratio in the study was almost 1:1 (49% vs 51%) respectively. More than half of the participants were from the

central region 69% ($n = 262$), and 10% ($n = 37$) were from the eastern and western regions. The ages of both the male and female participants were within the childbearing range, and 44% ($n = 168$) of the participants were aged 26–35 years. Most participants 41% ($n = 158$) were educated and held bachelor's degree at the time the study was undertaken, while 21% ($n = 80$) had obtained high school certificate. However, 14% ($n = 55$) of the respondents had no formal education. Almost half of the participants reported having 3 or less children with 42% ($n = 163$), while 30% ($n = 114$) had 4 to 6 children. [Table 1]

Ever use, preferred and safest method of contraception distribution by gender

Among the ever users the oral contraceptives were the most common used method with 69% ($n = 267$) reported using the method. The second most prevalent method among ever users was the male condom 34% ($n = 131$), followed by Intrauterine Devices (IUD) 22% ($n = 86$). Regarding the participants' perceptions about the safest method of contraception, oral contraceptives were viewed as the safest method by 47% ($n = 182$) of participants, followed by male condoms 24% ($n = 92$) and IUDs 21% ($n = 79$). Additionally when inquired about the preferred method of contraception, almost half of the participants stated that oral contraceptive pill was the preferred method 49% ($n = 187$), followed by male condoms and IUDs were preferred to a lesser extent 20% ($n = 76$) and 19% ($n = 72$), respectively. Out of total, 10% reported having ever used natural family methods while only 3% considered it as a preferred method of contraception. The permanent method of contraception was less prevalent among our sample with only

one patient reported having done vasectomy and five women reported tubal ligation. [Table 2]

There was significant difference among male and female reporting of the ever use of contraception along by gender. Men reported having more use of condom than women 48% vs 20% ($\chi^2 = 33$, P value <0.001) and reported barrier methods as the preferred method of contraception. The female dependent method oral pills were significantly more reported by the females than men 77% vs 62% ($\chi^2 = 9.68$, P value <0.001) among ever users. Additionally, oral pills were also the most preferred method of contraception among females vs males with 54% vs 43% and ($\chi^2 = 4.85$, P value = 0.02). [Table 2]

Perception about method switching and source of information

In this study female participant who reported to have sufficient knowledge about contraception ($n = 110$) 56% while ($n = 132$) 70% for male with significant difference between both genders (P -value <0.001). Most participants used contraceptives based on the advice of healthcare providers, but women were significantly consulting healthcare provider more than men for choosing contraception 47% vs 32% with and ($\chi^2 = 9.23$, P value = 0.002). The prevalence of switching of a method was reported almost same among both genders. The rationale for using contraceptive methods in both genders was strongly associated with individual preferences 41% ($n = 80$) for females and 56% ($n = 106$) for males. The second most prominent rationale was for health-related issues, which was mentioned by 34% ($n = 66$) and 22% ($n = 42$) of females and males, respectively. [Table 3]

Several factors were mentioned relating to the discontinuation of contraceptive methods, including side-effects, personal views, affordability, and accessibility. The most concerning factor for the use of contraceptive methods was experienced side-effects 61% ($n = 120$) of females and 52% ($n = 98$) in males. However, personal view and lack of knowledge were significant reasons to terminate the use of contraception in male more than female. ($\chi^2 = 16.2$, P value <0.001 , $\chi^2 = 5.61$, P value = 0.01) Moreover, accessibility and affordability were other concerns for discontinuation in men more than women ($\chi^2 = 4.10$, P value = 0.04, $\chi^2 = 4.17$, P value = 0.04). [Table 3]

Predictors of holding sufficient knowledge about contraceptives

There was a high level of knowledge in younger participants. Participants aged between 20 and 25 years were five times more aware of contraceptives compared to older age groups (OR: 5.73; $P = 0.006$). Additionally, participants with more than 6 children were more knowledgeable about contraceptives compared to those with fewer than 6 children (OR: 0.44; $P = 0.05$). Participants who had previously used contraceptive methods were more likely to be knowledgeable (OR: 4.74; $P < 0.001$). Gender and educational level did not show significant association

Table 1: Sociodemographic characteristics

Variable	Category	Frequency	%
Age	20-25	56	15%
	26-35	168	44%
	36-65	161	42%
Gender	Female	196	51%
	Male	189	49%
Marital Status	Married	331	86%
	Other (divorced, widow, separated)	54	15%
Number of Children	≤ 3	163	42%
	4-6	114	30%
	> 6	46	12%
Region of Residence	0	62	16%
	Central	262	69%
	Eastern	37	10%
	Western	37	10%
	Northern	17	5%
Education Level	Southern	29	8%
	No or preliminary education	55	14%
	High school	80	21%
	Diploma	47	12%
	Bachelor's	158	41%
Used Contraception?	Master's, PhD or higher	45	12%
	Yes	353	92%
	No	32	8%

Table 2: The distribution by gender for the contraceptive preferences

	Female		Male		Total		Test value and P
	n	%	n	%	n	%	
Ever use							
Male-Condom	40	20%	91	48%	131	34%	$\chi^2=33, P<0.00*$
Female-condom	8	4%	5	3%	13	3%	$\chi^2=0.59, P=0.44$
Oral-contraceptive-method	150	77%	117	62%	267	69%	$\chi^2=9.68, P<0.00*$
IUD	44	22%	42	22%	86	22%	$\chi^2=0.00, P=0.95$
Contraceptive-ring	2	1%	14	7%	16	4%	$\chi^2=9.85, P<0.00*$
Natural-family-planning	29	15%	8	4%	37	10%	$\chi^2=12.35, P<0.00*$
Injection-DMPA	12	6%	19	10%	31	8%	$\chi^2=33, P<0.00*$
Safest method							
Male-Condom	27	14%	65	34%	92	24%	$\chi^2=22.48, P<0.00*$
Female-condom	2	1%	2	1%	4	1%	$\chi^2=0.00, P=0.97$
Oral-contraceptive-method	108	55%	74	39%	182	47%	$\chi^2=9.81, P<0.00*$
IUD	43	22%	36	19%	79	21%	$\chi^2=0.49, P=0.48$
Contraceptive-ring	1	1%	7	4%	8	2%	$\chi^2=4.82, P=0.02*$
Natural-family-planning	12	6%	13	7%	25	7%	$\chi^2=0.09, P=0.76$
Injection-DMPA	8	4%	4	2%	12	3%	$\chi^2=1.20, P=0.21$
Preferred method							
Male-Condom	23	12%	53	28%	76	20%	$\chi^2=16.1, P<0.00*$
Female-condom	1	1%	5	3%	6	2%	$\chi^2=2.86, P=0.92$
Oral-contraceptive-method	106	54%	81	43%	187	49%	$\chi^2=4.85, P=0.02*$
IUD	42	21%	30	16%	72	19%	$\chi^2=1.9, P=0.16$
Contraceptive-ring	2	1%	3	2%	5	1%	$\chi^2=0.21, P=0.62$
Natural-family-planning	10	5%	15	8%	25	7%	$\chi^2=1.27, P=0.25$
Injection-DMPA	7	4%	4	2%	11	3%	$\chi^2=0.73, P=0.39$

Table 3: Sources of information and reasons for discontinuation of contraceptives

Variables	Female (196) (n, %)	Male (189) (n, %)	Total (385) (n, %)	Test-value, P
Sources of Information				
Have sufficient knowledge about contraception	110 (56%)	132 (70%)	242 (63%)	$\chi^2=7.7, P<0.00*$
Social Media	31 (16%)	32 (17%)	63 (16%)	$\chi^2=0.08, P=0.76$
Reading	54 (28%)	64 (34%)	118 (31%)	$\chi^2=1.8, P=0.17$
Relatives and Friends	44 (22%)	52 (28%)	96 (25%)	$\chi^2=1.31, P=0.25$
Healthcare Providers	93 (47%)	61 (32%)	154 (40%)	$\chi^2=9.2, P<0.00*$
Other	6 (3%)	6 (3%)	12 (3%)	$\chi^2=0.00, P=0.94$
Factors Affecting Use				
Age	25 (13%)	11 (6%)	36 (9%)	$\chi^2=15.44,$ $P<0.00*$
Finance	9 (5%)	14 (7%)	23 (6%)	
Education	15 (8%)	16 (9%)	31 (8%)	
Medical Condition	66 (34%)	42 (22%)	108 (28%)	
Personal Choice	80 (41%)	106 (56%)	186 (48%)	
Knowledge about safe period	106 (54%)	116 (61%)	222 (58%)	$\chi^2=2.09, P=0.14$
Knowledge of side effects	124 (64%)	118 (62%)	242 (63%)	$\chi^2=0.05, P=0.81$
Switching or Discontinuation of Method	145 (74%)	138 (73%)	283 (74%)	$\chi^2=0.01, P=0.89$
Experienced Side-Effects	120 (61%)	98 (52%)	218 (57%)	$\chi^2=3.44, P=0.06$
Fear of Side-Effects	45 (23%)	40 (21%)	85 (22%)	$\chi^2=0.13, P=0.71$
Lack of Knowledge	7 (4%)	18 (10%)	25 (7%)	$\chi^2=5.61, P=0.01*$
Affordability	3 (2%)	10 (5%)	13 (3%)	$\chi^2=4.17, P=0.04*$
Personal Views	11 (6%)	36 (19%)	47 (12%)	$\chi^2=16.2, P<0.00*$
Method Failure	44 (22%)	38 (20%)	82 (21%)	$\chi^2=0.31, P=0.57$
Accessibility	7 (4%)	16 (9%)	23 (6%)	$\chi^2=4.10, P=0.04*$

*The Chi-square statistic/Fishers exact significant at (P<0.05)

with the level of knowledge about contraceptives among our study sample. [Table 4]

Discussion

This study assessed the level of knowledge about contraception and preferences based on gender among Saudi males and females. The use of contraceptive methods has markedly increased in Saudi Arabia over the past few years due to their positive impact in preventing unintentional pregnancies, as well as in reducing the incidence of heritable diseases.

Current study indicated that oral contraceptive pills were the most popular contraception among both genders. Oral contraceptive pills (OCP) were also the preferred method for a majority of the participants and perceived the safest method. This can be attributed to many factors, including age, financial status, educational level, and number of children. The use of oral contraceptive pills has markedly increased in the Saudi population and our findings show higher prevalence compared to other study conducted in Jeddah reporting OCP use among 31% couples.^[13] A recent study undertaken in the US revealed that oral contraceptive pills were used by 82% of females, the result also reported that female use and prefer OCP more often than male.^[14] Regarding the safety of different contraceptive modalities, almost half of the participants 47% perceived oral contraceptive pills as the safest method compared to other techniques. Similarly, a Texas-based study indicated that approximately 56% of women viewed oral contraceptive pills as safe method.^[15]

A Jeddah-based study reported that the IUD was the second most used contraceptive method in females 21%,^[13] which is

around the same as the result obtained in this study (specifically, 22%). Moreover, Al-Taif's study revealed that 34.3% of females used the IUD which is slightly higher compared to our results.^[16] Contrastingly, in two southwestern Nigerian studies, the IUD was the least used method, with only 4% of females at childbearing age using this modality.^[17] The male condom was the second most used modality in this study, used by 34% of the participants. By contrast, the above mentioned Jeddah-based study reported that other methods were used more commonly than the male condom; in particular, the male condom was used by 13.6% of the participants, whereas the withdrawal method and others were used by 16.4% and 17.1%, respectively.^[13] Notably, in the US, the male condom was the most common method, this is consistent with our finding of men ever use and preferred barrier methods more than women.^[14]

Most participants in this study, both female and male, received information about family planning methods from healthcare providers 47% and 32%, respectively. These figures are substantially lower than those reported in the Jeddah-based study, which revealed that healthcare providers are the main source of contraceptive information and advice for around 55.2% of Saudi individuals of childbearing age.^[13] Contrastingly, another KSA-based study indicated that the main source of information about contraception was from friends, accounting for 34% of the sample group.^[18]

As reported in the literature experiencing side effects is one of the main reasons for method switching. Our findings were consistent with the existing literature and experiencing side effect was considered the most significant reason for discontinuation of contraception and that could be attributed to the misconception that ruminate on society and lack of awareness about the potential side effect, benefits, and alternatives.^[13] Personal view, accessibility and affordability were significantly reported by men more than women as the reasons for discontinuing contraception use, and the possible causation were cultural believes as children are gift from God, men's power over women, socioeconomic status and financial affordability.

In this study, a positive association was identified between age and sufficient knowledge of contraceptives. This result may be attributed to the fact that younger participants are more career-oriented and, on the whole, more highly educated. However, participants older than 30 years tend to have satisfied their fertility goals, and their aim is generally to preserve their health by increasing the intervals between births, which was inconsistent with other studies.^[19-22] Another factor associated with being more knowledgeable about contraceptives, as revealed by this study, was parity. Several studies, including those in the KSA, India, and Singapore, have indicated that parity is a strong predictor for the use of contraceptives, high levels of knowledge about contraceptives, and the preferred number of children, which is 4 to 5.^[19,23-25] Both genders had comparable knowledge about contraceptives, and no significant difference was identified. Men's knowledge in the KSA, which amounted to 70% in this

Table 4: Predictors of holding sufficient knowledge of contraceptives

Variables	P	OR*	95% CI** for OR
Agea			
20-25	0.006	5.73	1.66-19.78
26-35	0.021	3.46	1.20-9.95
≥ 36	<0.001	3.78	1.40-10.23
Gender ^a			
Men	0.155	0.67	0.38-1.16
Ever used Contraception ^b			
Not used	<0.001	4.74	2.07-10.83
Education ^a			
No or Preliminary Education	0.494	1.705	0.36-7.87
High school	0.723	1.311	0.29-5.86
Diploma	0.207	0.362	0.075-1.75
Bachelor's	0.571	0.656	0.15-2.81
Master's	0.187	0.324	0.061-1.72
Number of children ^a			
≤3	0.844	1.119	0.36-3.42
4-6	0.284	0.609	0.24-1.50
>6	0.051	0.449	0.20-1.00

* (OR): Odds ratio for multiple logistic regression, ** (CI): Confidence Interval. ^aThe Reference category for Age category was set as "51-65", "Female" for gender, the educational as "Higher degree PHD other", the children as "having no children", ^bEver use contraception reference category was "yes". Significant associations are presented as bold.

study, was lower compared to studies performed among men in Jordan 94% and the UAE (84%).^[9,26] Women's knowledge was around 56% in this study, which was lower than a recent study indicating that 68% of women knew the correct definition of family planning. This could be due to the fact that most individuals in the sample were educated only to the secondary school level, as well as the possibility of under-reporting due to conservative culture.^[16,23] Contrary to other studies in Abha, Qassim, Qatar, and the UAE, this study did not find that high levels of education are associated with adequate knowledge of contraception.^[19,22] A positive association was identified between awareness of contraceptives and contraceptive use. This result is similar to a study conducted in the UAE, which found that 73% were aware of contraceptives and 66% were currently using them.^[21]

The current study gives insight to the gender preferences about the contraceptive mix. Including almost the same ratio of male and female sample is the strength of the study. However, the convenience sampling technique is one of a limitation which could not be overcome because of the sensitivity of the study topic. Also, the hospital setting was considered most suitable as the cultural norms and social values did not permit us to do a population-based survey which gives the actual insight of the people at larger scale. Additionally, some of the participants might have under or over reported the responses. Effort was made to present the results stratified by gender and other predictors to control for the biases. This is a small-scale study and might limit the generalisability of the results therefore we recommend large population-based census studies to investigate the idea further.

Conclusion

This study examined the knowledge, ever use, and preferences about contraceptive mix among Saudi males and females. The results predict a good level of knowledge about contraception with a significant difference between both genders. Also, a significant preference for short term male dependent methods among males and vice versa among females. The prevalence of long term and permanent method of family planning are least popular among Saudis. The primary care providers were significantly consulted the most for selection of a suitable method. Currently primary care centres in Saudi Arabia are experiencing a huge expansion in the provided services in line with the new vision 2030 to create a primary care centred model. We recommend the primary care providers should be given more awareness about contraception as they can play a key role in promoting awareness for more reliable methods of contraception among people who have achieved their desired family size. Also, it is recommended to increase targeted education and awareness campaigns relating to contraceptive practices and attitudes.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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