

# Knowledge, attitude, and practice among Saudi primary health care attendees about family planning in Abha, Kingdom of Saudi Arabia

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## ABSTRACT

**Background:** Knowledge, attitude, and practice (KAP) of contraception are influenced by a host of interdependent demographic, cultural, economic, and social factors, therefore, KAP vary not only in different countries but also from region to region in a country. A cross-sectional study was carried out among Saudi primary health care attendees at Abha city, Saudi Arabia, with the aim to help in developing strategies that may enhance family planning in Abha. **Methods:** A structured questionnaire was designed by the researcher to obtain the necessary information from all reproductive age group patients who attended primary health care centers in Abha for a period of 1 month (July to August 2017). Statistical analysis was done using two-tailed tests and alpha error of 0.05. *P* value less than or equal to 0.05 was considered to be significant. **Results:** The study included 314 participants, with age ranging from 18 to 55 years. Among them, 70.4% were female, and 56.1% of the sample were university graduates. Approximately 80.6% of the participants knew about family planning, and 68.1% correctly defined family planning. Hormonal pills were recognized by 53.2% of the participants followed with intrauterine devices. Family members were the most common source of information (51.8%), followed by internet reading (37.5%) and healthcare workers (21.8%). The attitude of the studied group varied. Most of them only wanted to use family planning in agreement with their spouses, and 11.8% had negative attitude due to their fear of side-effects. Currently, 29.6% of the participants were using family planning methods whereas 53.5% had used contraception in the past. Oral contraception was the most commonly used method (49.5%), followed by surgical methods (30.1%) and natural methods (16.1%). **Conclusions:** The present study reveals that a significantly higher proportion of respondents know about contraception and more than half had good knowledge about contraception. However, the current practice of contraception methods is lower than many regions in the country. The selection of oral contraception as the method of choice is similar to other studies.

**Keywords:** Attitude, family planning, knowledge, practices

## Introduction

Family planning plays a major role in both maternal and neonatal health as well as achieving a level of progress in decreasing level

of poverty, thus enhancing the economic status of the families.<sup>[1]</sup> The use of contraceptives has been recognized as a key element in reducing fertility for all age groups in many developing countries.<sup>[2-4]</sup> The Saudi community has been known to prefer having a large number of family members.<sup>[5]</sup> Problems that comes

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with this decision outweighs the benefits as the complications and risk factors associated with grand multiparity has been well documented.<sup>[6,7]</sup>

According to a study done in Al-Madinah Al-Munawara concerning pregnancy spacing among Saudi women showed a high level of knowledge and practice of contraceptives. A similar study conducted in Taif city revealed that more than half of the study subjects were using contraceptives.<sup>[8,9]</sup> Whereas another study done in Al-Qassim measuring the awareness of use of contraceptives among Saudi women attending primary care centers showed a low level of knowledge.<sup>[10]</sup> Hence, the knowledge and practice of family planning varies in many regions of the Kingdom.

Considering the varied reports regarding the knowledge, attitude, and practice (KAP) for contraceptive use, it was felt that the development of KAP regarding contraceptive use is needed to ensure family planning practice among women in this region.

After extensive review of literature, there is not much information available on this topic and it needs to be more explored. Hence, the aim of this work was to study the KAP among primary healthcare Saudi attendees about family planning to help in developing strategies that may enhance the family planning in Abha.

## Methodology

A descriptive cross-sectional approach was used for conducting the research which included all Saudis who attended primary health care centers for a period of one month starting 23 July to 23 August, 2017. A sample of 314 participants was taken. Saudi and married individuals were consecutively included during the study period. Unmarried attendants and females above 60 years of age were excluded. Based on a thorough review of relevant literature and experts' consultations, a structured questionnaire was developed by all researchers. It included the following sections: socio-demographic characteristics including age, sex, marital status, residence, medical and marriage history, contraceptive practices, and KAP items regarding family planning.

KAP tools were reviewed by experts in Family Medicine to identify their applicability and validity. Any suggested modification was considered until having the final format.

## Data analysis

After data were collected, it was revised, coded, and fed to a statistical software (IBM SPSS version 21). Graphs were constructed using Microsoft excel software.

All statistical analysis was done using two-tailed tests and alpha error of 0.05. *P* value less than or equal to 0.05 was considered to be statistically significant. Descriptive statistics including frequencies and percentage were used to describe the

frequency of each response for categorical data and to identify the distribution of KAP items among the studied participants.

## Results

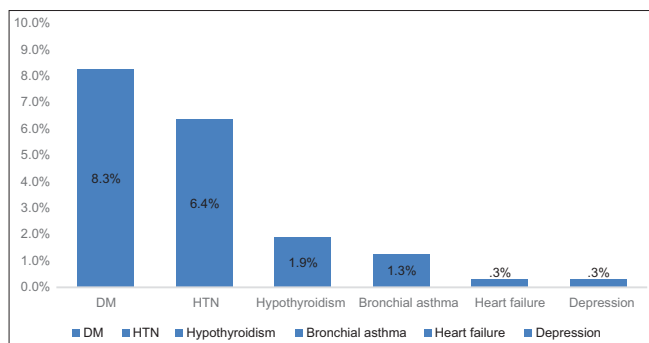
The study included 314 participants, with ages ranging from 18 to 55 years and mean age of  $29.6 \pm 10.5$  years. The majority of the included sample were females (70.4%), and 98% of them were still married with 50% of them being married for more than 10 years. The majority of included males (92.5%) were married having a single wife, and 89% of the included females were the only wife. Regarding educational level, 56.1% of the included samples were graduated from university and 31.2% from secondary schools. About half of the included sample (48.4%) were employed, with monthly income exceeding 10000 SR among 62.7% of the participants [Table 1].

Regarding chronic health problems [Figure 1], diabetes mellitus was the most frequent (8.3%) followed with hypertension (6.4%), hypothyroidism (1.9%), and bronchial asthma (1.3%).

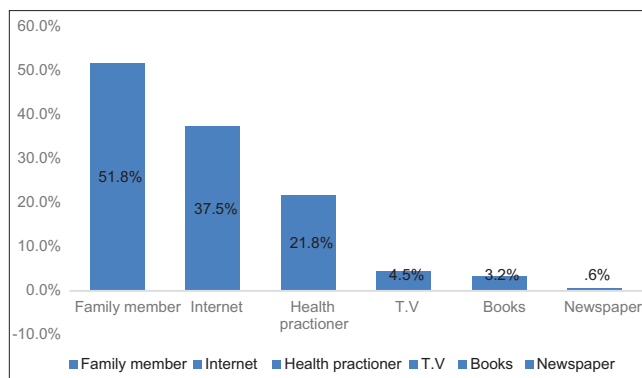
Considering awareness regarding family planning, it was clear that 80.6% of the participants knew about family planning and 68.1% of them correctly defined family planning while 39.1% thought that long-term use of contraceptive methods could cause permanent infertility [Table 2]. On asking about family planning methods, hormonal pills were recognized by 53.2% of the participants followed with intrauterine devices (30.0%), whereas other methods were recorded among about 10% of the sample. With regard to complications associated with family planning methods, 41.2% of the participants recorded mood fluctuations (24.0%), weight gain (21.2%), bleeding (20.8%), whereas pain and depression were the least identified complications.

With regard to source of participants' knowledge regarding family planning [Figure 2], family members were the most recorded source of information (51.8%), followed by internet reading (37.5%), health practitioners were the third source (21.8%); books and newspapers were the least important sources.

Table 3 illustrates participants' attitude regarding family planning. On asking about preferred gender for the next child, 28.3% of the participants did not care (no preference) and 22.0% preferred girls, while 28.7% did not want children. Regarding spouse's preferred sex of future child, 33.8% of the participants did not care (no preference) and 21.3% preferred girls, while 26.8% did not want children. As for the preferred number of children, 45.5% of the participants reported 4 to 5 children and 25.2% did not want children. When participants were asked about preferred interpregnancy spacing, 45.9% reported 2–3 years and 42.0% thought it should be 4 years or more. About two-thirds of the participants (64.3%) did not want more children, and 89.2% of them used family planning methods which is agreed by 87.6% of their spouses.



**Figure 1:** Chronic health problems recorded among Saudi primary health care attendees in Abha, Saudi Arabia



**Figure 2:** Source of family planning knowledge recorded among Saudi primary health care attendees in Abha, Saudi Arabia

**Table 1: Sociodemographic characteristics of Saudi primary health care attendees in Abha, Saudi Arabia**

Sociodemographic characteristics		No	Percentage
Age in years	<30 years	98	31.2%
	30	143	45.5%
	40	45	14.3%
	50+	28	8.9%
Gender	Male	93	29.6%
	Female	221	70.4%
Marital status	Married	310	98.7%
	Divorced/widow	4	1.3%
Marriage duration (years)	1-4	81	25.8%
	5-10	76	24.2%
	11+	157	50.0%
If married male, how many wives?	One	86	92.5%
	Two	7	7.5%
If married female, husband has other wives?	Yes	24	11.0%
	No	194	89.0%
Your sequence among them	1st	7	29.2%
	2nd	14	58.3%
	3rd	3	12.5%
	4th	0	0.0%
Education level	Illiterate	8	2.5%
	Elementary education	21	6.7%
	Intermediate education	11	3.5%
	Secondary school education	98	31.2%
	Universal education	176	56.1%
Employment	Yes	152	48.4%
	No	162	51.6%
Monthly income (SR)	<5000 SR	34	10.8%
	5000	83	26.4%
	10000	147	46.8%
	20000+	50	15.9%

On studying participants actual practice regarding family planning [Table 4a and b], it was found that 53.5% of the participants previously used one of the family planning methods, and it was the decision of the couple among 65.0% of the participants. Hormonal methods were the most frequently used (67.1%) followed by surgical methods (21.6%), and natural methods (8.4%). About 42% of those who used family planning methods were using them for more than 2 years. Currently,

29.6% of the participants were using family planning methods; hormonal methods were the most used (49.5%) followed by surgical methods (30.1%) and natural methods (16.1%). About 46% were using these methods for more than 2 years. Among the causes of not using any family planning method (70.4% of the participants), refusal to use them due to multiple reasons included religious beliefs, being the most recorded cause (31.2%) followed by pregnancy status (17.6%), fear of side-effects (11.8%), and doctor's among 6.3% of the non users. Among the included females, 30% had husband using contraceptive method whereas the natural methods was recorded among 40.4%. About 18.5% of the users of family planning methods were asked to stop using it, and the fear of side-effects was the motivation behind that; 51.7% of the participants mentioned that health condition obligated them to stop (11.9%), followed by depressed mood (8.6%), and doctor advice (7.6%). Desire to have child was the least frequent cause (6.8%) for stopping. About 40% of family planning users experienced side-effects. Mood change was the most recorded side-effect among these cases (42.6%) followed with weight gain (16.4%), bleeding (15.6%), vaginal infections, and inflammations (14.8%); whereas clotting formation was the least recorded side effect (2.5%). Due to the recorded side-effects, 65.6% of the users stopped using the contraceptive method.

## Discussion

The present study was designed to evaluate the KAP about family planning with the aim to help in developing strategies that may enhance the contraceptive practice in the Abha region of Saudi Arabia, as this has an important influence on better spacing between children as well as in improving women and children health.

Our study revealed that 80.6% of the participants heard about family planning, and out of them 68.1% could correctly define family planning. Several other studies in Saudi Arabia have reported similarly that most women knew about contraceptives but had inadequate knowledge about the details.<sup>[10-12]</sup> While a study done by the research committee of Umm Al-Qura University that collected samples from shopping malls distributed in different parts of KSA documented that all of their 560

**Table 2: Distribution of family planning awareness items among Saudi primary health care attendees in Abha, Saudi Arabia**

Awareness items	Yes		No		Don't know	
	No	Percentage	No	Percentage	No	Percentage
General knowledge						
Is there disadvantage of multiparty more than 4 children	171	55.0%	123	39.5%	17	5.5%
Ever heard of family planning	253	80.6%	61	19.4%	-	-
Correctly defined family planning	213	68.1%	23	7.3%	77	24.6%
Is it possible that long-term use of contraceptive methods could cause permanent infertility	122	39.1%	62	19.9%	128	41.0%
Family planning methods						
Condom	23	7.5%	224	72.7%	61	19.8%
Hormonal pills	165	53.2%	84	27.1%	61	19.7%
Hormonal injections	4	1.3%	245	79.0%	61	19.7%
Natural methods	28	9.0%	221	71.3%	61	19.7%
Intrauterine device	93	30.0%	156	50.3%	61	19.7%
Tubal ligation	1	0.4%	207	77.0%	61	22.7%
Family planning methods complications						
Bleeding	65	20.8%	186	59.6%	61	19.6%
Weight gain	66	21.2%	184	59.2%	61	19.6%
Nausea	11	3.5%	239	76.8%	61	19.6%
Mastalgia	13	4.2%	238	76.3%	61	19.6%
Headache	28	9.0%	222	71.4%	61	19.6%
Moody	128	41.2%	122	39.2%	61	19.6%
Clots	75	24.0%	176	56.4%	61	19.6%
Inflammation	24	7.7%	227	72.8%	61	19.6%
Dysmenorrhea	2	0.6%	249	79.8%	61	19.6%
Infertility	21	6.7%	230	73.7%	61	19.6%
Delayed fertility	7	2.2%	244	78.2%	61	19.6%
Back pain	1	0.3%	250	80.1%	61	19.6%
Depression	2	0.6%	249	79.8%	61	19.6%
Hair loss	9	2.9%	242	77.6%	61	19.6%
Uterine cancer	8	2.8%	213	75.5%	61	21.6%

participants knew about contraceptives, and 87.4% knew the complete meaning of contraceptives as a method for family planning.<sup>[13]</sup> Similarly a previous study done in the Aseer region also documented a higher level of knowledge for contraception with 99.2% women being aware about contraception.<sup>[14]</sup> In both of these studies, the participant's education level was higher, and it has been documented by previous studies that knowledge of family planning increases significantly as education levels increases.<sup>[15]</sup> International studies also show varied level of knowledge regarding contraception among women and men, such as in Pakistan 81% women knew about contraception in a study in a rural area<sup>[16]</sup> compared to 97.4% and 99% in studies conducted at urban (Lahore, Islamabad) Pakistan.<sup>[17,18]</sup> Awareness rate of 82.2% was found in an Indian study<sup>[19]</sup> and 87.7% participants in a study from Bangladesh had knowledge about family planning.<sup>[20]</sup> 87.0% of respondents had knowledge about family planning in a study in Sudan.<sup>[21]</sup> Study from Cameroon, a country in Central Africa, documented that 96% of their participants knew about family planning.<sup>[22]</sup>

With relation to the family planning methods, hormonal pills were recognized by 53.2% of the participants followed by intrauterine devices, whereas other methods were recognized by few participants only. Other studies conducted in KSA are

consistent with our finding that the most prevalently known contraceptive was the oral contraceptive pill.<sup>[10,11]</sup> Similarly a study in Qatar documented that women by and large knew about oral contraceptive pills (90.0%), followed by IUDs (89.1%).<sup>[15]</sup> Furthermore, a review documented that the most popularly known contraceptives in the Gulf area are oral contraceptive pill and IUD.<sup>[23]</sup> Regarding family planning methods complications, 41.2% of the participants knew about mood fluctuations followed with clots formation (24.0%), weight gain (21.2%), bleeding (20.8%), while pain and depression were the least identified complications, which is consistent with a study from Qaseem, KSA<sup>[24]</sup> that documented that the most common complications identified by women were headache (27.12%), emotional change (27.12%), depression (16.5%), and nausea (11.33%).

The source of participants' knowledge regarding family planning in our study showed that family members were the most recorded source of information, followed by internet, health practitioners were the third source while books and newspapers were the least important sources. This finding is similar to many other studies conducted in different regions of Saudi Arabia that also reported relatives and friends being the major source of information.<sup>[25,26]</sup> A recent review explained this major source is due to Saudi cultural norms and lack of school curriculum to

**Table 3: Attitude towards family planning among Saudi primary health care attendees in Abha, Saudi Arabia**

Family planning attitude items		No	Percentage
Do you prefer having your next child a male or female child	Don't want children	90	28.7%
	Female	69	22.0%
	Male	66	21.0%
	No preference	89	28.3%
Spousal preferred sex of future child	Don't want children	84	26.8%
	Female	67	21.3%
	Male	57	18.2%
	No preference	106	33.8%
Preferred number of children	None	79	25.2%
	1-4	69	22.0%
	4-6	143	45.5%
	6+	23	7.3%
Preferred interpregnancy spacing	<1 year	10	3.2%
	1-2	28	8.9%
	2-4	144	45.9%
	4+	132	42.0%
Do you wish to have more children	No	112	35.7%
	Yes	202	64.3%
Tend to perform family planning	No	34	10.8%
	Yes	280	89.2%
What do you think about your spouse's opinion	Agree	275	87.6%
	Disagree	39	12.4%

educate women about contraceptives and reproductive health.<sup>[23]</sup> In contrast a previous study from Aseer region reported that the media, like television, internet, and newspapers, played a major role in raising awareness (40.8%).<sup>[14]</sup> This difference could be explained by the difference in their sample socio-demographic characteristics. Many international studies from Sudan,<sup>[21]</sup> Nigeria,<sup>[27]</sup> Bangladesh,<sup>[20]</sup> and Pakistan,<sup>[16]</sup> also documented the role of media as the source of information. A study from India<sup>[28]</sup> documented that the major source of knowledge regarding contraceptives in their subjects were health workers (58.6%) followed by media 24.1%.

The attitude of the studied group toward family planning varied, most of them only wanted to use family planning in agreement with their spouses. This is consistent with previous studies done in Saudi Arabia.<sup>[25,26]</sup> About 11.8% had negative attitude due to the fear of side-effects. This is similar to the study from Madinah, Saudi Arabia<sup>[13]</sup> where 19.5% of the participants had negative attitude due to fear from side-effects, whereas it is quite different from a previous study in the same region showing only 6% of the participants had such fear;<sup>[14]</sup> this may be explained by the difference in the age and education level of participants in these study.

Regarding the practice, currently only 29.6% of the participants were using family planning methods, this finding is quite close to a study conducted in the same region where 27% of women reported using contraception,<sup>[29]</sup> but this result is in sharp contrast to many other studies from the Gulf region and internationally.

**Table 4a: Family planning practices as recorded among Saudi primary health care attendees in Abha, Saudi Arabia**

Practice items		No	Percentage
Have you used any family planning methods in the past	No	146	46.5%
	Yes	168	53.5%
Causes of not/using it	Family pressure	2	0.6%
	Spousal wish	7	2.2%
	Religious	5	1.6%
Types of contraceptive methods used in the past	Couple decision	204	65.0%
	Condom	4	2.4%
	Hormonal	112	67.1%
	Copper IUD	1	0.6%
Duration of using it	Natural	14	8.4%
	Surgical	36	21.6%
	<1 year	43	25.6%
Are you currently using contraceptive methods	1-2	55	32.7%
	>2 years	70	41.7%
	No	221	70.4%
Types of contraceptive methods currently using	Yes	93	29.6%
	Condom	2	2.2%
	Hormonal	46	49.5%
	Copper IUD	1	1.1%
	Natural	15	16.1%
	Surgical	28	30.1%
	Tubal ligation	1	1.1%
Duration of current method	<1 year	24	25.8%
	1-2	26	28.0%
	>2 years	43	46.2%
	Pregnancy	39	17.6%
	If not using, why?	Refused	69
If not using, why?	No spouse support	22	10.0%
	Fear of side-effects	26	11.8%
	Using natural methods	11	5.0%
	Old age	13	5.9%
	Want child	17	7.7%
	Breast feeding	14	6.3%
	Doctor advice	14	6.3%
Others	8	3.6%	

A study from different regions of Saudi Arabia documented 58.6% subjects currently using contraception<sup>[13]</sup> similar to other studies among Arab population, i.e., 60% in Egypt, 47% in Syria, 61.8 in Bahrain, and 43.2% in Qatar. While it is consistent with contraception use found in Yemen 23.1% and Emirates 27.5%.<sup>[30]</sup> This could be explained by the fact that the selection criterion regarding age in our study included women in higher age group and most of them were married for more than 11 years so they used the contraception at an earlier stage in their life; hence, our study reveals 53.5% of the participants used contraception in the past which figure is quite close to the studies just discussed.

Among our study participants, oral contraception was the most commonly used method, which is consistent with many studies from Saudi Arabia. A review<sup>[14]</sup> mentioned 14 studies from Saudi Arabia documenting similar result. However, in our study the use

**Table 4b: Family planning practices as recorded among Saudi primary health care attendees in Abha, Saudi Arabia, Continued**

Practice items Continued		No	Percentage
Does your spouse use contraceptive method	No	220	70.1%
	Yes	94	29.9%
If the answer to the above is yes, what type	Condom	1	1.1%
	Hormonal	52	55.3%
	Natural	38	40.4%
	Surgical	3	3.2%
Have you been asked to stop using specific method of contraception	No	256	81.5%
	Yes	58	18.5%
If yes, why?	Doctor advice due to postpartum depression	5	7.6%
	Due to depression	5	8.6%
	Due to health problem	7	11.9%
	Fear of infertility	2	3.4%
	Fear of side-effects	30	51.7%
	Others	4	6.8%
	Want a child	4	6.8%
History of side-effects from using contraception methods	No	181	59.7%
	Yes	122	40.3%
	Bleeding	19	15.6%
	Weight gain	20	16.4%
	Nausea	11	9.0%
	Mastalgia	3	2.5%
	Headache	17	13.9%
	Mood change	52	42.6%
	Mention side-effects	Infections/inflamations	18
hair loss		8	6.6%
MSK disorders (pain)		8	6.6%
Clots		3	2.5%
Others		12	9.8%
Did you stop using contraceptive methods after experiencing these side-effects	No	42	34.4%
	Yes	80	65.6%

of IUD was the least common with only 6% using it, which is in contrast to many studies documenting that IUDs were the second most commonly used contraceptive.<sup>[23,25,29]</sup> This variation could be explained by the difference in the study tool and the sample selection. In our study, surgical methods were the next commonly practiced method, which is in consistent with a United Nations worldwide report that women sterilization is among one of the most common long-term method practiced by married and in-union women worldwide.<sup>[31]</sup> However it is in contrast to many studies from Saudi Arabia where IUDs were the second most commonly reported method.<sup>[10,13,32]</sup> However, a study done at Al-Khobar<sup>[11]</sup> reported that tubal ligation was among the most commonly used contraceptives methods; the author explained this difference in preference of contraceptive method by the fact that Al-Khobar is an open city with a multicultural background. Same explanation can be given for the result revealed in our study done at Abha city, which is considered to be a tourist spot with a multicultural background.

## Conclusions and recommendations

In conclusion, the majority of the attendants to PHC centers were young who were highly educated. The level of family planning awareness was moderately satisfactory, especially the general knowledge and family planning methods knowledge, but it was not the scenario for complications. Also health practitioners do not perform their intended role in improving the attendants' awareness regarding family planning, and the family was the main source of knowledge. The attendants' attitude towards child bearing was more towards having only one or two children which is against the nature of Saudi community. Utilization of family planning methods was recorded among half of the participants according to their own desire. The researcher recommend that there must be more attention towards the target group of low education to improve their attitude towards the importance of family planning and also health practitioners should do more to improve their awareness and control their practice to avoid complications.

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## Conflicts of interest

There are no conflicts of interest.

## References

- Farzaneh Roudi-Fahimi, Ahmed Abdul Monem, Lori Ashford and ME-A. Women's Need for Family Planning in Arab Countries, Washington DC: Population Reference Bureau [PRB], 2012 Jul. [8] p [Internet]. [cited 2017 Jul 16].
- Adinma B. An overview of the global policy consensus on women's sexual and reproductive rights: The Nigerian perspective. *Trop J Obstet Gynaecol* 2002;(Suppl 1):9-12.
- Information and Knowledge for Optimal Health (INFO) Project. Center for Communication Programs, The Johns Hopkins University Bloomberg School of Public Health; 111 Market Place, Suite 310, Baltimore, Maryland 21202, USA. Volume XXXI, Number 2, Spring 2003, Series M, Number 17, Special Topics.
- Cleland J, Bernstein S, Ezeh A, Faundes A, Glasier A, Innis J. Family planning: The unfinished agenda. *Lancet* 2006;368:1810-27.
- Farrag OA, Rahman MS, Rahman J, Chatterjee TK, Al-Sibai MH. Attitude towards fertility control in the Eastern Province of Saudi Arabia. *Saudi Med J* 1983;4:111-6.
- Mgaya AH, Massawe SN, Kidanto HL, Mgaya HN. Grand multiparity: Is it still a risk in pregnancy? *BMC Pregnancy Childbirth* 2013;13:241.
- Akhatim Alsammani M, Roshdy Ahmed S, Akhatim Alsammani M. Grand multiparity: Risk factors and outcome in a tertiary hospital: A comparative study. *Mater Sociomed* 2015;27:244-7.
- Alharbi MM, Alharbi MS, Alnazzawi A, Albasri R, Towairqi MAI, Shaikh S, *et al.* Knowledge, attitudes and practices towards family planning among Saudi female teachers in Al-Madinah Al-Munawarah City, Saudi Arabia. *Int J Acad Sci Res* 2017;4:82-92.

9. Albezrah NA. Use of modern family planning methods among Saudi women in Taif, KSA. *Int J Reprod Contraception Obstet Gynecol* 2015;44:990-4.
10. Al Sheeha M. Awareness and use of contraceptives among saudi women attending primary care centers in Al-qassim, saudi arabia. *Int J Health Sci (Qassim)* 2010;4:11-21.
11. Al-Mansour R, Sabra A, Hafez A. Contraception: Knowledge, attitude, and practice with special emphasis on contraceptive pills among Saudi Women at Al-Khobar city. *Eastern Saudi Arabia. Egypt J Community Med* 2012;30:1-13.
12. Al-Zahrani A. Knowledge, attitudes and practices of contraception among women in Saudi Arabia and their views on the provision of contraception education by nurses in family planning clinics. (Unpublished Master Thesis) 2006. King's College, London.
13. Alsaedi JA, Alakel SM, Alalmaei AZ, Al-Mutairi MR, Almutairi SH. Assessment of knowledge, attitude and practice towards family planning in Saudi Arabia. *Egypt J Hospital Med* 2018;70:345-8.
14. Mubashar H, Almushait M, Sukit B, Shaamash A, Handady S, Almutawa N; Knowledge, attitude and practice of contraceptives among Saudi Women in Aseer Region, Saudi Arabia. *Bangladesh J Med Sci* 2016;15:430-4.
15. Arbab A, Bener A, Abdulmalik M. Prevalence, awareness and determinants of contraceptive use in Qatari women. *Eastern Mediterr Health J* 2011;17:11-8.
16. Mustafa R, Afreen U, Hashmi HA. Contraceptive knowledge, attitude and practice among rural women. *J Coll Physicians Surg Pak* 2008;18:542-5.
17. Hakim A, Sultan M, Ahmed F. Pakistan reproductive health and family planning survey 2001. Islamabad: The Institute; 2001. p. 60-2.
18. Humayun S. Knowledge and practices of family planning in grandmultiparas. *J Coll Physicians Surg Pak* 2002;12:522-5.
19. Srivastava R, Srivastava DK, Jina R, Srivastava K, Sharma N, Sana S. Contraceptive knowledge, attitude and practice (KAP Survey). *J Obstet Gynecol India* 2005;55:546-50.
20. Kamruzzaman M, Hakim MA. Family planning practice among married women attending primary health care centers in Bangladesh. *Int J Bioinform Biomed Eng* 2015;1:251-5.
21. Handady SO, Naseralla K, Sakin HH, Alawad AAM. Knowledge, attitude and practice of family planning among married women attending primary health center in Sudan. *Int J Public Health Res* 2015;3:243-7.
22. Nansseu JR, Nchinda EC, Katte JC, Nchagnouot FM, Nguetsa GD. Assessing the knowledge, attitude and practice of family planning among women living in the Mbouda health district, Cameroon. *Reprod Health* 2015;12:1.
23. Bamufleh RA, Al-Zahrani AE, Yousuf SA; Systematic review: Contraceptive knowledge and use in Saudi Arabia. *J Gynecol Obstet* 2017;5:69-77.
24. Elgharabawy R, Ahmed A, Alsuhaibani R. Awareness, prevalence and determinants of birth control methods use among women in Saudi Arabia. *Int Arch Med* 2015;8:1-11.
25. Al-Shamrani A, Tayeb S, Alsaggaf A, Alafif M. Knowledge, attitude and practice of Saudi women towards the use of oral contraceptive pills. *Hamdan Med J* 2016;8:219-20.
26. Abdel-Fattah M, Hifnawy T, El Said T, Moharam M, Mahmoud M. Determinant of birth spacing among Saudi women. *J Fam Community Med* 2007;14:103-11.
27. Bankole OM, Onasote AO. Awareness and sources of contraception information among female university students in Nigeria. *Inform Dev* 2017;33:199-209.
28. Pegu B, Gaur BP, Sharma N, Singh AS. Knowledge, attitude and practices of contraception among married women. *Int J Reprod Contracept Obstet Gynecol* 2014;3:385-8.
29. Farheen A. Ever use of contraceptives among women attending primary health care centers at Abha, Saudi Arabia. *Int J Curr Res Rev* 2013;5:26.
30. Roudi-Fahimi F, Monem AA, Ashford L, El-Adawy M. Women's need for family planning in Arab countries, 2012. Available from: [www.who.int/entity/evidence/resources/policy\\_briefs/UNFPAPBunmentneed2012.pdf](http://www.who.int/entity/evidence/resources/policy_briefs/UNFPAPBunmentneed2012.pdf).
31. United Nation Report-2015; Trends in Contraceptive Use Worldwide, Department of Economic and Social Affairs, Population Division; Published by the United Nations. Sales No. E.16.XIII.13 ISBN 978-92-1-151546-6 eISBN 978-92-1-057775-5.
32. Al-Turki HA. Contraception: Attitudes and experiences of Saudi Arabian women. *Health Care Women Int* 2011;32:134-9.