



Journal of Umm Al-Qura University for Medical Sciences

Journal homepage: <https://uqu.edu.sa/en/mj>

Measuring the Awareness and Experience Levels of Menstruation Suppression and Its Associated Factors among Saudi Female Pilgrims Participating in Hajj Seasons 1437-1441H

Ramya Ahmad Sindi^{a,*}, Hadeel Ahmed Daghriri^a, Islam M. Saadeldin^b, Adel Galal Elshemi^a.

^a Department of Laboratory Medicine, Faculty of Applied Medical Sciences, Umm Al-Qura University, Makkah, Saudi Arabia.

^b College of Food and Agricultural Sciences, King Saud University, Riyadh, Saudi Arabia.

ARTICLE INFO

Article History:

Submission date: 30/08/2021

Accepted date: 26/01/2022

Keywords:

Menstruation, Menstruation suppressors, Contraceptive, Bleeding, Hajj.

ABSTRACT

Background: The female pilgrims should have a state of purification or no menstruation to fittingly perform their religious rituals during Hajj. Starting menstruating at the beginning or toward the end of their pilgrimage might cause missing many rituals and spiritual benefits associated with Hajj and other side effects. To avoid these inconveniences, women are advised to postpone their menstruation by using menstruation suppressor pills and other medications in order to complete their Hajj.

Aim of the study: The aim of this study was to measure the awareness, experiences, and satisfaction levels of using menstruation suppressors, along with their associated factors and side effects, among Saudi female pilgrims who participated in Hajj seasons from 1437-1441H.

Methods: The current study was conducted using a cross-sectional prospective study via a self-administered on-line closed-ended questionnaire on more than 1000 eligible Saudi female pilgrims. Data gathered information regarding the participants' awareness, the use of menstruation suppressor pills along with their side effects during and after usage, and overall satisfaction level.

Results: The study revealed that 44.3 % of the participants had no previous history of using menstrual suppression medications. The majority 37.4 % of female pilgrims used Primolut to suppress menstruation and 25.9 % complained of mood changes and flooding bleeding with passage of clots. Overall, 41.9 % of participants were satisfied with using menstruation suppression medications.

Conclusions: This cross-sectional study measured the awareness and satisfaction level of the Saudi female pilgrims about suppressing and postponing their menstruation using menstruation suppressors. Further programs before entry, - and during Hajj provided by the Saudi Ministry of Health and the Ministry overseeing Hajj matters, are required to improve woman's experiences in menstruation suppression and possible side effects and to avoid their breakthrough bleeding side effects during Hajj.

1. Introduction

Hajj is the fifth and final pillar of Islam. It is the oldest and largest annual global mass gathering and the most important event in the lives of Muslims. Every year, more than three million pilgrims from all over the world, from different countries, and varied nationalities of immense ethnic diversity are gathered in Holy Makkah to perform Hajj (Ascoura, 2013; Gatrud and Sheikh, 2005; Memish, 2010; Parker, 2010; Parker et al., 2018).

Hajj is compulsory for any Muslim, male or female, provided that they have the physical and financial ability, to participate at least once in a lifetime and is performed over five days (Dandehbor et al., 2016; Meysamie et al., 2006; MR et al., 2021). For Muslims, being adult, free-living and with the sound of mind are prerequisites to perform the Hajj. In essence, the ceremonial rights for men and women are the same (Parker et al., 2018). However, the female pilgrims should have a state of purification or no menstruation to fittingly perform their religious rituals during Hajj, such as circumambulating around the Kaaba in Tawaf-ul-Ziyarah (or Tawaf-Al-Efadah) and Farewell Tawaf (Tawaf-al-Wadae). In that regard, if they cannot complete these essential rites due to menstruation starting, their starting menstruating at the beginning or toward the end of their pilgrimage, their Hajj rites are not complete, and they need to remain in Holy Makkah (or return to Holy Makkah) until, or when their menstruation period is over, to perform the missed rituals of their Hajj. This might cause splitting

from their Hajj groups and be associated with a lot of other inconveniences. Furthermore, during menstruation, the female pilgrims should not enter Masjid Al-Haram, and in turn, they will miss many of the extra rituals and spiritual benefits associated with Hajj. To avoid these inconveniences, the menstruating female pilgrims are therefore obligated to postpone their menstruation by using menstruation suppressor pills and other medication tools in order to perform the Hajj and during their stay in Holy Makkah (Rafidah et al., 2021; Parker, 2010).

Menstruation also often called as a 'period', which is the process of a woman's monthly bleeding. When a female menstruates, their body sheds the thickened endometrial lining disposes remove the buildup on in the uterus. The length of the menstruation cycle is varied among female population. It begins from the age of puberty (from 10-year-old onwards) to menopause (from 55-year-old above) and usually starts every 28 days. In most women, periods cause severe cramps and pain. During a woman's life, there are around 450 menstrual cycles and thus it is critical to gather more information and awareness about menstrual physiology (Reed and Carr, 2015; Thiyagarajan et al., 2019).

Women may need to avoid menstruation during certain circumstances. These include the desire to get relieved from period symptoms, avoiding cramps, managing medical conditions, or due to other important events such as the religious rituals of Hajj (Dandehbor

* Corresponding Author

Department of Laboratory Medicine, Faculty of Applied Medical Sciences, Umm Al-Qura University, Makkah, Saudi Arabia.

E-mail address: rahindi@uqu.edu.sa (Ramya Ahmad Sindi)

1658-4732/1658-4740 © 2021 UQU

et al., 2016; Rafidah et al., 2021). To postpone and suppress menstruation, along with their associated factors and side effects, most women use menstruation suppressor pills which can lead to a calmer feelings and thus better quality of life. However, it sometimes caused irregular bleeding and unscheduled spotting. Meanwhile, it has been reported that using hormonal medications to suppress periods is relatively safe (Hillard, 2014; Johnson et al., 2016).

Menstrual suppression is described as a hormonal manipulation of monthly menstruation (Rafidah et al., 2021). Dr. Gregory Pincus proposed the use of progesterone for birth control in the 1950s, and this was based on a 21-day regimen of potent hormone-containing treatment accompanied by a 7-day hormone-free period (Elliott-Sale et al., 2020; Hicks and Rome, 2010; Wright and Johnson, 2008).

The primary mechanism of action of menstrual suppressors is to suppress ovulation by inhibiting the follicular growth and preventing ovulation (Christin-Maitre, 2013; Talukdar et al., 2012). Despite the harmlessness and effectiveness of these pills, doctors seem not to usually recommend it for long term use as it could lead to uneven bleeding (Cooper and Mahdy, 2020; Shukla et al., 2017; Wright and Johnson, 2008).

Oral contraceptive pills (OCP) are divided into three categories: (1) combination estrogen-progesterone, (2) progesterone-only, and (3) constant or prolonged usage. The hormone progesterone suppresses pituitary activity, while the estrogen portion regulates menstrual bleeding (Cooper and Mahdy, 2020). The first reported instance of taking medicine to postpone menstruation was in 1977 (Dandehbor et al., 2016; Hicks and Rome, 2010).

OCPs are one of the menstruation suppressor medications used by the women population to postpone their menstruation. However, not many women are aware of its mechanism of action. A previous study by Hillard (2014) reported that women have become aware of the options available to suppress menstruation or to extended cycles based on their own preferences and satisfaction. However, there is a low level of awareness on how these drugs work (Hillard, 2014).

Extending the days of taking active OCPs is the most popular way to delay exploit the menstrual cycle. For instance, Seasonal was the first used OCPs in the United States with an extended active regimen that significantly reduces the number of monthly cycles (Hicks and Rome, 2010). Moreover, Norethisterone OCPs is the first-generation progestogen that works as a gonadotrophin inhibitor and ovarian function suppressor, which used worldwide (Yazdani et al., 2017). Depot medroxyprogesterone acetate is another example of OCPs that is suitable for patients whose menstrual periods pose a significant hygiene problem such as developmentally challenged girls. It can suppress menstruation for up to 14 weeks. When using medroxyprogesterone injections to induce amenorrhea, the key risk is the possibility of bone loss. Tranexamic acid and mefenamic acid are two other drugs that are used to reduce menstrual flow. Finally, Lybrel is a low-dose combination that contains 0.02 mg of Ethinyl estradiol and 0.09 mg of levonorgestrel (Elliott-Sale et al., 2020; Hicks and Rome, 2010; Hillard, 2014).

The aim of the current study was to measure the awareness, experiences, and satisfaction levels of using medications to postpone and suppress menstruation along with their associated factors and side effects, among Saudi female pilgrims who participated in Hajj seasons from 1437-1441H.

2. Materials and methods

2.1 Study design and population

A cross-sectional survey was conducted on eligible Saudi female pilgrims, who participated in Hajj seasons from 1437 to 1441H. The sample size was determined according to other previous similar studies but aimed for a higher reliability ($n > 1000$) participant. The inclusion criteria were Saudi women at the reproductive age (15–50 years), participated in 1437-1441H Hajj seasons, agreed to participate in the study and had a social media account. The exclusion criteria include non-Saudi women, under 15 years old or postmenopausal, or pregnant women not participated in 1437-1441H Hajj seasons, women who were unwilling to participate and women had no social media account.

An observational cross-sectional survey was performed using a self-administered questionnaire based on closed-ended questions and developed by the authors of this study. The questionnaire was created using Google forms tools and provided in Arabic language. The link to the questionnaire were generated and distributed online via social media platforms (WhatsApp and Twitter) to the targeted women population. The link was made available from 22 of February to 23 of March 2021. All the Saudi females of reproductive age group (15–50 years) who perform Hajj in 1437-1441H Hajj seasons were considered as the study population. The sample size has been calculated by an online formula (<https://www.calculator.net/sample-size-calculator.html>) and adhered to the previous relevant studies with 95% CI and 5% margin of error (Al-Mass et al., 2018; Al-Shaikh et al., 2012). Cronbach's Alpha coefficient was calculated to assess the reliability of the questionnaire and was in the range of 0.8.

The study was implemented in two phases. The first phase included a validity test, in which the questionnaire link was distributed among 150 women known to the researcher to ensure clarity of the questions wordings, readability, comprehensibility, layout and style. After that, the questions were checked, and amendments were applied based on the pre-test feedback during this pilot study. Respondents of the pilot study were excluded from the participants of this study.

The second phase involved distributing the questionnaire link among women via the social networks such as WhatsApp, Twitter. It consisted of 16 questions regarding the participants' demography, awareness, usage of menstruation suppressor pills, side effects of medication during and after usage, and overall satisfaction level. The Study rationale and objectives were clarified to the study participants. The Target groups were assured that their personal information was confidential through an electronic written informed consent that was taken at the beginning of the questionnaire. The questions to awareness and satisfaction were answered as yes or no responses.

2.2 Statistical analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS Inc., Chicago, USA) version 23.0 for windows. Qualitative data were expressed in the form of numbers and percentages (No. & %) and were analyzed by Chi-Square test to determine the differences between variables.

2.3 Ethical consideration

Before starting the study, an ethical approval no. (AMSEC 81-1-9-2020) was obtained from the Ethics committee at the Faculty of Applied Medical Sciences, Umm Al-Qura University.

3. Results

3.1 Socio-demographic characteristics of the study participants

A total of 1132 respondents to the online questionnaire were received. Twenty-two of them were excluded as they were incomplete responses or incompatibility with the pre-set inclusion criteria. Among the total completed respondents from 1110 Saudi female pilgrims; the majority (39.2%) of them ageing between 36 to 45 years and 1096 (98.7%) residing within the Kingdom of Saudi Arabia. Most of the participants (72%) had a university education while 521 (46.9%) were civil servants. 757 (68.2%) of the respondents were married and 516 (46.5%) of them were grand multipara. The year 1437H was the most attended by the participants for Hajj (**Table. 1**).

The study revealed that 618 (55.7%) of the participants had a past history of using medications to postpone and suppress the menstruation. Among them, ages of the participants mostly ranged from 36 to 45 years (42.5%). The majority of pilgrims (98.7%) were residing within the Kingdom of Saudi Arabia, (72.5%) were married and grand multipara (52.1%). With regard to the education level, 466 out of 618 (75.4%) had university education whereas only 3 (0.5%) were illiterates (who declared filling the online questionnaire by other educated member of the same family). Civil servant was the most common occupation (52.3%) among participants, followed by housewife (25.9%) (**Table. 1**).

Table 1: Participant’s socio-demographic characteristics.

Variable	Category	Number of participants (%) (n=1110)	Number of participants (%) with past history of using menstrual suppressors (n=618)
Age groups (years)	15-20	81 (7.3%)	27 (4.4%)
	21-25	127 (11.4%)	50 (8.1%)
	26-30	141 (12.7%)	71 (11.5%)
	31-35	171 (15.5%)	103 (16.7%)
	36-40	217 (19.5%)	130 (21%)
	41-45	219 (19.7%)	133 (21.5%)
	46-50	154 (13.9%)	104 (16.8%)
Residential place	Within the KSA	1096 (98.7%)	610 (98.7%)
	Outside the KSA	14 (1.3%)	8 (1.3%)
Educational level	Cannot read/write	3 (0.3%)	3 (0.5%)
	Just read and write	16 (1.4%)	8 (1.3%)
	Intermediate school	39 (3.5%)	21 (3.4%)
	Highschool	192 (17.3%)	81 (13.1%)
	University	799 (72%)	466 (75.4%)
	Higher education	61 (5.5%)	39 (6.3%)
Marital status	Married	757 (68.2%)	448 (72.5%)
	Single	264 (23.8%)	118 (19.1%)
	Widow	30 (2.7%)	15 (2.4%)
	Divorced	59 (5.3%)	37 (6%)
Number of children	Nulliparous	133 (12%)	58 (9.3%)
	one child	94 (8.5%)	51 (8.3%)
	Multipara	156 (14%)	85 (13.8%)
	Grand Multipara	516 (46.5%)	322 (52.1%)
	Never Married	211 (19%)	102 (16.5%)
Occupation	Student	156 (14.1%)	54 (8.7%)
	Housewife	302 (27.2%)	160 (25.9%)
	Pensioner	29 (2.6%)	23 (3.7%)
	Self employed	70 (6.3%)	43 (7%)
	Civil servant	521 (46.9%)	323 (52.3%)
	Others	32 (2.9%)	15 (2.4%)
Year of previous Hajj or Umrah Experience	1437H	562 (50.6%)	373 (60.4%)
	1438H	156 (14.1%)	65 (10.5%)
	1439H	194 (17.5%)	86 (13.9%)
	1440H	95 (8.6%)	44 (7.1%)
	1441H	103 (9.2%)	50 (8.1%)

3.2 Participants awareness, experience and satisfaction about menstruation suppression

The study revealed that most of the participants (68.3%) were aware about menstruation suppression (Figure 1). It has also been found that gynecologists were the main source of awareness for 206 (18.6%) of the participants, while only few numbers of respondents (n=18, 1.6%) acquired their knowledge from the awareness programs of Hajj. The majority of pilgrims (n=259, 23.3%) reported that they had multiple sources for awareness (Figure 2).

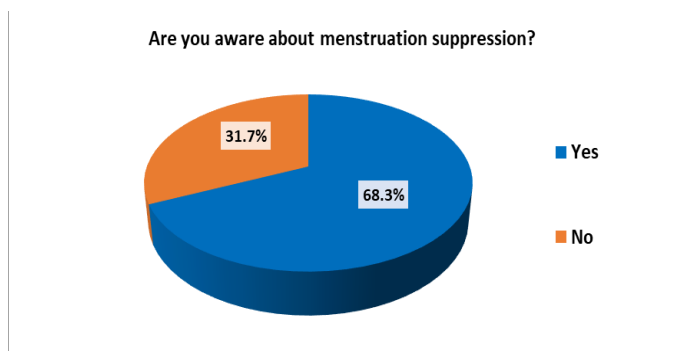


Figure 1: Participants awareness about menstruation suppression.

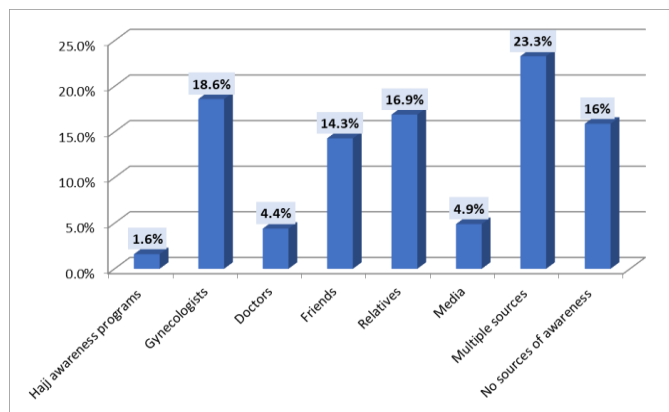


Figure 2: Source of awareness about menstruation suppression.

With regard to the participants awareness level of using medications to postpone and suppress menstruation, it has been found that 44.3% of the participants had no previous history of using menstruation suppressors, while 22% (n=245) had a previous awareness of using such medications. In addition, this study revealed that only 12.6% (n=140) of the participating females have awareness about the common side effects of these medications and 11.3% (n=125) have information about menstruation suppressor drugs (Figure 3).

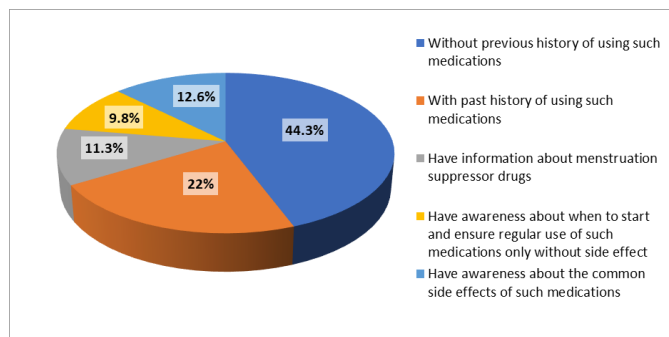


Figure 3: Participant’s awareness level of using medications to postpone and suppress menstruation.

Regarding menstruation suppressor medications, it has been reported that Primolut was the top listed the medications used by 231 (37.4%) out of 618 of the participants to suppress the menstruation. Followed by Yasmin and other type of medications (15.4 and 34.1%, respectively) (Figure 4).

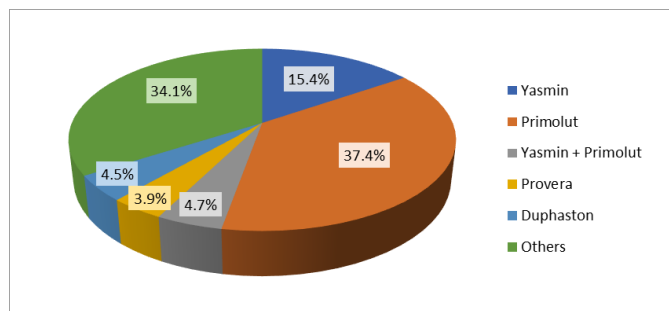


Figure 4: Type of medications used to postpone and delay menstruation periods.

Yasmin contains 3 mg of drospirenone and 0.03 mg of ethinyl estradiol.

Primolut contains 5 mg norethisterone.

Provera contains 10 mg medroxyprogesterone acetate.

Duphaston contains 10 mg dydrogesterone.

With regard to complications arise from these medications, it has been found that mood change was the most reported side effects by 25.9% (n=160) of the participants. Moreover, abdominal and pelvic pain (22.8%) and flooding bleeding with passage of clots were among the most frequent complication detected by 13.4% (n=83) after stop using medications (Table 2).

Table 2: Complications of using medications to postpone and suppress menstruation.

During use	N (%)	After stop use	N (%)
Mood change	160 (25.9%)	Flooding bleeding with passage of clots	83 (13.4%)
Abdominal and pelvic pain	141 (22.8%)		
Low back pain	99 (16%)	Heavy bleeding	73 (11.8%)
Headache	64 (10.4%)	Long bleeding	62 (10%)
Irregular bleeding/Spotting	34 (5.5%)	Multiple complaints	85 (13.8%)
Pain in breast	27 (4.4%)	No complications	315 (51%)
Feeling of weight gain	25 (4%)	NA	NA
Multiple complaints	25 (4%)	NA	NA
No complications	43(7%)	NA	NA

The current study also revealed that about 9.5% (n=59 out of 618) of the participants were suffer from allergic disease as chronic disease, followed by hypertension (6.5%), diabetes (2.4%), heart diseases (1.5%), chronic lung diseases (0.8%) and chronic liver diseases (0.2%). On the other hand,71.3% (n=441) of pilgrims declared that they do not suffer from any disease (**Figure 5**). Forty one percent of the study participants were satisfied of using menstruation suppression medications (**Figure 6**).

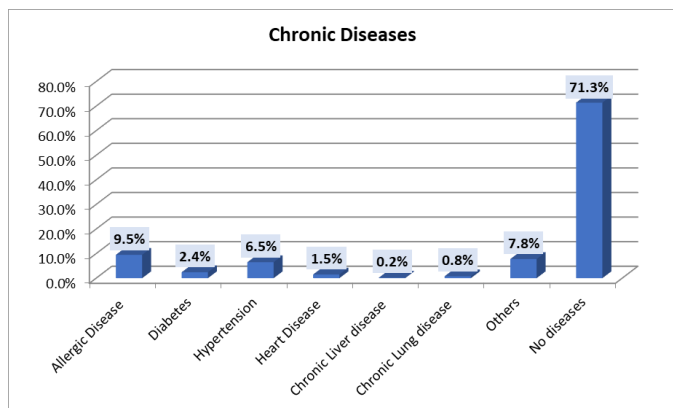


Figure 5: Participants distribution with history of chronic diseases.



Figure 6: Participant’s satisfaction level of using menstruation suppression medications.

3.3 The association between participant’s-demographic characteristics and their awareness about menstruation suppression

Chi-square test was used to determine the association between socio-demographic characteristics and participants awareness about menstruation suppression. A significant association was found between the level of education and level of awareness about menstruation suppression as those who had university or higher education scored the highest level of awareness while all of the illiterates (100%) were not aware about menstruation suppression (P <0.05).However, there was no significant association between women awareness level about menstruation suppression and age, residential place, marital status, number of children or occupation (P >0.05) (**Table. 3**).

Table 3: Association between participants socio-demographic characteristics and awareness about menstruation suppression.

Variable	Category	Awareness about menstruation suppression				P value
		Aware		Not aware		
		N	%	N	%	
Age groups (years)	15-20	45	55.6%	36	44.4%	0.171
	21-25	95	74.8%	32	25.2%	
	26-30	98	69.5%	43	30.5%	
	31-35	119	69.6%	52	30.4%	
	36-40	145	66.8%	72	33.2%	
	41-45	151	68.9%	68	31.1%	
Residential place	Within the KSA	748	68.2%	348	31.8%	0.799
	Outside the KSA	10	71.4%	4	28.6%	
Education level	cannot read/write	0	0	3	100%	0.000
	Just read and write	10	62.5%	6	37.5%	
	Intermediate school	19	48.7%	20	51.3%	
	Highschool	125	65.1%	67	34.9%	
	University	552	69.1%	247	30.9%	
	Higher education	52	85.2%	9	14.8%	
Marital status	Married	529	69.9%	228	30.1%	0.087
	Single	177	67%	87	33%	
	Widow	15	50%	15	50%	
	Divorced	37	62.7%	22	37.3%	
Number of children	Nulliparous	93	69.9%	40	30.1%	0.907
	one child	67	71.3%	27	28.7%	
	Multipara	103	66%	53	34%	
	Grand Multipara	353	68.4%	163	31.6%	
	Never Married	142	67.3%	69	32.7%	
Occupation	Student	99	63.5%	57	36.5%	0.348
	Housewife	205	67.9%	97	32.1%	
	Pensioner	18	62.1%	11	37.9%	
	Self employed	54	77.1%	16	22.9%	
	Civil servant	362	69.5%	159	30.5%	
	Others	20	62.5%	12	37.5%	

4. Discussion

The use of contraceptives has increased dramatically in recent years, with OCP being the most popular type. Inadequate knowledge and indiscriminate use of OCP may pose serious health risks. One of the most important significant problems for women during the Hajj trip is menstruation and most commonly spotting. This issue may delay or postpone the religious rituals. In addition, it is considered as a psychological source of concern for women during the Hajj period. Women’s psychological problems before and after hajj must be controlled, this is recommended in a previous study (Riaz et al., 2014). Keeping this in view, the study was focused on how common OC use and knowledge were among Saudi women during Hajj, as well as how satisfied they were after using these drugs. To the best of our knowledge, this is the first local study on the prevalence of menstrual suppression practice during Hajj seasons. In addition, it includes the largest number of participants reporting on experience of about contraceptive use during Hajj in Saudi Arabia.

The current study has a higher number (n = 1110) of participants as compared to the Nigerian (n = 116) (Mohammed-Durosinslorun et al., 2012), Iranian (n = 400) (Dandehbor et al., 2016), Malaysian (n = 347) (Rafidah et al., 2021) studies as well as from another study over pilgrims from 15 nationalities during Hajj 1437 (n = 594) (Islam et al., 2019).

According to a study conducted in Riyadh, only 31.6 % were aware that OCP can be used to regulate monthly cycles and a higher number (78%) of females were aware of the OCP use in pregnancy prevention (Al-Mass et al., 2018). In contrary, our study depicted a higher level

of awareness (68.3%) about menstruation postponement by medications and coincides with that of the Nigerian study (70.7%) (Mohammed-Durosinlorun *et al.*, 2012) and the study from 15 nationalities during Hajj (93.6 %) (Islam *et al.*, 2019).

But when we look at the level of awareness in terms of the number of participants in the present study, the result showed a higher awareness level of the use of medication to postpone menstruation in female pilgrims and this was due to the need for purity required for entering the Masjid Al-Haram to perform one of the rituals of Hajj, Tawaf-al-Ziyarah and complete the rituals of Hajj.

Moreover, 31.7% of women were not aware about menstruation suppression that means this study depicted a better level than a previous study that reported 78% of women in a random survey had never heard of oral contraceptives for menstrual suppression (Andrist *et al.*, 2004).

The current results indicated lower uptake of medication $n=618$ (55.7%) than awareness $n=758$ (68.3%). This difference was mostly related to modulating the expected days of menstruation not to be during the specific days of Hajj from 8th–13thDhul-Hijjah or because there is a prior planning to go for Hajj, where precautions were taken before. Moreover, the fear of breakthrough bleeding (BTB), either from personal experience, or the experience of friends and family might cause this difference.

Regardless of their marital status, age, occupation, or educational level, more than half of the women in this study used OCP at least once in their lives (55.6%). This result was consistent with previous studies, which showed a similar rate of OC use (44 and 57%) (Al-Mass *et al.*, 2018; Al Sheeha, 2010).

The highest percentage of women using OCP was found in the age group 41 to 45, followed by the age group 36 to 40, which is understandable given that women in this age group are more likely to be married (68.2%). As a result, the use of OCP is required for a variety of reasons, including family planning and birth control. Also, as predicted, the participants in the 15 to 20 year age group did not use OCP because they were mostly unmarried, and they did not consider going to Hajj. As a result, there was a limited data in that age group used OCP.

Briefly, it can be used as a rule that the use of contraceptive increasing with increasing age. This is consistent with other studies which showed similar results (Al-Mass *et al.*, 2018; Elgharabway *et al.*, 2015; Farheen, 2013). More than half of participant women in this study have more than 3 children were 516 (46.5%) and so were the highest users of OCP 322 (52.1%) while the women with only one child were the lowest users of OCP (8.3%) that refer to possibly family planning might not be their interest or may be due to the desire to have more children. According to Al Sheeha (2010), the majority of women tended to have at least 5 and up to 10 children, implying that they would continue to have children (Al Sheeha, 2010).

Remarkably, civil servant scored a higher percentage of OCP using women on average than housewives, for no apparent reason. This contrasts with a previously published national survey, which found that housewives had used more OCP than civil servants (Al-Mass *et al.*, 2018). However, literatures found a few of the predictable reasons for increased OCP usage among civil servants (Mahboub *et al.*, 2015).

We discovered that the majority of respondents were aware of the use of OCP in menstrual suppression, which may be attributed to their discussions about the subject with coworkers, peers, family members, and relatives, but the main single source of awareness and showed higher percentage is the gynecologists (18.6%) followed by multiple sources (23.3%), while only a small portion became aware from the Hajj awareness program. This is consistent with the study from 15 different nationalities during Hajj but inconsistent with Al-Qassim's results that showed the main source of women's knowledge was the family members, television (TV) and internet (Al Sheeha, 2010; Islam *et al.*, 2019).

It has been showed that the preferable type of contraception was oral contraceptives (49.1%). A study in Saudi Arabia, showed that 78.3 % of women preferred pills. A study in Abha showed that 62.9 % of women used pills. Another study in Taif showed that 53.8 % preferred pills and another study in Riyadh reported that 57.1 %

preferred pills (Al-Mass *et al.*, 2018; Albezrah, 2015; Elgharabway *et al.*, 2015; Farheen, 2013; Mahboub *et al.*, 2015).

As in terms of contraception use, illiterate women were the least likely to use it, while women with a university or college degree made up the majority of the women in our study who are actually using one. Briefly, the use of various forms of contraceptive oral pills rises among working women aged 30 and above, those with a higher level of education, and those with a large number of children, which is consistent with the previous studies' findings (Al Sheeha, 2010; Elgharabway *et al.*, 2015; Iftikhar and Al Khail, 2015; Mahboub *et al.*, 2015). The overall rapid change in the Saudi Arabian community's socio-demographic trend, especially the changes concerning women's education and work, are significant determinants of Saudi women's contraceptive knowledge and use (Mahboub *et al.*, 2015).

Nonuse of contraception's reported by (44.3%) of the study subjects. This might be related to their religious beliefs, fear of side effects and previous experience of method failure. Previous studies showed that the most important reasons for not using contraceptives were medical reasons and fear of side effects (Al-Ateeg, 2004; Mahboub *et al.*, 2015).

The most common medication in our results was primolut (37.4%), while combined oral contraceptive pill (COCP) was commonly used by Malaysian and Nigerian pilgrims (53.2%), birth control pills (98.7%) in Iranian pilgrim, while Norethisterone was in the current study. This is due to Norethisterone is a safe and easy-to-find medication that can be used to prolong the menstrual cycle in special events like Hajj and Umrah (Dandehbor *et al.*, 2016; Dean *et al.*, 2019; Mohammed-Durosinlorun *et al.*, 2012; Rafidah *et al.*, 2021; Yazdani *et al.*, 2017).

Among the users of medications 47.5 % complained of medical side effects of using OCP. This rate was higher than that was reported in Iranian study (41%) (Dandehbor *et al.*, 2016). However, the most common side effect of medication in all studies was irregular spotting and BTB (Mohammed-Durosinlorun *et al.*, 2012).

This study showed that the most common complications during OCP use identified by women were mood change (37.1%), abdominal and pelvic pain (35.1%), low back pain (26.4%) and headache (22.5%). According to a survey in the United Kingdom, among healthcare professionals, (87%) believed contraceptive pills trigger mood swings (Wellings *et al.*, 2007). This inconsistent with the study in Riyadh and Al-Qassim were resulted the headache is a general side effect and equal (100%) of total participant. In addition, a study from 15 nationalities during Hajj were result the most commonly irregular bleeding and in other study at King Khalid University Hospital were weight gain (51%) the most commonly reported side effects (Al-Mass *et al.*, 2018; Al-Shaikh *et al.*, 2012; Elgharabway *et al.*, 2015; Islam *et al.*, 2019).

With regard to OCP side effects, flooding bleeding with passage of clots and heavy bleeding were the most experienced side effects among women. This finding was in agreement with the previous study result by Islam *et al.* in 2019 (Islam *et al.*, 2019).

The present study also showed that (41.9%) had positive attitudes and feel satisfied compared to (58.1%) had a negative attitude and would unuse it again toward contraception. Contraceptive-induced menstrual bleeding changes have been identified as a leading cause of contraceptive dissatisfaction and discontinuation in several studies. In general, negative attitudes still prevail in most nations, although positive attitudes are more common in Europe (Lee and Jezewski, 2007; Polis *et al.*, 2018). A correct use of oral contraceptives and completed the Hajj rites thoroughly with no spotting reflects a very high level of satisfaction and this is supported by the study in the Iranian (Yassae *et al.*, 2017). According to our knowledge, this was the first study in our country and region looking at the prevalence of menstrual suppression practice and awareness among female Hajj pilgrims. The provided findings consider as a platform for a future study looking into the outcome of the menstrual suppression practice, to explore the reasons for not opting for menstrual suppression, satisfaction in the intended menstrual suppression duration, and the side effect of the preferred method used for. There are some limitations to this study that should be considered in future research designs. The study was conducted in a small sample compared to the size of female

population of the Kingdom. Furthermore, the majority of the questionnaires were distributed to groups of teachers and Ministry of Health workers, where the majority of the participants are educated and live a modern lifestyle, which is not the case in other regions/cities of Saudi Arabia, with the exception of a few places. As a result, the survey findings cannot be generalized to represent the entire Saudi community.

5. Conclusion

In conclusion, this cross-sectional study measured the awareness and satisfaction level of the Saudi female pilgrims about suppressing and postponing their menstruation using menstruation suppressors. 44.3 % of the participants had no previous history of using menstrual suppression medications. The majority 37.4 % of female pilgrims used Primolut to suppress menstruation and 25.9 % complained of mood changes and flooding bleeding with passage of clots. Overall, 41.9 % of participants were satisfied with using menstruation suppression medications. Despite the fact that OCP have been available as an over-the-counter medication in Saudi Arabia for many decades, the process is either underutilized or misunderstood. Further studies are needed regarding the practice of menstrual suppression among female Hajj pilgrims.

References

- [1] Al-Ateeg, F.A. (2004). Natural family planning revisited. *Saudi medical journal* 25, 285-293.
- [2] Al-Mass, A.A., Al-Shahrani, B.S., Al-Mweisher, A.N., Tulbah, S.A., Syed, S., Anwer, R., and Haque, S. (2018). User Experience, Knowledge and Practice of Oral Contraceptive: A Study from Riyadh, Saudi Arabia. *Annals of Medical and Health Sciences Research*.
- [3] Al-Shaikh, G.K., Mayet, A.Y., Alshaikh, M.K., Hamad, A.F., Mahmoud, M.A., and Aljadhey, H.S. (2012). Knowledge on adherence and safety of the oral contraceptive pill in Saudi women. *Saudi Med J* 33, 665-670.
- [4] Al Sheeha, M. (2010). Awareness and use of contraceptives among Saudi women attending primary care centers in Al-qassim, Saudi Arabia. *International journal of health sciences* 4, 11.
- [5] Albezrah, N.A. (2015). Use of modern family planning methods among Saudi women in Taif, KSA. *Int J Reprod Contraception Obstet Gynecol* 44, 990-994.
- [6] Andrist, L.C., Arias, R.D., Nucatola, D., Kaunitz, A.M., Musselman, B.L., Reiter, S., Boulanger, J., Dominguez, L., and Emmert, S. (2004). Women's and providers' attitudes toward menstrual suppression with extended use of oral contraceptives. *Contraception* 70, 359-363.
- [7] Ascoura, I.E. (2013). Impact of pilgrimage (Hajj) on the urban growth of the Mecca. *Journal of Educational and Social Research* 3, 255-255.
- [8] Christin-Maitre, S. (2013). History of oral contraceptive drugs and their use worldwide. *Best practice & research Clinical endocrinology & metabolism* 27, 3-12.
- [9] Cooper, D.B., and Mahdy, H. (2020). Oral contraceptive pills. *StatPearls* [Internet].
- [10] Dandehbor, W., Kazemi, M., Salehi Shahrabaki, M.H., Ghorashi, Z., Sadrmohammad, R., Bozorg, B., and Bidaki, R. (2016). Menstrual suppression using Oral contraceptives by female hajj pilgrims. *International Journal of Travel Medicine and Global Health* 4, 111-114.
- [11] Dean, J., Kramer, K.J., Akbary, F., Wade, S., Hüttemann, M., Berman, J.M., and Recanati, M.-A. (2019). Norethindrone is superior to combined oral contraceptive pills in short-term delay of menses and onset of breakthrough bleeding: a randomized trial. *BMC women's health* 19, 1-9.
- [12] Elgharabway, R.M., Ahmed, A.S., and Alsuhaibani, R.A. (2015). Awareness, prevalence, and determinants of birth control methods use among women in Saudi Arabia. *International Archives of Medicine* 8.
- [13] Elliott-Sale, K.J., McNulty, K.L., Ansdell, P., Goodall, S., Hicks, K.M., Thomas, K., Swinton, P.A., and Dolan, E. (2020). The effects of oral contraceptives on exercise performance in women: a systematic review and meta-analysis. *Sports medicine*, 1-28.
- [14] Farheen, A. (2013). Ever use of contraceptives among women attending primary health care centers at Abha, Saudi Arabia. *International Journal of Current Research and Review* 5, 26.
- [15] Gatrad, A.R., and Sheikh, A. (2005). Hajj: journey of a lifetime. *Bmj* 330, 133-137.
- [16] Hicks, C.W., and Rome, E.S. (2010). Menstrual manipulation: options for suppressing the cycle. *Cleve Clin J Med* 77, 445-453.
- [17] Hillard, P.A. (2014). Menstrual suppression: current perspectives. *International journal of women's health* 6, 631.
- [18] Iftikhar, R., and Al Khail, B.A.A. (2015). Knowledge about missed contraceptive pills among married women at King Abdulaziz University Hospital. *Patient preference and adherence* 9, 401.
- [19] Islam, N., Ayaz, A., and Farooq, M.U. (2019). Awareness and experiences of female pilgrims about menstrual suppression during Hajj 1437 Hijrah: A cross-sectional study. *Saudi Journal for Health Sciences* 8, 12.
- [20] Johnson, K.A., Sjaarda, L.A., Mumford, S.L., Garbose, R.A., Schliep, K.C., Mattison, D., Perkins, N.J., Wactawski-Wende, J., and Schisterman, E.F. (2016). Patterns and prevalence of medication use across the menstrual cycle among healthy, reproductive aged women. *Pharmacoepidemiology and drug safety* 25, 618-627.
- [21] Lee, J., and Jezewski, M.A. (2007). Attitudes toward oral contraceptive use among women of reproductive age: a systematic review. *Advances in Nursing Science* 30, E85-E103.
- [22] Mahboub, S., Abdelkader, S., Al-Muhanna, A., Al-Musallam, F., Al-Ghannam, J., and Al-Munyif, S. (2015). Attitude towards contraceptives use among Saudi women. *International Journal of Healthcare Sciences* 2, 331-339.
- [23] Memish, Z. (2010). The Hajj: communicable and non-communicable health hazards and current guidance for pilgrims. *Eurosurveillance* Sep 30;15(39):. 15, 19671.
- [24] Meysamie, A., Ardakani, H.Z., Razavi, S.M., and Doroodi, T. (2006). Comparison of mortality and morbidity rates among Iranian pilgrims in Hajj 2004 and 2005. *Saudi medical Journal* 27, 1049.
- [25] Mohammed-Durosolorun, A., Raji, H.O., Hussain, N.A., Badmus, S.A., and Ijaiya, M.A. (2012). Menstrual suppression among female Nigerian pilgrims during Hajj. *Journal of Family Planning and Reproductive Health Care* 38, 270-271.
- [26] Rafidah MR, Zuhra H, Harlina Halizah S, Azah AS and Tan CE.,MR AS, A., and CE, T. (2021). Menstrual Suppression Practice among Female Malaysian Pilgrims. *International Medical Journal Malaysia* VOL.20.January.
- [27]
- [28] Parker, S. (2010). The Hajj: a constant travel destination amidst changing times. *Southern African Journal of Epidemiology and Infection* 25, 14-18.
- [29] Parker, S., Omar, S., and Mahomed, O. (2018). Menstrual abnormalities amongst female South African Hajj pilgrims: a cross-sectional study. *South African Family Practice* 60, 1-4.
- [30] Polis, C.B., Hussain, R., and Berry, A. (2018). There might be blood: a scoping review on women's responses to contraceptive-induced menstrual bleeding changes. *Reproductive health* 15, 1-17.
- [31] Rafidah, M., Zuhra, H., Azah, A., and Tan, C. (2021). Menstrual Suppression Practice among Female Malaysian Pilgrims. *IJUM Medical Journal Malaysia* 20.
- [32] Reed, B.G., and Carr, B.R. (2015). The normal menstrual cycle and the control of ovulation.
- [33] Riaz, S.A., Ahmadi, M., and Mortazavi, S.M. (2014). Predictors of anxiety and depression among women with vaginal bleeding referred to gynecology clinic during hajj 2011. *Iranian Red Crescent Medical Journal* 16.
- [34] Shukla, A., Jamwal, R., and Bala, K. (2017). Adverse effect of combined oral contraceptive pills. *Asian J Pharma & Clin Res* 10, 17-21.
- [35] Talukdar, N., Bentov, Y., Chang, P.T., Esfandiari, N., Nazemian, Z., and Casper, R.F. (2012). Effect of long-term combined oral contraceptive pill use on endometrial thickness. *Obstetrics & Gynecology* 120, 348-354.
- [36] Thiyagarajan, D.K., Basit, H., and Jeanmonod, R. (2019). Physiology, menstrual cycle. *StatPearls* [Internet].

- [37] Wellings, K., Zhihong, Z., Krentel, A., Barrett, G., and Glasier, A. (2007). Attitudes towards long-acting reversible methods of contraception in general practice in the UK. *Contraception* 76, 208-214.
- [38] Wright, K.P., and Johnson, J.V. (2008). Evaluation of extended and continuous use oral contraceptives. *Therapeutics and clinical risk management* 4, 905.
- [39] Yassae, F., Shekarriz-Foumani, R., and Sadeghi, S. (2017). Menstrual Adjustment Administering Hormonal Agents: A Survey of Iranian Pilgrim Women During Long-Term Travel. *Journal of Obstetrics, Gynecology and Cancer Research (JOGCR)* 2, 0-0.
- [40] Yazdani, T., Karim, F., Mukhtar, M., and Ehsan, A. (2017). Comparison of Efficacy of Norethisterone (Primolut-N) Between Twice or Thrice Daily Dose to Avoid Menstrual Bleeding During Hajj and Umrah. *Journal of the Society of Obstetrics and Gynaecologists of Pakistan* 7, 65-70.