Journal of Research in Medical and Dental Science
2022, Volume 10, Issue 1, Page No: 271-277

Available Online at: www.jrmds.in
eISSN No.: pISSN No.2347-2545

Average Time Rate with the First Pregnancy among Saudi Female Population: A Cross-Sectional Study

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ABSTRACT

Background: Pregnancy is a natural process that in the vast majority of cases proceeds without complications. To make sure that mother and child are doing well during the 40 weeks of pregnancy, there is a network of preventive medical check-ups that every pregnant woman can take advantage of. However, the time of the first pregnancy is influenced by many factors, either health related issues or other social and personal considerations.

Methods: This was an analytical cross-sectional study to spot light on average interval between the marriage and the first pregnancy among Saudi women population. The study was carried out at universities, hospitals and malls in KSA. Data were collected from patients and general population at November 2021.

Results: From the 754 selected women, the most common age group at which marriage occurred was 23-25 years (n=240, 31.8%). The most frequent time of first pregnancy was during the first three months immediately after marriage (n=195, 25.9%). However, the longest period at which first pregnancy occurred was after 5 years from marriage (n=11, 1.5%). There were 192 participants (25.5%) who had menstrual irregularities, 399 participants (53 %) were using different kinds of contraception, 84 participants (11.1%) had previous miscarriage for at least one time, consanguinity was present among 191 participants (25.3%), and a small percentage of women had problems with infertility from the husband side (n=34, 4.5%).

Conclusion: Nearly one fourth of the selected sample of women had their first child during the first three months immediately after marriage.

Key words: Pregnancy, Saudi women, Fertilization, Cervical mucus

HOW TO CITE THIS ARTICLE: Hoda Jehad Abousada, Hanyah Abdulhadi Al-Khify, Afaf Abdulrahman Yaslam, Lubna Abdulrahman Hafiz, Anwar Mustafa Nahhas, Jabir Mohammed Alnabhani, Dina Mohammad Aljabri, Rakan Abdulaziz Alanazi, Ahmed Fahad Fakhri, Sarah Ahmed Al Ghanmi, Manar Nahar Aljohani, Albraa Mohammed Bogis, Fotoon Saeed Alzhrani, Ibraheem Mohammed Bashmail, Ruba Ayad Alobaidi, Average Time Rate with the First Pregnancy among Saudi Female Population: A Cross-Sectional Study, J Res Med Dent Sci, 2022, 10(1): 271-277

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Received: 08/12/2021
Accepted:24/12/2021

INTRODUCTION

Depending on their age, women who want to have children need around two to six months to become pregnant. Knowing their cycles can help them to determine fertile days and increase their chances of having a baby.

The fertile days are the period from about 3-5 days before and 12-24 hours after ovulation, with the probability of pregnancy being highest on the day of ovulation, which usually takes place in the middle of a woman's cycle [1]. Different methods, such as the temperature method or the cervical mucus, provide more precise information about the fertile days. If fertilization does not occur during the

fertile days, the egg cell is expelled by menstruation and a new cycle begins.

A woman has a maximum of six days during each month in which she can become pregnant. So, the probability of getting pregnant is not as great as many believe. In fact, it is around 20 to 30% per cycle and depends on the age and disposition of the couple. Women wanting a baby can increase their chances of conceiving by specifically having sex with their partner on their fertile days. To do this, however, they need to know their cycle well, because it differs from woman to woman; on average, it lasts 28 days - but it can vary between 21 and 35 days [2].

A woman's cycle begins on the first day of her period, i.e., with the bleeding of the uterine lining that was built up in the previous cycle. At the same time, an egg cell, which is surrounded by an egg vesicle (follicle), matures in one of the two ovaries. About the middle of the cycle - 14 days before the next menstrual period - ovulation occurs; the egg shell bursts and releases an egg cell that is capable of fertilization, which then migrates down the fallopian tube towards the uterus. From this point on, there are around 12 to a maximum of 24 hours in which the egg can be fertilized. The remaining egg shell becomes the corpus luteum and produces the hormone progesterone, which stimulates the uterine lining to grow and prepares it for a fertilized egg cell to implant. If fertilization has not taken place, the progesterone level drops again. The lining of the uterus and the egg are expelled as menstrual bleeding begins and a new cycle begins [3]. In the case of fertilization, on the other hand, the egg cell divides and nests in the uterine lining around the sixth day after it has fused with the sperm cell. A new life has begun.

The fact that an egg can only be fertilized for around 12 to 24 hours after ovulation does not mean that sexual intercourse will only lead to pregnancy during this time window. In fact, sperm survive in the female body for three to a maximum of five days. Women can also get pregnant if they have had sexual intercourse five days before ovulation [4]. Together with the day of ovulation, this results in a fertility window of six days, with the day of ovulation being the most fertile day. So, if you and your partner are planning on having a child, you should know what stage of the cycle you are in. There are several methods of determining this; like: The temperature method and observation of the cervical mucus [5].

LITERATURE REVIEW

Sterile is the name given to a couple who, despite regular sexual intercourse, do not become pregnant within 1-2 years. Form primary sterility is used if conception has never occurred before secondary sterility, if at least one pregnancy has preceded it, regardless of whether it was carried to term. About 15% of couples are involuntarily childless. The causes are 30% in the man, 30% in the woman and 30% in both partners; in 10% the causes remain unexplained what is considered to be called idiopathic sterility [6]. Often the sterility is a temporary fertility disorder that can in principle be treated, on the other hand, is seldom present, for example if the man does not produce any sperm cells or the woman has had her uterus removed.

Infertility is the inability to successfully carry a pregnancy to term (for example, when repeated miscarriages occur); however, the term is often equated with sterility, i.e., the inability to father a child [7].

In order to get pregnant, it is useful to know when the ovulation will occur. After ovulation, the egg cell remains capable of fertilization for about 24 hours; sperm survive in the woman's body for up to five days. The optimal period for sexual intercourse begins two days before ovulation and ends one day after. Those who previously used contraception with the " pill " need an average of a few months longer to become pregnant. But even without contraception, the chance for a healthy couple with regular sexual intercourse is only about 25% per month [7]. Waiting times up to one Year are therefore still normal.

The best age to become pregnant is for women between the ages of 20 and 30 years old. From 30 onwards fertility drops slightly, from 35 onwards significantly and from 45 onwards the probability of becoming pregnant is almost zero [8]. The egg cell depot in the ovaries is decisive for how long a woman can have children. While a woman has a million immature egg cells at her birth, the number drops to around 25,000 by the age of 37. The number of egg cells with chromosome damage increases. Nevertheless, more and more women do not decide to have a child until they are 30 [9]. One of the main reasons for this can be seen in the generally longer training periods and the changed living and working conditions of women today: child, career and partnership must be brought into harmony. But when the head finally says "yes", the body often objects. It is not uncommon for a trip to a center for reproductive medicine to follow. On the other hand, there have always been late mothers whose children were born without any problems. Many risks for the children of older mothers can be recorded statistically, but they are also not dramatically increased. The discussion, which was partly reproachful in the media. Late motherhood should not be overstated in a couple's personal choice. After all, no one sets an age limit for men either, since in principle they can be procreative until the end of their lives. However, the number of fertile sperm cells decreases from the age of 40. And erectile dysfunction, which increases with age [10,11], is another problem.

The most important control centres for reproduction are located in the brain and are extremely sensitive to external influences. Pressure at work or unemployment, financial worries, partnership conflicts, exams, deaths in family or friends - all of this can lead to menstrual disorders in a woman, suppress ovulation and inhibit semen production in men, even if this factor is difficult to quantify. Of course, stress cannot (always) be avoided, but it is important to create a balance through physical exercise, a healthy diet and relaxation. For many couples, stress creates a great emotional burden of infertility [12]. Often both partners are frustrated when no pregnancy

occurs, even though they have done everything possible. This negative sentiment and is increasing expectation ensure on-going stress and anxiety It is important, albeit often not easy, to simply be more relaxed about the problem.

Both severely underweight and severely overweight women often experience fertility problems [13]. If you consume fewer calories than you need, the organism slows down the burning of nutrients and cuts down those bodily functions that are not absolutely vital, such as reproductive capacity. The monthly cycle can stop after just two weeks without a steady increase in food. In the case of very overweight women, on the other hand, the estrogen balance is disrupted by the estrogen production of the fat cells, and this excess of estrogen also reduces fertility [14].

The composition of the food also plays a role [14]. A very high-carbohydrate, vegetarian diet leads to menstrual disorders more often than a balanced Mediterranean diet.

It is still unclear whether men's reproductive capacity is influenced by their body weight and appropriate diet. Environmental influences and competitive sports. In men, strong heat or overheating of the testicles affects, also through intensive cycling or wearing (too) tight jeans have a negative impact on semen production and quality [15]. In women, too, competitive sport, or rather continuous intense physical exertion, can lead to the absence of menstrual bleeding or ovulation [16]. Constantly high noise levels also seem to have a negative impact on woman's fertility. Industrial pollutants and environmental toxins such as heavy metals or pesticides also damage fertility in principle.

High alcohol consumption affects fertility in both men and women. Alcohol-dependent women unfortunately often suffer from menstrual cycle disorders, while in men, in addition to potency, sperm production and mobility are also reduced. However, the disorders normalize after three months of abstinence [17].

Smoking also affects the sperm count and mobility of men. In women, smoking too much reduces the conception rate and increases the risk of miscarriages [18]. Here, too, the situation improves after several weeks of weaning.

METHODS

Study design

This was an analytical cross-sectional study to spot light on the interval between the marriage and first pregnancy among Saudi women.

Study setting

The study was carried out at universities, hospitals and malls in KSA. Data were collected from females in the general population during at November 2021.

Sampling and sample

Participants were chosen via probability simple random sampling technique. Participants were selected from the general population. The final number of sample size was 800 participants. However, the study included 754 participants.

Inclusion criteria

Married women, those who have been pregnant, and those who have never been pregnant.

Exclusion criteria

None.

Instruments

Data collection tool was self-designed and base on latest literature. It contained the following information: (1) Sociodemographic characteristics: age, BMI, and (2) Disease related information: age when getting pregnant, Smoking, DM, PCO, extensive exercise, endometriosis, thyroid disease, relative husband and disease in husband causing infertility.

Statistical analysis

Data was entered and analyzed using SPSS version 23. Descriptive statistics were performed and categorical data was displayed as frequencies and percentages while measures of pregnancy rate and measures and age were used to summarize continuous variables.

Univariate and multivariate analysis were performed to investigate association between age, BMI, smoking, DM and other disease can cause infertility or delay pregnancy.

Statistical significance is set at a P value of 0.05 or less.

Permission and ethical considerations

Administrative approval will be sought from the unit of biomedical ethics research committee Ethical approval was sought from the ethical committee of the faculty of medicine, King Abdul-Aziz University.

An informed consent was sought from the participants.

RESULTS

The current study sheds light on the average time of first pregnancy among Saudi women.

The study included responses from 754 women. Women's answers about the age of marriage varied. The most common age group at which marriage occurred was 23-25 years (n=240, 31.8%).

The different answers of age at marriage are presented in Figure 1.

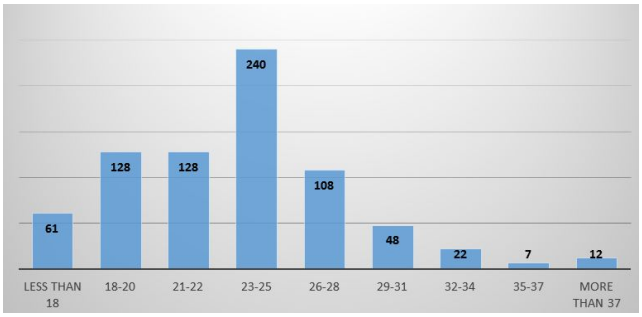

Figure 1: Age at marriage among study participants.

The first pregnancy occurred at various intervals from the beginning of marriage.

The most frequent time of first pregnancy was during the first three months immediately after marriage (n=195, 25.9%) which represents one fourth of participants.

The longest period at which first pregnancy occurred was after 5 years from marriage (n=11, 1.5%). Participant's responses to the time of first pregnancy is presented in Table 1.

Table 1: Time of first pregnancy from marriage among study participants.

Time of first pregnancy	Frequency	Percent
Within first three months immediately after marriage	195	25.9
Within 6 months	147	19.5
Within 1 year	146	19.4
Within 2 years	127	16.8
Within 3 years	45	6
Within 4 years	23	3.1
Within 5 years	11	1.5
After 5 years	11	1.5
No pregnancy occurred	49	6.5

Participants were asked about their weight and height. The mean body mass index was 25.74 ± 7.23 with median body mass index of 24.5. Participants were asked about their smoking status. Majority of participants are not smokers. Their answers are presented in Figure 2.

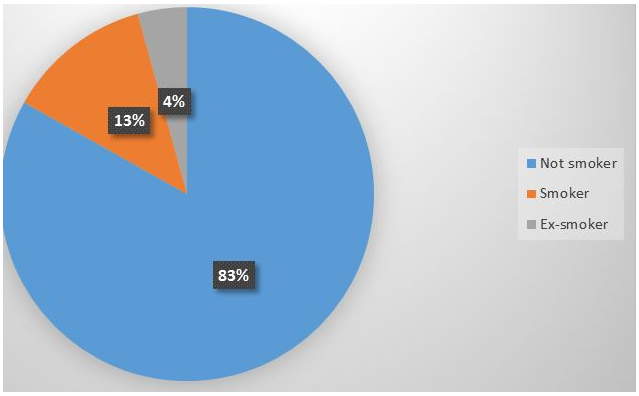

Figure 2: Smoking status of study participants.

Participants were asked if they practice any hard sports. There were 102 participants involved in hard exercise and sports (13.5%). Participants were also asked about the menstrual cycle. There were 192 participants (25.5%) who had menstrual irregularities while the rest have regular menstrual cycle. Participants were also asked about the use of contraception. There were 399 which are slightly more than half of participants used different kinds of contraception (Figure 3).

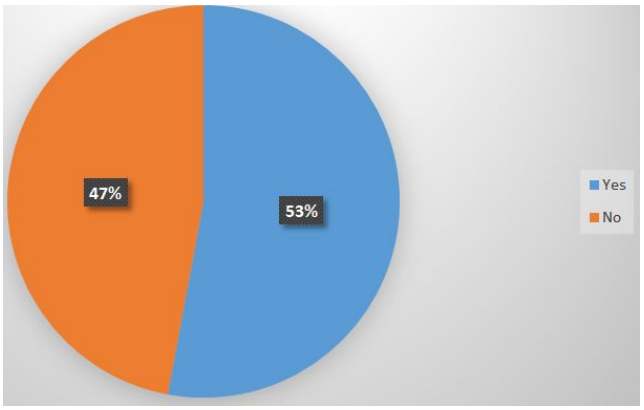

Figure 3: Participants' use of contraception.

Participants were asked if they had any gynaecological problems such as ovarian cyst and endometriosis. Their answers are presented in Table 2.

Table 2: Gynaecological problems among study participants.

Gynecological problem	Frequency	Percent
Ovarian cyst	109	14.5
Endometriosis	85	11.3

On the other hand, participants were asked if they had any other comorbid disease especially endocrine problem such as DM, thyroid and others. Their answers are presented in Table 3. It is noticed that majority of study participants had anemia especially iron deficiency anemia (n=333, 44.2%).

Table 3: Distribution of comorbidities among study participants.

Comorbidity	Frequency	Percent
Diabetes mellitus	60	8
Thyroid (Hypo- or Hyper)	95	12.6
Immunity problems	56	7.4
Anemia	333	44.2

Some of participants experienced miscarriage during their life. There were 84 participants who had previous miscarriage for at least one time (11.1%). Consanguinity was present among 191 participants (25.3%) which means woman and her husband is relatives. Small percentage of women had problems with infertility from the husband side (n=34, 4.5%).

DISCUSSION

The birth of a baby is celebrated as a harbinger of hope and happiness. The role of women in bringing this happiness to families cannot be underestimated. However, women often do not get the respect they deserve, especially as mothers.

The World Health Organization (WHO) has recognized the "three delays" that contribute most to maternal mortalities across countries: delay in deciding to seek care, delay in reaching a place of care, and delay in receiving appropriate and adequate care [19]. Women must be aware of the danger signs of obstetric complications that occur during pregnancy as well as the intrapartum and postpartum periods.

Our study highlighted the interval between marriage and first pregnancy and the average time rate of first pregnancy. It was found that most of participants had pregnancy within the first three months of marriage and some needed more than 5 years to have their first baby while others are still without any pregnancy.

Although sexual health, contraception, and demographic reproduction have been widely studied in the south of Saudi, this is the first study to describe fertility distribution as a representative of South-Iran population.

The validity and reliability of the questionnaire which used to collect the reproduction information was assessed in several studies and was suggested as suitable tool in retrospective studies [20]. In the present study, several factors were found to have a significant impact. However, only the regularity of menstruation, age at marriage, and height of women had significant roles in the models. Furthermore, height and age at marriage played somewhat different roles in the last two models.

Although there are no data in Saudi population to compare these results with, the effect of age of women in this model is in agreement with some other studies. For example, in an observational study by Kaplan et al, 1,000 pregnant women were asked how long it took them to conceive [21]. In a period of three months after marriage, about 71 percent of younger than 30 years' old women were conceived. This proportion for older women was just 41%. Also, the result of another study on 2,112 pregnant women in the UK showed that increasing age of both men and women have inverse correlation with the time to first pregnancy [22].

The study by Amin, et al. showed that a higher age at getting married had a negative correlation with TTFP, and when marriage took place during the peak fecundity years, women were more likely to be conceived sooner after marriage to compensate for their late start [23]. Factors such as a lack of contraception, societal norms, and expectations supported short first-birth intervals. This view is supported by the findings of Singh et al [24]. The interpretation of TTFP studies takes account of some possible behavioural factors.

Also, Singh et al noted that there is a significant relation between the education levels of couples and the duration of the waiting time to conception [24]. One explanation for this discrepancy could be the small sample sizes used in our study. There is, therefore, a need for further studies to explore this observation, with the aim of increasing planned pregnancies. The median TTFP was 6.4 months for our study. Since TTFP distribution has not been previously studied in Iran, there were no Iran-based studies to compare this distribution to. But it could be said that the study population had a relatively rapid rate of conception compared with some other studies. In research conducted in Manipur, India, the median duration of the waiting time to conception was eighteen months, which is a low rate compared to our study.

In a South African study, the median time to pregnancy in the population was six months, with 68% of women achieving pregnancy in the first year, which is similar to our study [25]. This proportion is within the 67-85% range reported for five European countries in a multi-country population study [26]. An article on the trend for global infertility, published in 2009, noted that the rate of infertility ranges between 6-10% for some Western countries [27]. Our data would suggest an association between the regularity of menstruation cycles and longer

TTFP. This finding is in line with the previous findings of an early study in Bogota, Colombia which showed that irregular menstrual cycles can enhance TTP among women working in agricultural production [28]. It is not possible to compare the figures with those for other population in Iran because there are no previous studies on this topic. Height had a significant effect on TTFP which is in agreement with a previous finding by Sear et al. [29].

It is important to note that, since the data in our study was self-reported, there may be interviewer biases and some other biases.

CONCLUSION

I was noticed that the Saudi women generally married at younger ages (23-25 years), and almost one fourth of the selected ladies had their first pregnancy during the first three months of marriage. Moreover, one fourth of the participants were suffering from menstrual irregularities, and almost half of the participants were using different contraceptives. Some gynaecological abnormalities were reported like endometriosis and ovarian cysts.

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