ORIGINAL ARTICLE

First Evidence for Applicability of Birth Control Methods in Iran: A Journey from Past to Modernity

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Abstract
Iran has used contraceptives in one form or another for thousands of years throughout its history. Various birth control methods were among the major topics explored in Persian medicine (PM). This article examines the sources cited in the aforementioned manuscripts and showcases Iranian sages' knowledge of contraception. The findings indicate that PM medical books contain a variety of birth control methods. The scholars identified up to eight methods they believed to be effective in preventing conception, including behavioral methods, withdrawal, oral medications, and contraceptive devices such as condom-like coverings, vaginal remedies, exterior oils, and fumigations. It is clear that PM scholars knew about all the alleged contraceptives in use. They knew about coitus interruptus and coitus reservatus, used a wide variety of suppositories or pessaries, and believed in some exercises of dubious validity, such as jumping backward, sneezing, or anointing the penis with various salves and oils.

Key words: Birth Control, Contraceptives, Iran, History of Medicine, Persian Medicine

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Introduction

Birth control has a long-standing history, with evidence of its existence dating back to prehistoric times. It has been an important issue since antiquity (Riddle, 1994). Whether any population control methods and related customs were deliberately adopted as a means of birth control is unclear, but it seems clear that throughout human history, various methods have been tried to prevent pregnancy (Bullough, 2001, pp. 11-15, 69–70, 102, 153-155, 174).

People, especially women, since the first families were formed, have been trying very hard to understand women's fertility and human reproduction and establish some family planning. This so-called folk medicine has occasionally been preserved (Bullough, 2001, pp. 11-15, 69–70, 102, 153-155, 174).

From a historical standpoint, the earliest known reference to contraceptive methods can be traced back to an illustration dating approximately 12,000-15,000 years ago. This illustration, found on the wall of a cave in France, depicts a man utilizing a condom during sexual intercourse (Collier, 2007, pp. 9-13). Furthermore, the oldest known medical text is the Kahun gynecological papyrus, which is believed to have originated from ancient Egyptian civilizations around 1850 BC or 1825 BC (Suitters, 1968, pp. 9-11; Smith, 2011, pp. 54-55). Almost without exception, they employed their own knowledge rather than strictly transcribing the works of physicians who lived before their times (Riddle, 1994). Iran's great physicians and scientists recorded solid chapters on the problem of contraception (Suitters, 1968, pp. 9-11). Many of the excellent, gifted medical scholars, such as Rhazes (860 – 932 AD) and Avicenna (980 – 1037 AD) who lived during the 'Golden Age of Islamic Medicine' (9th to 12th century AD) wrote on contraceptive methods and developed it (Bullough, 2001, pp. 11-15, 69–70, 102, 153-155, 174; Suitters, 1968, pp. 9-11; Riddle, 1994). Many of their works, which more than equaled the information known to the ancients (Riddle, 1994), came into Europe first in Latin translations (Bullough, 2001, pp. 11-15, 69–70, 102, 153-155, 174). Persians, for instance, mention penis coverings made from leathery materials made to be worn while having sex; this reintroduced or reinforced the use of quiet experimentation with the condom in Europe (Collier, 2007, pp. 9-13). Fortunately, many of these customs and traditions have survived and can be tested to see how effective they are in lessening the potentiality of becoming pregnant.

Even though the existence of such a unique approach to methods used in birth control in PM can play an essential role in family planning today, little research has been done on this issue. As far as we know, three studies precede the articles in this field. One of them, which Sabourian et al. did, concentrated on medicinal plants used in PM, such as Ruta graveolens, as contraceptive agents (Sabourian, et al., 2016, pp. 974-985). Another theme that Yarmohammadi et al. reviewed was contraception from the viewpoint of Al-Akhawayni Bukhari (about 983 AD), one of the most prominent Persian physicians of the 'Golden Age of Islam' (9th– 12th centuries AD) (Yarmohammadi, et al., 2013, pp. 435-440). The last (in Persian), which is somewhat similar in the result to ours, is what Nekoolaltak et al. did. They compared contraceptive methods in PM and modern medicine (Nekoolaltak, Tansaz, and Bioos, 2012, pp. 55-77). The difference is that the structure of our essay tends to concentrate on the history of birth control in Iran and the applicability of its methods from the past to modernity. Therefore, it can be different from others while also being an original idea.

Results

A review of the sources of medicine in Iran will show that the practice of contraception was not prohibited. So, the issue of birth control was among the topics that Persian scholars investigated and discussed in their works. Iranians are technologically advanced people and have developed several methods to prevent too many inconvenient pregnancies. Usually, they involve the use of various plants or substances to block the way to the uterus and absorb semen, many of which have been found to have some effect on lowering the total maternity ratio.

Early Persian Methods

1- Behavioral Methods

Many of the earliest methods of family planning in Persian medicine (PM) were based on harsh body movements after intercourse. The sources contain discussions on behavioral methods of contraception. The woman, for example, should raise immediately after coitus (Rhazes, 1991, p. 440; Hakim Nazim Jahan, 2008, p. 761), jump violently backwards from seven to nine times forcefully or sneeze so that the sperm may come out (Rhazes, 1987, pp. 277-278; Rhazes, 1991, p. 440; Hakim Nazim Jahan, 2008, p. 761; Hakim Arzani, 2008, p. 957; Avicenna, 2005, Vol. 1, p. 432; Vol. 2, pp. 31, 111-112; Vol. 3, p. 462; Baghdadi, 1943, Vol. 2, pp. 84, 134, 170, 172; Vol. 4, p. 60; Bahā'al-Dawlah Razi, 2003, pp. 545-546). Another way is for the woman to blow her nose several times and call out in a loud voice or smell foul odors (Bahā'al-Dawlah Razi, 2003, pp. 545-546).

Nowadays, we can categorize behavioral approaches for contraception into two groups: methods independent of the menstrual cycle (like abstinence or coitus interruptus) and methods dependent on the menstrual cycle. Fertility Awareness Methods (FAM) and "Natural" Family Planning (NFP) are the two main groups that utilize the menstrual cycle. Fertility Awareness Methods (FAM) involve women monitoring physiological changes during their menstrual cycle. At the same time, Natural Family Planning (NFP) relies solely on the monthly calendar to differentiate between fertile and non-fertile days (Altshuler, and Blumenthal, 2020, pp. 239-254). FABMs of family planning assess fertility indicators and symptoms during the menstrual cycle to pinpoint the "fertile window" or the days when unprotected sexual activity is most likely to cause conception. Menstrual cycle length, basal body temperature, urine hormone measures, and cervical fluid may be used alone or together. Women acquire the skill of observing or measuring and interpreting these indicators in accordance with the guidelines of their selected Fertility Awareness-Based Method (FABM) and refrain from engaging in sexual intercourse without using contraception on days when they are most likely to conceive (Simmons, and Jennings, 2020, pp. 68-82). Young women who prefer not to use chemical contraceptives and physical barriers frequently use these methods (Zhang, et al., 2024, pp. 7-12).

2- Withdrawal

Another way to prevent the entrance of the semen into the uterus is to block the cervix with withdrawal. There are two types of sexual behavior in PM: coitus interruptus and coitus reservatus. Both have been used for contraception (Bahā'al-Dawlah Razi, 2003, pp. 545-546). The practice of withdrawal (coitus interruptus) predates the implementa-

tion of contemporary contraceptive technologies and continues to be a widely employed technique for preventing pregnancy (Nguyen, et al., 2020, pp. 1-7). However, evidence showed that the withdrawal method has a lower efficacy compared to many other contraceptive methods, with a 20% likelihood of pregnancy during average use over the course of one year (Trussell, and Aiken, 2018).

Barrier Methods

1- The Condom

Although Iranian sages' wording about times when semen should not be allowed "in" is typically vague, their explanation of how to avoid getting it "in" while still having sex sounds a lot like using a condom. Hakim Arzani, for example, suggested condom-like coverings made from a cotton cloth of fine fabric to coat the penis before intercourse (Hakim Arzani, 2008, p. 957).

Currently, synthetic latex condoms, often known as penile sheaths, continue to be the most commonly utilized male barrier technique. Contemporary female condoms are composed of either latex or nitrile. Condoms have several benefits, including their cost-effectiveness, widespread availability, consistent reliability as a contraceptive method, and ability to provide protection against most sexually transmitted infections. The drawbacks include the time required to put on a condom, which might break the intimacy, as well as a reduction in sexual experience (Anderson, and Johnston, 2023, pp. 154-8).

2- Vaginal Suppositories and Pessaries

Contraceptive vaginal suppositories and pessaries are birth control methods that Iranian sages expand upon. They were perhaps the most commonly used substances to block and absorb semen. Some of the methods were probably effective. For example, the suppositories might have had resins that blocked the entrance to the cervix or oils that reduced the motility of the sperm (Bullough, 2001, pp. 11-15, 69–70, 102, 153-155, 174). The first formula is a suppository of rue or pepper, which should be used instantly after coitus (Hakim Aghili, 1844, pp. 126, 276, 473, 492, 866; Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309; Hakim Arzani, 2008, p. 957; Ibn Jazla, 2009, pp. 168, 631, 338, 668, 681, 823, 338; Hakim Momin, 2001, Vol. 1, pp. 97, 102, 668, 689; Vol. 2, p. 497; Ibn al-Nafis al-Qarashī, 2008, Vol. 14, p. 309; Vol. 22, pp. 126, 213; Vol. 23, p. 377; Vol. 29, p. 87).

Rhazes told of other medicines that prevent pregnancy, such as cabbage flowers or seeds as a suppository to put the vagina near the time of the cleaning period Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309).

The uterine aperture could also be blocked by suppositories or pessaries made up of a number of ingredients including the inner skin of the pomegranate (Hakim Arzani, 2008, p. 957), ear wax from animals (Bahā'al-Dawlah Razi, 2003, pp. 545-546), elephant dung (Hakim Arzani, 2008, p. 957; Ibn al-Nafis al-Qarashī, 2008, Vol. 14, p. 309; Vol. 22, pp. 126, 213; Vol. 23, p. 377; Vol. 29, p. 87; Avicenna, 2005, Vol. 1, p. 432; Vol. 2, pp. 31,111-112; Vol. 3, p. 462; Baghdadi, 1943, Vol. 2, pp. 84, 134, 170, 172; Vol. 4, p. 60), tamarisk gum (Bahā'al-Dawlah Razi, 2003, pp. 545-546), dianthus barbatus (Hakim Aghili, 2008, Vol. 1, p. 615; Vol. 2, p. 1133; Hakim Momin, 2001, Vol. 1, pp. 97, 102, 668, 689; Vol. 2, p. 497), tar (before or after coitus) (Rhazes, 1987, pp. 277-278; Baghdadi, 1943, Vol. 2, pp. 84, 134, 170, 172; Vol. 4, p. 60; Avicenna, 2005, Vol. 1, p. 432; Vol. 2, pp. 31,111-112;

Vol. 3, p. 462; Hakim Momin, 2001, Vol. 1, pp. 97, 102, 668, 689; Vol. 2, p. 497), Hedera (Avicenna, 2005, Vol. 1, p. 432; Vol. 2, pp. 31,111-112; Vol. 3, p. 462), colocynth pulp, ox bile (Bahā'al-Dawlah Razi, 2003, pp. 545-546), and whitewash (Hakim Aghili, 2008, Vol. 1, p. 615; Vol. 2, p. 1133; Hakim Momin, 2001, Vol. 1, pp. 97, 102, 668, 689; Vol. 2, p. 497; Hakim Aghili, 1844, pp. 126, 276, 473, 492, 866), used alone or in combination.

Also recommended was the use of pessaries made of rock salt for women for whom pregnancy may be dangerous (Baghdadi, 1943, Vol. 2, pp. 84, 134, 170, 172; Vol. 4, p. 60; Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309). The use of rock salt was probably effective because it acted as an astringent (Bullough, 2001, pp. 11-15, 69–70, 102, 153-155, 174). Some, including Rhazes, Avicenna, Hakim Momin, and Hakim Arzani, advised putting mint into the vagina before sexual intercourse (Hakim Momin, 2001, Vol. 1, pp. 97, 102, 668, 689; Vol. 2, p. 497; Muhammad bin Yusuf Heravi, 2008, pp. 55, 371; Baghdadi, 1943, Vol. 2, pp. 84, 134, 170, 172; Vol. 4, p. 60; Ibn al-Nafis al-Qarashī, 2008, Vol. 14, p. 309; Vol. 22, pp. 126, 213; Vol. 23, p. 377; Vol. 29, p. 87; Ibn Jazla, 2009, pp. 168, 631, 338, 668, 681, 823, 338; Avicenna, 2005, Vol. 1, p. 432; Vol. 2, pp. 31,111-112; Vol. 3, p. 462; Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309; Hakim Arzani, 2008, p. 957). Rhazes believed the insertion of Black Hellebore into the vagina could prevent pregnancy (Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309). As a suppository, a combination of copper dross is good if mixed with lemon juice (Hakim Aghili, 1844, pp. 126, 276, 473, 492, 866).

The vagina's high permeability to a broad range of medications with varying molecular weights enhances its pharmacokinetics (Acarturk, 2009, pp. 193-205). Therefore, in modern medicine, the vaginal administration of various pharmacologically active substances, including pills, lotions, gels, pessaries, and foams, has become a widespread practice. This method is beneficial for treating local genital disorders such as infections, neoplastic lesions, and vaginal atrophy, as well as for contraceptive and labor-related purposes (Das Neves, et al., 2015, pp. 53-70; Wong, Dhanawat, and Rathbone, 2014, pp. 1419-34). Evidence revealed that vaginal administration offers advantages over traditional methods of pharmaceutical distribution by bypassing hepatic first-pass metabolism, preventing gastrointestinal side effects, and minimizing hepatic side effects associated with hormone replacement therapy or contraceptive medications. Furthermore, the vaginal method circumvents complications such as discomfort, tissue damage, and infection, which are common in alternative parenteral methods. Moreover, the dosage form of Vaginal Suppositories and Pessaries can be inserted and removed by the user (Jalalvandi, et al., 2021, p. 3; Leyva-Gómez, et al., 2018, p. 1549; Srikrishna, and Cardozo, 2013, pp. 537–543; Sharma, Bansal, and Banik, 2011, pp. 367–375). On the other hand, the complex activities and characteristics of the vagina, including its physicochemical, physiological, histological, and anatomical qualities, vary depending on factors such as age, menstrual cycle, pregnancy, and sexual arousal. These variations can impact the effectiveness and duration of vaginal contraceptive administration (Sharma, Bansal, and Banik, 2011, pp. 367–375; Jalalvandi, et al., 2021, p. 3).

3- The Intrauterine device (IUD)

If vaginal suppositories and pessaries have failed and the semen has become lodged, another Persian physician, Bahā'al-Dawlah Razi, recommended inserting into the cervix

paper wound tightly into the shape of a probe, tied with a string and smeared with ginger water. One end of the probe should be tied to the thigh so it may not penetrate too deeply. It is to be left there all night. The woman is advised not to use force, hurry, or repeat the operation (Bahā'al-Dawlah Razi, 2003, pp. 545-546). Bahā'al-Dawlah Razi's fascinating suggestion sounds a lot like using the IUD.

4- Oils and Salves

According to PM sages, such as Rhazes and Avicenna, if the penis, particularly the glans, is anointed with tar (Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309; Rhazes, 1987, pp. 277-278; Thābit ibn Qurra, 1998, p. 201; Ibn Jazla, 2009, pp. 168, 631, 338, 668, 681, 823, 338; Baghdadi, 1943, Vol. 2, pp. 84, 134, 170, 172; Vol. 4, p. 60; Avicenna, 2005, Vol. 1, p. 432; Vol. 2, pp. 31,111-112; Vol. 3, p. 462; Hakim Momin, 2001, Vol. 1, pp. 97, 102, 668, 689; Vol. 2, p. 497) or commiphora oil before coitus, conception is prevented (Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309). One can add slippery things like sesame oil to the sperm so that it is dissipated (Avicenna, 2005, Vol. 1, p. 432; Vol. 2, pp. 31,111-112; Vol. 3, p. 462; Hakim Arzani, 2008, p. 957). For doing this, Rhazes also advises the woman to anoint the womb with Commiphora oil (Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309). Along these lines, one could put the water of rue on the penis before coitus (Hakim Arzani, 2008, p. 957). Putting the penis in the pure juice of the onion is also suggested by Rhazes (Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309).

In modern medicine, male contraceptives play a crucial role. These are chemical products that either inhibit sperm production and motility in males, or immobilize, cause mortality, and distort sperm physiology when applied topically to the vagina, preventing the ovum from fertilizing (Love, 2011, pp. 547-57; Hubacher, and Trussell, 2015, pp. 420-421; Hifnawy, et al., 2021, pp. 797-843). Recent developments in male contraceptives have been centered around targeting a specific component of sperm, termed an antispam or epididymal target. This approach aims to impede spermiogenesis, the process of sperm development, and achieve contraception after the sperm has been produced. The majority of the auspicious concepts in this domain pertain to contraceptive vaccinations. These substances consist of proteins that can attach to sperm cells and inhibit their reproductive capabilities. They achieve this without altering the hormonal levels in the bloodstream, inhibiting sperm production, or modifying the physical appearance of the male reproductive system (Fan, et al., 2018, pp. e3121; Naz, 2011, pp. 5-12; Wang, et al., 2023, pp. 1-31; Hifnawy, et al., 2021, pp. 797-843). In this case, research showed that some herbal remedies, like Vinca rosea, Carica papaya, Ecballium ellaterum, Tripterygium, Solanum Xanthocarpum, Azadirachta indica, and Abrus Precatorius, could work as male contraceptives in various modality, including antispermatogenic and antiandrogenic, degeneration of germinal epithelium and germ cells, drop in sperm motility, reduction in sperm concentration, decrease the pH of semen, stop sperm from entering the uterus, etc. (Lampiao, 2011, pp. 28-32).

5- Herbal and Animal Fumigation

Fumigating the vagina by elephant dung at the times mentioned previously (Baghdadi, 1943, Vol. 2, pp. 84, 134, 170, 172; Vol. 4, p. 60) and so fumigation of Hedera between

menstrual periods was also recommended (Ibn Jazla, 2009, pp. 168, 631, 338, 668, 681, 823, 338; Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309; Baghdadi, 1943, Vol. 2, pp. 84, 134, 170, 172; Vol. 4, p. 60; Ibn al-Nafis al-Qarashī, 2008, Vol. 14, p. 309; Vol. 22, pp. 126, 213; Vol. 23, p. 377; Vol. 29, p. 87; Avicenna, 2005, Vol. 1, p. 432; Vol. 2, pp. 31,111-112; Vol. 3, p. 462). Modern medicine appears to overlook fumigating as a contraceptive method. Therefore, further studies on administering fumigation for contraception and fertility control can open a new window on this issue.

6- Oral Medications

In addition to various barrier methods, the Iranians used concoctions taken orally. The first section was on menstrual "movers" from the theoretical and humoral view to provoke menstruation (Bahā'al-Dawlah Razi, 2003, pp. 545-546). Alkekengi after the menstruation period and by its property as a contraceptive is especially suitable (Hakim Aghili, 1844, pp. 126, 276, 473, 492, 866). However, importantly, under this rubric, scholars have identified and emphasized several specific medications, including rue, raw onion (Rhazes, 1991, p. 440), dianthus barbatus (Ibn al-Nafis al-Qarashī, 2008, Vol. 14, p. 309; Vol. 22, pp. 126, 213; Vol. 23, p. 377; Vol. 29, p. 87), and iron scoria (Hakim Momin, 2001, Vol. 1, pp. 97, 102, 668, 689; Vol. 2, p. 497; Hakim Aghili, 1844, pp. 126, 276, 473, 492, 866; Ibn Jazla, 2009, pp. 168, 631, 338, 668, 681, 823, 338; Rhazes, 2001, Vol. 9, pp. 200, 202, 204, 207, 209; Vol. 20, pp. 287-288, 309). It is also helpful to drink a small quantity of rennet, especially those taken of rabbit, after the time of the cleaning period for three days (Ibn Jazla, 2009, pp. 168, 631, 338, 668, 681, 823, 338; Jamal al-Din Aqsa Rai, 2008, p. 180; Ibn al-Nafis al-Qarashī, 2008, Vol. 14, p. 309; Vol. 22, pp. 126, 213; Vol. 23, p. 377; Vol. 29, p. 87; Hakim Momin, 2001, Vol. 1, pp. 97, 102, 668, 689; Vol. 2, p. 497).

In addition, another notable physician from the ninth century proposed at least three oral contraceptives with these ingredients: Aristolochia, Juniperus sabina, and garden cress (Thābit ibn Qurra, 1998, p. 201).

Currently, the investigation of natural herbal contraception has emerged as a prominent area of interest in contemporary contraceptive research. The utilization of medicinal plants for the production of fertility-regulating medications is appealing due to the long-standing reliance of humans on plants and their derivatives for medicinal purposes. This is because both pre-clinical and clinical studies have shown that some herbal plants, like tancy (Tanacetum vulgare L.), neem oil (Azadirachta indica), black cohosh (Actaea racemose), wild carrot seeds (Daucus carota), rue (Ruta graveolens), and others, can help prevent pregnancy. As contraceptive agents, these herbal remedies have a variety of action mechanisms, such as abortifacient, anti-implantation, anti-fertility, terminating pregnancy, decreasing sperm motility and sperm counts, etc (Mohamed, Ibrahim, and Al Haidari, 2014, pp. 124-58; Bala, Arya, and Katare, 2014. pp. 1305-26; Verma, and Yadav, 2021, pp. 1-5).

Discussion

This paper has briefly described the historical role of Iranian sages in confronting reproduction and fertility awareness-based methods. The findings demonstrate that the issue of birth control and the practice of contraception were among the topics that Persian scholars investigated and discussed in their works. Tables 1-3 show the most common operational birth control methods in important medical texts during the last millennium, which is

almost a continuation of the previous periods.

Table 1: Birth Control Methods from the 9th to the 20th CE

Historical usage	Birth Control Method		Suggested by	Mentioned Book
9th CE	Behavioral Methods	To raise immediately after coitus	Rhazes (865-925)	*Taghasim al-Elal*
		To jump violently backwards from seven to nine times forcefully or sneeze		*Taghasim al-Elal; Al-Mansūrī fi tib*
	Barrier Methods	Vaginal Suppositories and Pessaries	Rhazes (865-925)	*Al-Mansūrī fi tib; Al-Mansūrī fi tib*
		Oils and Salves	Thābit ibn Qurra (826-901)	*Kitāb al-dhakhīrah fī 'ilm al-ṭibb*
			Rhazes (865-925)	*Kitāb al-Ḥāwī fī al-ṭibb; Al-Mansūrī fi tib*
		Herbal and Animal Fumigation	Rhazes (865-925)	*Kitāb al-Ḥāwī fī al-ṭibb*
	Oral Medications		Thābit ibn Qurra (826-901)	*Kitāb al-dhakhīrah fī 'ilm al-ṭibb*
			Rhazes (865-925)	*Kitāb al-Ḥāwī fī al-ṭibb; Taghasim al-Elal*
10th CE	Behavioral Methods	To jump violently backwards from seven to nine times forcefully or sneeze	Avicenna (980-1037)	*The Canon of Medicine*
	Barrier Methods	Vaginal Suppositories and Pessaries	Avicenna (980-1037)	*The Canon of Medicine*
		Oils and Salves		
		Herbal and Animal Fumigation		
12th CE	Behavioral Methods	To jump violently backwards from seven to nine times forcefully or sneeze	Ibn Habal Baghdadi (1122-1213)	*Al-Mukhtarat fi Tib*
	Barrier Methods	Vaginal Suppositories and Pessaries	Ibn Habal Baghdadi (1122-1213)	*Al-Mukhtarat fi Tib*
			Ibn Jazla (died: 1100)	*Minhaj al-Bayan*
		Oils and Salves	Ibn Habal Baghdadi (1122-1213)	*Al-Mukhtarat fi Tib*
			Ibn Jazla (died: 1100)	*Minhaj al-Bayan*
		Herbal and Animal Fumigation	Ibn Habal Baghdadi (1122-1213)	*Al-Mukhtarat fi Tib*
			Ibn Jazla (died: 1100)	*Minhaj al-Bayan*
	Oral Medications		Ibn Jazla (died: 1100)	*Minhaj al-Bayan*
13th CE	Barrier Methods	Vaginal Suppositories and Pessaries	Ibn al-Nafis al-Qarashī (died: 1288)	*Al-Shamil fi al-Tibb*
		Herbal and Animal Fumigation		
	Oral Medications			

14th CE	Oral Medications		Jamal al-Din Aqsa Rai (died: 1379)	*Sharh-I Mujiz*
15th CE	Behavioral Methods	To jump violently backwards from seven to nine times forcefully or sneeze	Bahā'al-Dawlah Razi (1462-1520)	*Kholaseh Al-Tajarob*
	Withdrawal	Coitus interruptus	Bahā'al-Dawlah Razi (1462-1520)	*Kholaseh Al-Tajarob*
		Coitus reservatus		
	Barrier Methods	Vaginal Suppositories and Pessaries	Bahā'al-Dawlah Razi (1462-1520)	*Kholaseh Al-Tajarob*
		The IUD (Intrauterine Device)		
	Oral Medications		Bahā'al-Dawlah Razi (1462-1520)	*Kholaseh Al-Tajarob*
16th CE	Barrier Methods	Vaginal Suppositories and Pessaries	Muhammad bin Yusuf Heravi (alive: 1531)	*Bahr al-Jawahar*
17th CE	Barrier Methods	Vaginal Suppositories and Pessaries	Hakim Momin (1666-1693)	*Tohfa al-Mominin*
		Oils and Salves		
	Oral Medications		Hakim Momin (1666-1693)	*Tohfa al-Mominin*
18th CE	Behavioral Methods	To jump violently backwards from seven to nine times forcefully or sneeze	Hakim Arzani (died: 1721)	*Tibb -e- Akbari*
	Barrier Methods	The Condom	Hakim Arzani (died: 1721)	*Tibb -e- Akbari*
		Vaginal Suppositories and Pessaries	Hakim Arzani (died: 1721)	*Tibb -e- Akbari*
			Hakim Aghili (alive: 1771)	*Makhzan al-Adviyeh; Qarābādīn-i Kabīr*
		Oils and Salves	Hakim Arzani (died: 1721)	*Tibb -e- Akbari*
	Oral Medications		Hakim Aghili (alive: 1771)	*Makhzan al-Adviyeh*
20th CE	Behavioral Methods	To jump violently backwards from seven to nine times forcefully or sneeze	Hakim Nazim Jahan (died: 1902)	*Exir-e Azam*
		To raise immediately after coitus		

Table 2: Birth Control Method Arranged by Physicians

Physician (chronologically)	**Suggested Birth Control Method**	
Thābit ibn Qurra (826-901)	Barrier Methods	Oils and Salves
	Oral Medications	
Rhazes (865-925)	Behavioral Methods	
	Barrier Methods	Vaginal Suppositories and Pessaries
		Oils and Salves
		Herbal and Animal Fumigation
	Oral Medications	

Avicenna (980-1037)	Behavioral Methods	
	Barrier Methods	Vaginal Suppositories and Pessaries
		Oils and Salves
		Herbal and Animal Fumigation
Ibn Jazla (died: 1100)	Barrier Methods	Vaginal Suppositories and Pessaries
		Oils and Salves
		Herbal and Animal Fumigation
	Oral Medications	
Ibn Habal Baghdadi (1122-1213)	Behavioral Methods	
	Barrier Methods	Vaginal Suppositories and Pessaries
		Oils and Salves
		Herbal and Animal Fumigation
Ibn al-Nafis al-Qarashī (died: 1288)	Barrier Methods	Vaginal Suppositories and Pessaries
		Herbal and Animal Fumigation
	Oral Medications	
Jamal al-Din Aqsa Rai (died: 1379)	Oral Medications	
Bahā'al-Dawlah Razi (1462-1520)	Behavioral Methods	
	Withdrawal	
	Barrier Methods	Vaginal Suppositories and Pessaries
		The IUD (Intrauterine Device)
	Oral Medications	
Muhammad bin Yusuf Heravi (alive: 1531)	Barrier Methods	Vaginal Suppositories and Pessaries
Hakim Momin (1666-1693)	Barrier Methods	Vaginal Suppositories and Pessaries
		Oils and Salves
	Oral Medications	
Hakim Arzani (died: 1721)	Behavioral Methods	
	Barrier Methods	The Condom
		Vaginal Suppositories and Pessaries
		Oils and Salves
Hakim Aghili (alive: 1771)	Barrier Methods	Vaginal Suppositories and Pessaries
	Oral Medications	
Hakim Nazim Jahan (died: 1902)	Behavioral Methods	

Table 3: Birth Control Method Arranged Chronologically

Century	Method	
9th CE	Barrier Methods	Oils and Salves
		Vaginal Suppositories and Pessaries
		Herbal and Animal Fumigation
	Behavioral Methods	
	Oral Medications	

10th CE	Barrier Methods	Vaginal Suppositories and Pessaries
		Oils and Salves
		Herbal and Animal Fumigation
	Behavioral Methods	
12th CE	Barrier Methods	Vaginal Suppositories and Pessaries
		Oils and Salves
		Herbal and Animal Fumigation
	Oral Medications	
13th CE	Barrier Methods	Vaginal Suppositories and Pessaries
		Herbal and Animal Fumigation
	Behavioral Methods	
	Oral Medications	
14th CE	Oral Medications	
15th CE	Barrier Methods	Vaginal Suppositories and Pessaries
		The IUD (Intrauterine Device)
	Behavioral Methods	
	Oral Medications	
	Withdrawal	
16th CE	Barrier Methods	Vaginal Suppositories and Pessaries
17th CE	Barrier Methods	Vaginal Suppositories and Pessaries
		Oils and Salves
	Oral Medications	
18th CE	Barrier Methods	The Condom
		Oils and Salves
		Vaginal Suppositories and Pessaries
	Behavioral Methods	
	Oral Medications	
20th CE	Behavioral Methods	

Conclusion

For thousands of years in the history of medicine of Iran and the Muslim world, various birth control methods were used by our ancestors to prevent unintended pregnancy. Iranian sages' approach to birth control was detailed and combined with practical recipes and based on the balance of humors, with a drying action usually being called for to prevent conception or a continuation of pregnancy. The sages' accounts are the catalogs of contraceptives, the substance found in their medical sources, wherein they can play important roles in family planning today. In the future, it will be beneficial to devise novel ways to potentially utilize promising goods, leveraging project management knowledge to create new formulations that enhance therapeutic and economic value. Furthermore, researchers proposed evaluating and concluding the study of certain natural substances that could serve as contraceptives for both males and females.

Authors' Contribution

Farzaneh Zare designed the model; Farzaneh Zare, Mohammad Mahdi Parvizi, and

Nikou Sardarpour collected the data and wrote the paper. All authors read and approved the final version of the work.

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Conflict of Interest
None.

References

Acarturk, F., 2009. Mucoadhesive vaginal drug delivery systems. *Recent patents on drug delivery & formulation*, 3 (3), pp. 193-205.

Altshuler, A.L., and Blumenthal, P.D., 2020. *Behavioral methods of contraception*. The Handbook of Contraception: Evidence Based Practice Recommendations and Rationales, Springer.

Anderson, D.J., and Johnston, D.S., 2023. A brief history and future prospects of contraception. *Science*, 14, 380 (6641), pp. 154-8

Avicenna, 2005. *The Canon of Medicine*. Vols. 1-3. Beirut: Dar Al Ehya Al Toras Al-Arabiya.

Baghdadi, A., 1943. *Al-Mukhtarat fi Tib*. Vols. 2 and 4. Hyderabad: Ottoman Encyclopedia.

Bahā'al-Dawlah Razi, 2003. *Kholaseh Al-Tajarob*. Tehran: Iran University of Medical Sciences.

Bala, K., Arya, M., and Katare, D.P., 2014. Herbal contraceptive: an overview. *World J Pharm Pharm Sci*, 3 (8), pp. 1305-26.

Bullough, V.L., 2001. *Encyclopedia of Birth Control.* Illustrated edition. Santa Barbara: ABC-CLIO.

Collier, A., 2007. *The Humble Little Condom-A History*. Illustrated edition. New York: Prometheus Books.

Das Neves, J., et al., 2015. Polymer-based nanocarriers for vaginal drug delivery. *Advanced drug delivery reviews*, 92, PP. 53-70.

Fan, S., et al., 2018. ZNF 185-derived peptide induces fertility suppression in mice. *Journal of Peptide Science*, 24 (10), pp. e3121.

Hakim Aghili, 1844. *Makhzan al-Adviyeh*. Kolkata: n.p.

Hakim Aghili, 2008. *Qarābādīn-i Kabīr*. Vols. 1 and 2. Tehran: Iran University of Medical Sciences, Institute of Medical History Studies, Islamic and Complementary Medicine.

Hakim Arzani, 2008. *Tibb-e-Akbari*. Vol. 2. Qom: Jalaledin.

Hakim Momin, 2011. *Tohfa al-Mominin*. Vols. 1 and 2. Qom: Nor-e vahie.

Hakim Nazim Jahan, 2008. *Exir-e Azam*. Vol. 3. Tehran: Iran University of Medical Sciences-Institute of Medical History, Islamic Medicine and Complementary.

Hifnawy, M.S., et al., 2021. Nature-inspired male contraceptive and spermicidal products. *Phytochemistry Reviews*, 20, pp. 797-843.

Hubacher, D., and Trussell, J., 2015. A definition of modern contraceptive methods. *Contraception*, 92 (5), pp. 420-421.

Ibn al-Nafis al-Qarashī, 2008. *Al-Shamil fi al-Tibb*. Vols. 14, 22-23, 29. Tehran: Iran University of Medical Sciences.

Ibn Jazla, 2009. *Minhaj al-Bayan*. Cairo: Jamaat al-Daw al-Arabiya.

Jalalvandi, E, et al., 2021. Vaginal administration of contraceptives. *Scientia Pharmaceutica*, 89

(1), p. 3

Jamal al-Din Aqsa Rai, 2008. *Sharh-I Mujiz*. Vol. 1. Tehran: Iran University of Medical Sciences.

Lampiao, F., 2011. Complementary and alternative medicines: The herbal male contraceptives. *African Journal of Traditional, Complementary and Alternative Medicines*, 8(5S), pp. 28-32.

Leyva-Gómez, G.J., et al., 2018. Approaches in Polymeric Nanoparticles for Vaginal Drug Delivery: A Review of the State of the Art. *International journal of molecular sciences*, 19, p. 1549.

Love, C.C., 2011. Relationship between sperm motility, morphology and the fertility of stallions. *Theriogenology*, 76 (3), pp. 547-57.

Mohamed, G.A., Ibrahim, S.R., and Al Haidari, R.A., 2014. A review on natural contraceptive agents. *Am J PharmTech Res*, 4 (3), pp. 124-58.

Muhammad bin Yusuf Heravi, 2008. *Bahr al-Jawahar*. Qom: Jalal al-Din.

Naz, R.K., 2011. Antisperm contraceptive vaccines: where we are and where we are going? *American Journal of Reproductive Immunology*, 66 (1), pp. 5-12.

Nekoolaltak, M., Tansaz, M., and Bioos, S., 2012. Comparison between Contraceptive Methods in Persian Traditional Medicine and Modern Medicine. *Tārīkh-I Pizishkī*, 3(9), pp. 55-77.

Nguyen, N. et al., 2020. Correlates of use of withdrawal for contraception among women in Vietnam. *BMC Women's Health*, 20, pp. 1-7.

Rhazes, 1987. *Al-Mansūrī fi Tib*. Edited by Hazim Bekri Siddii. Kuwait: Arab League Educational, Cultural and Scientific Organization.

Rhazes, 1991. *Taghasim al-Elal. Edited by Mahmoud Hamami Sobhi*. Aleppo: Higher Institute for the History of Arabic Science.

Rhazes, 2001. *Kitāb al-Ḥāwī fī al-ṭibb*. Vols. 9 and 20. Beirut: Dar Al Ehya Al Toras Al-Arabiya.

Riddle, J.M., 1994. *Contraception and Abortion from the Ancient World to the Renaissance*. London: Harvard University Press.

Sabourian, R., et al., 2016. Medicinal plants used in Iranian traditional medicine (ITM) as contraceptive agents. *Current pharmaceutical biotechnology*, 17(11), pp. 974-985.

Sharma, P.K., Bansal, S., and Banik, A., 2011. Noninvasive routes of proteins and peptides drug delivery. *Indian J Pharm Sci*, 73, pp. 367–375.

Simmons, R.G., and Jennings, V., 2020. Fertility awareness-based methods of family planning. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 66, pp. 68-82.

Smith, L., 2011. The Kahun gynaecological papyrus: ancient Egyptian medicine. *BMJ Sexual & Reproductive Health*, 37(1), p. 54.

Srikrishna, S., and Cardozo, L., 2013. The vagina as a route for drug delivery: A review. *International urogynecology journal*, 24, pp. 537–543.

Suitters, B., 1968. Contraception in ancient and modern society. *R.S.H.*, 81(1), pp. 9-11.

Thābit ibn Qurra, 1998. *Kitāb al-dhakhīrah fī 'ilm al-ṭibb*. Beirut: Dar Al-Alamiah.

Trussell, J., and Aiken, A.R.A., 2018. *Contraceptive efficacy*. In: Hatcher R.A., Nelson A.L., Trussell J., Cwiak C., Cason P., Policar M.S., et al., editors. *Contraceptive technology*. 21st ed. New York: Ayer Company Publishers, Inc.

Verma, S., and Yadav, A., 2021. Rising trends towards the development of oral herbal male contraceptive: An insight review. *Future Journal of Pharmaceutical Sciences*, 7, pp. 1-5.

Wang, C., et al., 2023. Practice and development of male contraception: European Academy of Andrology and American Society of Andrology guidelines. *Andrology*, 20, pp. 1-31.

Wong, T.W., Dhanawat, M., and Rathbone, M.J., 2014. Vaginal drug delivery: strategies and

concerns in polymeric nanoparticle development. *Expert Opinion on Drug Delivery*, 11 (9), pp. 1419-34.

Yarmohammadi, H., et al., 2013. Al-Akhawayni, a contributor to medieval Persian knowledge on contraception. *The European Journal of Contraception & Reproductive Health Care*, 18(6), pp. 435-440.

Zhang, Y., et al., 2024. Reproductive Planning: Contraceptive Counseling and Nonhormonal Methods. *FP essentials*, 538, pp. 7-12.