



Review Article

AN INSIGHT INTO AYURVEDIC ASPECTS OF MALE REPRODUCTIVE HEALTH WITH SPECIAL REFERENCE TO PRECONCEPTION CARE: A NARRATIVE REVIEW

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Article info

Article History:

Received: 19-07-2021  
Revised : 01-08-2021  
Accepted: 19-08-2021  
Published:18-09-2021

KEYWORDS:

Ayurveda, Male reproductive health, Preconception care.

ABSTRACT

Reproductive health is a universal concern, a central determinant of quality of life. Male reproductive health disorders can evolve at any phase of life, but accountability of males in maintenance of reproductive and sexual health is seemingly low. Preconception care for men discloses a reproductive health plan, health assessment, health promotion, clinical and psychosocial interventions to improve the adolescent and men in reproductive age groups. In Ayurveda the necessity of sound reproductive health for successful conception is explained under *Dinacharya* (daily regimen), *Ritucharya* (seasonal regimen), *Sadvritta* (code of conduct for keeping good and balanced condition of body and mind), *Panchakarma* (purificatory therapies), *Rasayana* (rejuvenation therapy) and *Vajikarana* (aphrodisiac therapy).

**Aim:** This review is intended with an attempt to detail the Ayurvedic aspects of male reproductive health with special reference to preconception care.

**Material and Methods:** The present review is focusing on Ayurveda classical texts, *Ashtanga sangraha*, *Ashtanga hrudya*, *Sushruta samhitha*, *Charaka samhitha*, *Bhavaprakasha*, *Sarangadhara samhitha*, scientific scholarly articles, online databases Pub Med and Google scholar and modern contemporary texts.

**Conclusion:** Research studies paved less limelight to address the need for preserving the male reproductive health right from an early phase of life. It is the privilege to avail the possibilities from both Ayurvedic and contemporary science to upgrade reproductive health, which in turn enhances positive eugenics.

INTRODUCTION

Ayurveda takes a holistic approach in maintenance of reproductive and sexual health, by ensuring the ways of *Swasthavrutha* (the branch of Ayurveda, mainly dealing with disease preventions, health promotions and health maintenance) and *Sadvritta* (which emphasize more on balanced diet and conducive lifestyle).

Ayurveda imparts due importance for both male and female reproductive health. A man with children has been praised in Ayurveda and one without is considered as a tree just with one branch, devoid of fruits and flower with foul smell.<sup>[1]</sup> It is also considered as a means for attainment of *Purusharthas* (goals of a human life, *Dharma* (righteousness, moral values), *Artha* (prosperity, economic values), *Kama* (pleasure, love, psychological values) and *Moksha* (liberation, spiritual values).<sup>[2]</sup> So, begetting a child is not only a choice as per Ayurveda, but an act which enhances *Yasha* (success in life), *Dharma* (righteousness), *Maana* (self-respect), *Srikulavardhana* (prosperity and lineage), ultimately aiming a *Supraja* (healthy progeny) advocating the principles of eugenics.<sup>[3]</sup> *Shukra Dhatu* (semen/sperm) present in the body right from the intrauterine life, which is the

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Quick Response Code



<https://doi.org/10.47070/ijapr.v9i8.1948>

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*Snehamsha* (unctuous portion) of *Majja Dhatu* (bone marrow) plays a vital role in male reproductive and sexual physiology.<sup>[4]</sup>

The concept of *Garbhadhana vidhi* (preconception care) is explained in Ayurveda classical texts along with *Dinacharya* (daily regimen), *Ritucharya* (seasonal regimen), *Sadvritta*, *Panchakarma* (purification therapy), *Rasayana* (rejuvenation therapies), and *Vajikarana* (one of eight major specialty of Ayurveda, concerned with aphrodisiacs, virility and improving health of progeny). All these measures have been advised for both male and female individuals contemplating their psychological status, as sexual health focuses on *Ananda* (psychological pleasure) and *Visarga* (ejaculation) also.<sup>[5]</sup> But in the due course of time, preconception care and all other *Charyas* (regimen), serving the maintenance of reproductive health give prominence to females only.

Patriarchal paradox which prevailed in society also adds on to the disinclination towards male reproductive and sexual health.<sup>[6]</sup> Male factor as a cause for infertility globally contributes about 40-50%.<sup>[7]</sup> Currently, this global crisis in the form of male infertility has created a necessity to preserve the male reproductive and sexual health through all possible ways.<sup>[8]</sup> It is the need of the hour to encounter the male reproductive issues right from the intrauterine life and needs to be perpetuated throughout the life especially during adolescent and reproductive period.

## MATERIAL AND METHODS

The online database, Pub Med and Google scholar web search were searched for citations for keywords, "Ayurveda", "Male Reproductive Health" and "Preconception Care". The search yielded a total of 1241 references, after application of filters and removing duplicates 35 studies were selected for the final review. The present review is focusing on Ayurveda classical texts, *Ashtanga sangraha*, *Ashtanga hrudya*, *Sushruta samhitha*, *Charaka samhitha*, *Bhavaprakasha*, *Sarangadhara samhitha*, scientific scholarly articles and modern contemporary texts.

### Male Reproductive Health

Reproductive health as per WHO (World Health Organization) is a universal concern, fundamental component of an individual's overall health status and a central determinant of quality of life. It is one among the major determinant in controlling country's economic strategy through maternal and neonatal mortality rate.<sup>[8]</sup> In developing countries accountability of males in maintenance of reproductive and sexual health is seemingly low.<sup>[8]</sup> Recent scientific studies show that paternal health also plays an important role in the development of healthy progeny.<sup>[9]</sup> In developing countries, a noted trend seen so far was that health care providers and researchers

in the field of reproductive health have focused almost exclusively on women when planning health care programs and services.<sup>[8]</sup> Negligence in the field of adolescent male reproductive health from authorities along with reluctance of men to seek healthcare advice and treatment and, in general unhealthy lifestyle factors has contributed to a global crisis in male reproductive health.<sup>[8]</sup> This crisis is clinically manifested as psychological, hormonal, or physical disorders ultimately leading to male infertility.<sup>[8]</sup> Thus, in the current era male preconception care is also fetching a paradigm in male reproductive health care emphasizing on childhood, adolescent and adulthood reproductive health.

Reproductive health is the basic human right which refers a state of complete physical, social and mental well-being and not merely the absence of disease and infirmity in all matters relating to the reproductive system and to its functions and processes.<sup>[10]</sup> As male infertility is considered as one among the important global crises in the field of male reproductive and sexual health.<sup>[8]</sup> In pursuing health care men generally falls second to women.<sup>[11]</sup> Male involvement in health care is significantly determined by the presence or absence of illness or injury, social norms and feelings of vulnerability to one's masculinity.<sup>[8]</sup> Even though the male reproductive system is explained in detailed, pathogenesis behind various male reproductive and sexual health is still unresolved by research studies.<sup>[12]</sup> The men's reproductive health life course reminds us that there are multiple times and places to intervene to improve men's health and paternal generativity.<sup>[13]</sup>

### Male Reproductive Health: Current Scenario

Variations in male reproductive health are a sum of the manifestations and encounters right from fetal life, childhood, adolescence and adulthood.<sup>[14]</sup> The important etiological factors that affect male reproductive health during adulthood include the cigarette smoking, excessive alcohol consumption, psychological stress, testicular heat stress, intense cycling training, lack of sleep, advanced paternal age, sedentary lifestyle, tight clothing, exposure to radiations, pesticides, cytotoxic drugs and environmental pollution.<sup>[15]</sup> All this etiological factor has the potency to create malefic effect on the sperm qualitatively and quantitatively, eventually hampering the ability of procreation.<sup>[15]</sup> The 'Principle of Procreative Beneficence' advocates to have a baby with desired properties by preconception care, pre-implantation and prenatal selection.<sup>[16]</sup> The current updates in male preconception care addresses not only the issues related to procreation but also the overall health of an individual.

## Male Preconception Care

CDC's (Centers for Disease Control and Prevention) first preconception care recommendation is for each "woman, man, and couple" to develop a reproductive life plan, to pay attention on women's and men's reproductive health prior to conception.<sup>[17]</sup> The motive behind male preconception is to address the following attributes,

- a) Ensuring planned and wanted pregnancies.<sup>[17]</sup>
- b) Enhancing men's biological and genetic contribution for healthier conception and outcome.<sup>[17]</sup>
- c) Supporting reproductive health biology of woman.<sup>[17]</sup>
- d) Enhancing men's capacity for better parenthood and fatherhood.<sup>[17]</sup>
- e) Enhancing health of men through access to primary health.<sup>[17]</sup>

Male reproductive health research studies states that men also suffer from postpartum depression, as fatherhood period has been preconceived as a set of consecutive psychological transitions in men's mental perspectives.<sup>[18]</sup> This, in turn, could have a negative impact on the psychological health of the partner also, all this issue is considered under preconception care.<sup>[19]</sup> Male preconception care helps to develop a procreative consciousness and the attributes pertaining to fertility, emotional response and being able to visualize their fatherhood responsibilities, prior to conception.<sup>[20]</sup> Few available studies on the male preconception also call attention to quality of sperm, male subfertility, lifestyle and epigenetic environmental factors affecting fertility.<sup>[21]</sup> It also enfold a better male reproductive health plan, clinical and psychosocial aid to enhance adolescent and young men's overall health.<sup>[22]</sup> Moreover, it helps in making men aware of the environmental threat to reproductive potential, as the paternal germ line causes spontaneous genetic mutations in turn predisposed by advanced age lifestyle and environmental factors.<sup>[23]</sup> Thereby encouraging men in the direction of healthy lifestyle not only to improve reproductive health but also psychological and general wellbeing.

Ultimately the foundation of healthy progeny through male preconception necessitates protection of paternal germ line from oxidative stress which initiates sperm DNA (Deoxyribonucleic acid) damage.<sup>[24]</sup> The central goal under preconception care is maintaining both sexual and reproductive health in all means either by modifying lifestyle including diet modifications and therapeutic intervention, if necessary, at an early phase of life before marriage.<sup>[25]</sup>

## Understanding of Male Reproductive Health in Relation with *Vrushya* and *Vajikarana*

*Vajikarana Tantra* one among the eight branches of Ayurveda dealing with the male reproductive issues and also a means for healthy individuals to have viable conception.<sup>[26]</sup> It instructs adhering to the principles of healthy living hence helps in rejuvenation and improving the sexual vigor.<sup>[27]</sup> The word *Vaji* means horse, the drugs and treatment modalities which makes a man sexually potent like a horse is termed as *Vajikarana*.<sup>[28]</sup> At times it is being misinterpreted only as aphrodisiac therapy, but it has got a wide range of application bestowing both therapeutic and rejuvenating effect.<sup>[27]</sup> It entitles strict adherence to specific *Ahara*, *Vihara* and *Aushada*, which is a form of *Rasayana* also, thereby ensuring a solution for male reproductive health attributes and also well-being and vitality of offspring in the form of preconception care.<sup>[27]</sup>

### Role of *Vrushya* in Male Reproductive Health

*Vrushya* drugs are those which are *Madhura* (sweet), *Snigdha* (unctuous), *Jivana* (promoting life), *Brimhana* (nourishing), *Guru* (heavy) and *Harshanam* (excitement of the mind) in nature.<sup>[29]</sup> It is interpreted as those substance by which a person is capable to perform sexually like *Vrusha* (bull).<sup>[30]</sup> In certain contexts, in classical texts the term *Vrushya* is also used as a synonym for *Vajikarana*.<sup>[27]</sup> In case of *Alpa Retas* (low level of semen/sperm since birth or below the age of twenty years), *Dushta Retas* (vitiating semen/sperm), *Ksheena Retas* (moderately decreased semen/sperm, especially in the middle age due to undefined etiology), *Vishushka Retas* (extremely low levels or the depletion of semen/sperm that occurs physiologically in old age, after 70 years of age) *Vajikarna* does *Apyayana* (maintaining and promoting normal production of sperm), *Prasadana* (normalizing of semen/sperm), *Upachaya* (quantitative increase in semen/sperm), *Janananimitha Karma* (production of semen/sperm) respectively.<sup>[31]</sup> It provides an impact on psychological aspects by *Praharshajana* (creating pleasure in sexual act), leading to *Shukra Vrudhi* (quantitative and qualitative increase in semen/sperm) and *Shukra Srutikara Karma* (promotes ejaculation of semen).<sup>[32]</sup>

### Role of *Vajikarana* in Male Reproductive Health

*Vajikarna* drugs are classified into *Shukrajanaka* (drugs which facilitate and increase production of semen/sperm), *Shukrapravartaka* (drugs which initiate the ejaculation of semen) and *Shukrajanaka Pravartaka* (drugs which facilitate production and ejaculation of semen).<sup>[33]</sup> Another classification includes, *Shukrala* (drugs which causes qualitative and quantitative increase in the semen/sperm), *Vajikara*, *Shukrarechaka* (drugs which help in ejaculation of semen/sperm), *Shukra-sthambaka*

(drugs which help in improving the capability of ejaculatory control during sexual intercourse) and *Shukrashoshana* (drugs which dry the semen/sperm).<sup>[34]</sup> Examples for *Shukrajanaka* drugs are *Mamsa* (meat), *Ghrita*, *Ashwagandha*, *Musali*, *Sarkara* (jaggery), *Shatavari*. *Shukrapravartaka* drugs are *Uchhata* (*Abrus precatorius*), *Brihati* (*Solanum indicum*); *Shukrajanakapravartaka* drugs are *Ghrita*, *Ksheera*, *Masha* (*Vigna mungo*), *Bhallataka Phalamajja* (seed coat *Semicarpus anacardium*).<sup>[27]</sup>

Both *Vajikarana* and *Vrushya* drugs should be administered after proper *Shodhana Karma* (purificatory therapies) or else they will fail to produce the desired benefit, just as application of dye to a piece of dirty cloth will prove non-effective.<sup>[35]</sup> *Vajikarna* is a type of *Rasayana* could be administered from 16 to 70 years, which again offers an extensive period for intervention in male reproductive and sexual health, both as preventive and therapeutic aspects.<sup>[36]</sup> This opportunity to intervene at different phases of male's reproductive life is not utilized in a sensible manner for preserving neither the procreation potential nor the sexual vigor. Male preconception care in the current era is trying to bring back this notion into clinical practice. In a way *Vajikarna Tantra* is primarily targeted on objectives like *Subahupraja* (progeny with desirable qualities), in turn providing *Tushti* (contentment), *Pushti* (nourishment), *Gunavat Apathya* (children of good qualities), *Apatya Santanakara* (continuity of progeny) and *Sadyo Sampraharshana* (great happiness immediately), where psychological impact on *Ananda* and *Visarga* is addressed.<sup>[37]</sup>

### Role of Ahara in Male Reproductive Health

Another key element in protecting male reproductive health is diet. Conducive diet is critical in sustaining the reproductive health, especially those with *Madhura Rasa*, *Snigdha*, *Guru*, *Pichila* (slimy), *Avidahi* (without burning sensation) *Gunas* (qualities) can be adopted.<sup>[38]</sup> Classical texts have advocated the use for different kinds of diet, *Ksheera* and preparations made from *Ksheera*, *Ghrita*, *Vasa* (muscle fat), *Majja*, *Vilepi* (thick gruel of rice), *Lohitasalidhanya* (red variety of *Oryza sativa*), *Sastikasali* (*Oryza sativa* harvested within sixty days), *Masha*, *Godhuma* (*Triticum aestivum*), *Amraphala* (*Mangifera indica*), *Kadali* (*Musa paradasiaca*), *Sukadhanya Varga* (group of cereals), etc.<sup>[39,40,41]</sup> It is also stated that to improve the qualities and quantity of *Shukra*, the substances having similar *Gunas* with that of *Shukra* as such can be used like *Bastanda Prayoga* (medicated preparation made from goats testicles).<sup>[42,43]</sup>

Substances which are *Katu* (pungent), *Amla* (sour), *Ushna* (hotness), *Lavana* (salt), those which causes diminution of *Soumya Dhatus* (tissue predominant with water element) like *Shukra* in the

body should be avoided.<sup>[44]</sup> Research studies shows that following healthy dietary pattern improves sperm quality and lowers subfertility issues in parameters as sperm quantity, motility, vitality and defects in sperm DNA.<sup>[45]</sup>

## RESULTS

### Male Reproductive Health in Ayurveda

Ayurveda details about the reproductive health aspects in preventive ways by pursuing *Dinacharya*, *Ritucharya*, *Sadvritta* and curative manner by, *Panchakarma*, *Rasayana* and *Vajikarana*.<sup>[46]</sup> All these are considered as a means to attain *Supraja*, ultimately helping one to achieve *Prusharthas*.<sup>[47]</sup> Adhering to *Dinacharya* enables one to improve not only the general health but also specifically the reproductive and sexual health. *Brahma Muhurta Uthana* (waking up forty-eight minutes of the auspicious period before sunrise) nourishes the *Sapthadhatu* (seven major structural components that stabilize and sustain the body), and *Shukra Dhatu* is considered as the *Sara* (essence) of *Sapthadhatus*, so this regimen right away influences the male reproductive health.<sup>[48,49]</sup>

*Abhyanga* (anointing body with oil) endows *Dhatu Pushtikartwa* (nourishment to tissues), *Balaprada* (strengthens the body), *Jarasamahara* (wards off old age and exertion) and all these *karmas* (functions) are congenial for reproductive health. *Vyayama* (exercise) yields *Agni Deepanam* (enhances digestion), *Sthairyakartawam* (stability of body) and *Bala Vardhanam* (strengthens the body).<sup>[50]</sup> The significance is that major *Nidana* (causative factor) in *Shukra Dushti* (seminal disorders) is *Agnimandya* (impaired digestion) and *Atisthoulya* (obesity) which are combated with *Vyayama*. *Vrushyakara Dinacharyas* (regimen promoting spermatogenesis and aphrodisiac in nature) also have to emphasized and followed like *Snana* (taking bath), *Pada Prakshalana* (cleaning of feet), *Gandhamalya Sevanam* (use of garlands), *Padatradharanam* (wearing of footwear) and *Samvahanam* (soft massage).<sup>[50]</sup>

Among the *Ratricharya* (night regimen) *Nidra* (sleep) is considered as *Ardharogahara* (pacifies the disease partially), have an important role in sustaining the circadian rhythm in turns regulating the higher brain centers controlling the physiology of reproductive system.<sup>[51]</sup>

While explaining the *Sadvritta*, code of conduct on sexual intercourse is also elaborated.<sup>[52]</sup> One should not be indulged with a woman without aphrodisiacs medicines, without intense desire and without erection.<sup>[52]</sup>

Considering the general health sexual intercourse performed on the basis of *Ritu* (season) is deciphered, once in 3 days in *Vasantha* (spring) and *Sarad* (autumn) *Ritu* (season), once in 15 days in *Varsha* (monsoon) and *Grishma* (summer) *Ritu*,

according to one's desire in *Hemanta* (late autumn) and *Sisira* (winter) *Ritu* after consuming *Vajikarana* and *Vrushya* (eugenics/aphrodisiacs) drugs.<sup>[53]</sup> There is description about normal coitus position for conception where women in supine position helps in maintaining *Doshas* (principal constituents of the body those are responsible for homeostasis), in balanced state leading to successful conception.<sup>[54]</sup> Following all the above code of conduct of sexual intercourse bestows man with *Varna* (good complexion), *Mantha Jara* (delayed ageing), *Bala* (strength), *Sthirou pachita Mamsa* (firm and strong musculature).<sup>[55]</sup>

*Garbhadhana vidhi* (preconception care), *Ahara Vihara* (diet and lifestyle) and *Aushadas* (medicine) specifically explained in classical texts uplift the body's natural ability to cleanse and restore reproductive and sexual health, thereby promoting development of a healthy future progeny. *Acharyas* (mentors) have expounded that both male and female partner's reproductive and sexual health play a vital role in the conception of a *Shreyasi Praja* (good progeny).

As per Ayurveda *Tridoshas* (three regulatory functional factors of the body), *Sapthadhatu* and *Trimalas* (the fundamental constituent of the human body along with *Dosha* and *Dhatu* which include the various waste products formed during various stages of digestion and metabolism.) are the essential constituents needed for the existence of life, among the *Dhatus*, *Shukra Dhatu* is considered as the essence of all the other *Dhatus* and the foremost among them.<sup>[56,57]</sup> It is pervading all over the body maintaining the physiological functions especially the *Garbhothpadana* (procreation).<sup>[58]</sup>

The qualitative and quantitative attributes of *Shukra Dhatu*, like *Sphatikabha* (crystal like), *Guru* (heavy), *Madhura Rasa* (sweet in taste), *Avisram* (without unpleasant smell), *Bahu* (abundant) and *Ghrita Makshika Tailabham* (color that of ghee, honey oil), in turn determines the reproductive and sexual health of a man.<sup>[59]</sup> It provides *Dhairyam* (courage/steadiness), *Chyavanam* (ejaculation), *Preeti* (affection), *Harsham* (helps in erection), *Prasannatha* (happiness) and *Dehabalam* (physical endurance), thus the psychological and physiological impact of *Shukra* can be appreciated.<sup>[60]</sup>

Among the *Karmas Garbhothpadana* and *Maithunagata* (sexual intercourse) incorporates *Preeti*, *Harsham*, *Chyavanam* and *Beejarthagatham* (impregnation).<sup>[61]</sup> All these *Karmas* disclose the idea that *Shukra Dhatu* in one way or other is responsible for the entire systemic functions, so preserving *Shukra* is like preserving the overall health itself. This essence has existed in the human body since birth, like how *Ghrita* (ghee) is present in milk, jaggery in sugarcane and *Taila* (oil) in sesame seed.<sup>[62]</sup> Its function will be

manifested in the due course of life from *Vaya Parinamath* (adolescent period) as fragrance is experienced only when the flower blossoms.<sup>[63]</sup>

Factors which affect the male reproductive and sexual health accounts for various *Shukra Doshas* (pathological disorders of sperm/seed), *Beeja Upa Taapa* (defects in gametes), *Apathya Ahara Vihara Sevana* (indulging in non-congenial diet and life style) and *Manasika Nidanans* (psychological causes) ultimately leading to manifestation of *Klaibya* (male sexual, psychological and reproductive dysfunctions) and impede procreation.<sup>[64]</sup> The protocol mentioned in classical texts in the management of *Klaibya* and male preconception care including preventive and curative aspects focuses in the maintenance and regaining the reproductive and sexual health, can be judiciously applied in adolescent age group also.

### Male Preconception care in Ayurveda

Preconception care in Ayurveda is explained as a set of interventions that focuses to recognize and modify biomedical, behavioral and social risks to the women's health or to fetus through prevention and treatment.<sup>[65]</sup> It highlights the psychological and physical health issues of both men and women who need care before conception that can be achieved by following the *Ahara*, *Vihara*, and *Charyas*.

Among the *Shodasha Samskaras* (sixteen rituals as eminent landmarks from womb to tomb of an individual), *Vivaha* (marriage) and *Garbhadhana* are the two important *Samskaras* (rituals) concerned with preconception care.<sup>[66]</sup> In case of *Vivaha Samskara*, appropriate age of conception and marriage is 25 and 16 years for male and female respectively, during this period all the *Dhatus*, reproductive systems are well formed and fully functional.<sup>[67]</sup> If impregnation occurs below this age, either conception may not happen or even if it happens there are chances of intrauterine death, and the child born would not survive or may have some congenital abnormalities.<sup>[68]</sup> It is advised that partners should belong to *Atulyagotra* (non-consanguineous marriage), research studies also say that consanguineous marriage carries recessive traits.<sup>[69]</sup>

*Saumanasyam* (psychological wellbeing) of both partners is indispensable before and during conception, and *Dourmanasya* (mental affliction) is considered as *Avrushya* (anaphrodisiac).<sup>[70]</sup> All these are considered as initial prerequisites in preconception care in Ayurveda.

*Ritu* (fertile period), *Kshetra* (male and female reproductive organs), *Ambu* (nourishing fluid) and *Beeja* (ovum and sperm) known as *Garbhasambhava Samaghri* (factors for conception) are essential for successful conception.<sup>[71]</sup> As quality of *Beeja* (sperm) proclaims the quality of healthy progeny, it should be preserved by following the preconception methods. In

classical texts the following interventions are depicted under *Garbhadhana Vidhi* like chanting *Mantra* (a sound, word, or phrase that is repeated by someone who is praying or meditating), *Putreshti Yajna* (offering performed for the sake of having a child), following *Panchakarma* then celibacy for one month, maintaining adequate psychological health by making oneself happy by keeping good thoughts, male should be given *Ksheera* (milk) or *Ghrita* (ghee) processed with *Madhura Rasa* (sweet taste) or *Shali* (*Oryza sativa* Linn.) processed with *Ghrita* or *Ksheera*, over eating should be avoided and advised to consume beneficial food according to *Agni* (digestive power)<sup>[72]</sup> Post coital conduct is advised before sleeping, man should drink *Payah* (milk) or *Rasa* (soup), this helps to regain the *Bala* (strength).<sup>[73]</sup>

*Vajikarana Tantra* advocates living in strict compliance to similar principles mentioned in daily regimen, seasonal regimen, code of conduct for keeping good and balanced condition of body and mind, there by thwarting the etiological factors in the form of non-conductive life style, irrational habits and exposure to environmental toxins which directly affect the spermatogenesis, qualitatively and quantitatively.<sup>[74]</sup> The presence of free radicals in the body from exposure to noxious chemicals along with defective life style is another alarming threat to variation in seminal parameters which can be confronted by appropriate *Shamana Aushadis* (palliative medications) and *Shodhana Karma* (purificatory therapies)<sup>[75]</sup> Intake of *Vrushya* and *Vajikarna* drugs *Shatavari* (*Asparagus racemose*), *Ashwagandha* (*Withania somnifera*), *Musali* (*Curculigo orchioides*), etc. are advocated for the preservation of reproductive and sexual health along with preconception care.<sup>[76]</sup>

## DISCUSSION

Ayurveda preaches an individualistic approach in both preventive and curative care in all aspects of healthcare.<sup>[77]</sup> While planning the sexual and reproductive health care various *Samskaras* should be followed considering the time place, age and health condition of the individual in the form of *Dinacharya*, *Ritucharya*, *Sadvritta*, *Panchakarma*, *Rasayana* and *Vajikarana*. So, time of intervention is an important factor which needs to followed in male reproductive health care right from the adolescent period as advocated by WHO, rather than treating the comorbidities presented along with infertility in the late phase of the reproductive period.<sup>[78]</sup> Preconception care is widely considered as a part and parcel of care for the female, but it also deals with the reproductive health for the male and children, in a way improving their quality of living by maintaining the general health.<sup>[79]</sup> This highly influences the economic growth of a country, and so preconception care is currently being practiced globally.<sup>[78]</sup>

Nowadays childbearing is considered as a sensitive choice made by the couples, and they are accountable for procreating a healthy progeny, so male partners reproductive health also should be of prime importance. Preconception care being a tool to be imbibed right from the adolescent period is an opportunity to upgrade family planning, pregnancy outcomes, improve reproductive health, health of the female partner and prepare themselves physically and mentally mature enough to be future parents, accepting motherhood and fatherhood willfully.<sup>[80]</sup>

Resorting to Ayurvedic holistic approach in preventive and curative aspects of male reproductive health helps in attaining the equilibrium of *Doshas*, *Dhatu*s and *Malas* there by the overall sound wellbeing of an individual can be achieved.<sup>[81]</sup> Equilibrium of *Dhatu*s conveys the idea of maintenance of *Shukra Dhatu*, which is the essence of all other *Dhatu*s.<sup>[82]</sup> This *Shukra dhatu* which remains dormant in the body until puberty starts functioning from the age 12 and attains complete functional potential by age 16.<sup>[83]</sup> Any deviation happening at this stage in the development of male secondary sexual characters, has to addressed, if not may lead to male reproductive and sexual dysfunction disorders ultimately ends up in infertility.

Preconception care could be beneficial by adopting measures of *Sadvritta*, *Vajikarana*, *Vrushya* and *Rasayana Chikitsa* particularly in *Bijopaghata* and *Klaibya* (impotency caused due to genetic causes or parental factors) developing in children due to *Bija Dosh*a (chromosomal disorder) of father<sup>[84]</sup> The time for the administration of these attributes is recommended from 16 to 70 years, provides the right phase of intervention in safeguarding the male reproductive health.<sup>[85]</sup> Currently delayed puberty in males is not given adequate medical concern in the counterpart with females with same presentation, in future it may end up with defective spermatogenesis, abnormalities in androgen synthesis, abnormal seminal parameters, sexual dysfunction, etc.

Research studies have revealed the action of *Rasayana* and *Vajikarna* drugs in modulating the neuro-endocrine immune system, by acting on higher centers of the brain.<sup>[86]</sup> *Vajikarana* drugs also attribute to apoptogenic and anti-stress effect, aiding in alleviating anxiety related to sexual disorders, as psychological status also plays an important role in maintaining the reproductive health.<sup>[86]</sup> Contemporary science while explaining the management of hypothalamo-pituitary-gonadal axis disorders clearly explains the limitations and side effects, advocates the role of novel therapeutic options.<sup>[87]</sup> It is indeed the privilege of every Ayurveda clinician to bring forth awareness about male adolescent reproductive health care and classical male preconception care as

accessible to the domain of male reproductive and sexual health care.

Male preconception care in Ayurveda also offers a targeted enhancement not only in male infertility issues but also in nourishing *Dhatus*, revitalizing longevity and overall health of an individual.<sup>[88]</sup> Prospective scientific studies with *Vajikarna*, *Vrushya* drugs will help to subsequently add this into the main stream therapeutic and preventive male reproductive and sexual health management.<sup>[89]</sup> As they behold the concept of *Subahupraja* in continuing the lineage for the benefit of society.<sup>[89]</sup>

## CONCLUSION

The ultimate aim of all system of medicine is the upliftment of human race, which entrusts on healthy future generation. These insights on ayurvedic male preconception care plays an important role in restoring male reproductive and sexual health right from an early phase of life, like one needs to make the hay while the sun shines. Thus, Ayurveda bestows a solution in continuing a healthy lineage, "positive eugenics" by preserving male reproductive and sexual health and opens up a wide arena of research on preconception care to explain and explore as per current scientific standards.

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**Cite this article as:**

Sujatha Atheena, Krishnarajabhath Hemavathi Shivapura, Unnikrishnan Parvathy, Muraleedharan Anjaly. An Insight into Ayurvedic Aspects of Male Reproductive Health With Special Reference to Preconception Care: A Narrative Review. International Journal of Ayurveda and Pharma Research. 2021;9(8):46-56.

<https://doi.org/10.47070/ijapr.v9i8.1948>

**Source of support: Nil, Conflict of interest: None Declared**

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