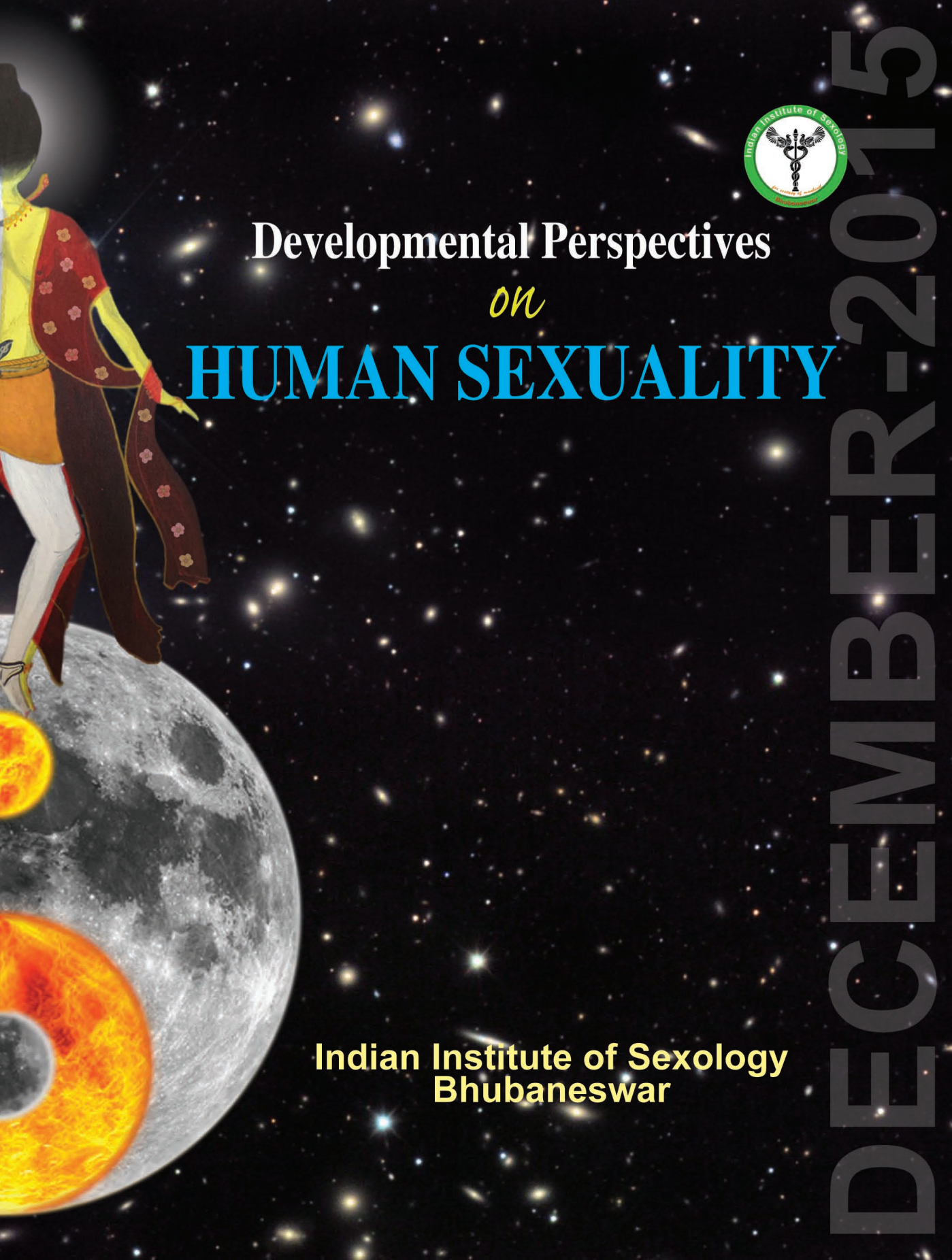

Developmental Perspectives *on* HUMAN SEXUALITY

Indian Institute of Sexology
Bhubaneswar

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Editorial

From time immemorial, human sexuality, perhaps more than anything else,has impacted the shape of human society in more ways than one. Hence, a keen understanding and critical insight into the topic assumes paramount importance both from the socio-cultural and biological dimensions. The development of sexuality is a dynamic process. Biological development of sexuality starts from the date of conception as the genetic determination of the gender is decided by it. As a matter of fact, gender is critically determined by the sex chromosome present in the sperm that fertilizes the ovum. Development of sexual organs and sexual characteristics starts in the intrauterine life and continues after birth through different stages of development. Puberty is a landmark phase in the development of sexuality, when the gender-specific sexual characters manifest themselves and, in turn, become more evident.

A lot of debate and discussion raise their heads when it comes to gender determination. While some people take pride in sitting at a particular side of the gender fence and others frantically demand equal rights, what gives our vision a legendary miss is the subtle and subliminal sexual and sexuality overlap. In other words, despite a clear sexual orientation and complete sexo-biological profile, an individual may not be 100% male or 100% female. Psychologically, every individual lives with some degree of sexual overlap. A bird's eye view of our cultural past reveals that the confluence of both the male and the female aspects is possible in the pristine abode of a single body, as manifested in 'Ardhanaariswar' – Lord Shiva's celestial inclusive incarnation. Coming back to growth of sexual behavior, during the adult life, the activity of the neuro-endocrinal physiology attains its peak. However, with increasing age, as the adult approaches the elderly end, a gradual decline in these physiological processes take place. Menopause is a great indicator of diminished biological activity.

Biological factors have strong influence over the sexual psychology of the individuals. Socio-cultural factors, exposure to virtual world and mass media also influences it. The complex interaction between the biological, socio-cultural and psychological factors ultimately decides the sexual

behavior of an individual. It is seen that the sexual behavior also evolves with time. The sexual behavior of ancient cave men is different from that of modern men of the virtual world. Expression of sexual behavior is controlled cortically (by brain), socio-culturally as well as contextually and manifested in the form of sexually colored body language. An individual experiences sexuality both physically as well as psychologically.

The development, manifestation and experience of sexuality in human beings are still in the line of evolution. Sexuality is a basic need. Its requirement is not only limited to procreation or recreation. It's horizon may extend up to reformation, but it needs regulation. Loss of regulation of sexual behavior results in crime, violence, as well as illness.

Understanding the development of sexuality cutting across ages, genders and socio-cultural backgrounds is of utmost importance, as it is impossible to address the difficult issues related to sexuality, without understanding the normal development of sexuality.

The good news is that there are researches galore on sexuality development. On a recent web search on PubMed database using "sexuality" as the keyword, the result threw over 12,000 articles, out of which 5,392 are already published in last ten years, reflecting the immense research activity in this area.

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Abstract

Human sexuality pertains to the ways through which humans experience and express themselves as sexual beings. Differences exist from culture to culture and also from time to time. These differences, in turn, have a direct bearing on how one would express himself or herself as a sexual being. This article was written based on information and analysis of data from books, journals, archives, reports and the internet. The article highlights, how different cultures have different sets of rules by means of which they legitimize some sexual practices and not others. Women enjoyed different statuses in different cultures and marriage was considered as the appropriate location for containing and controlling sexual feelings.

Introduction

The term human sexuality refers to the ways

in which humans experience and express themselves as sexual beings. It manifests itself in a variety of ways; including thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles, and relationships [1]. It involves human psyche, emotions, physical sensations, communication, creativity and ethics.

History stands testimony to the fact that sexual trends are not universal and they differ from one culture to another. For example, expression of intense sexual desires by females during Victorian times was not considered normal and required medical intervention, although in present times, it is considered as normal. These differences, in turn, tend to influence how a person would experience and express herself/himself sexually. These cultural norms are sometimes found to be so ingrained that the individual believes only her/his cultural norms as ones that are normal. Lot of changes have passed on from ancient times to the present days in the ways of getting knowledge and expressing ourselves. Peers, media, school, parents as well as religious and philosophical teachings are the main sources for understanding and guiding our sexual behaviour.

Stone age

Information about the Stone Age is mainly drawn from cave drawings, stone artefacts, and the customs of modern-day preliterate people whose existence has changed little over the millennia. The males during this time were mainly concerned with hunting, while women remained close to homes, took care of their children and gathered edible plants, nuts, etc. The Venus figurines of those times depict women with large and pendulous breasts, rounded hips, and prominent sex organs. Earlier interpretation of these figurines, which developed during the twentieth century, considered that women were actually erotic objects used by Paleolithic men [2]. Another interpretation, as introduced by Carl Reinach, considered that women were regarded as fertility symbols and were worshipped for their ability to bear children [3]. The feminist theorists, later on, opposed the male interpretations of these figurines and considered them as the Mother Goddesses of the Paleolithic and precursor to the usurper male God [3].

Geographic and cultural variations in perception of sexuality

Asian traditions

The earliest Chinese philosophy to talk about sexology is that of the concept of Yin and Yang. According to the Yin-Yang philosophy, all objects and events are the products of two elements, forces, or principles: Yin, which is negative, passive, weak, female and destructive; and Yang, which is positive, active, strong, male, and constructive [4]. Yin fu (the door of yin) means vulva, Yin dao (the passageway of yin) means vagina, and Yang ju (the organ of yang) means penis. The combination of these words into the phrases huo yin yang, he yin yang, or yin yang huo he (the union or combination of yin and yang) describes the act of sexual intercourse. It was considered that everything came from coming together of 'one Yin' (woman) and 'one Yang' (man), as a result of which many believed that this philosophy considers sexual intercourse as a vital and natural part of the human life [5].

There were two other philosophical traditions which had a considerable impact on

the Chinese culture, namely, Confucianism and Taoism. Confucianism is developed from the teachings of the great philosopher Confucius. His beliefs are considered to be sexually oppressive. Sex was only tolerated for reasons of procreation within marriage and public display of affection was considered as immoral [6]. Taoism is associated with Tao Te Ching, a philosophical and political text written by Lao Tzu. Taoist religious sects employed sexual techniques (fang zhong) to prolong their existence and attain immortality [4].

Buddhism, one of the major religions of the world, has its central beliefs based on the Buddha's four noble paths, the last of which is the eight-fold path by which enlightenment may be attained. According to Buddha, the main cause of suffering is craving. One of the three cravings is sensual craving (kama-tanha) which is the desire for enjoyment of five sense objects and hinders in attaining jnana. Traditionally, those who choose to practise Buddhism as ordained monks and nuns also choose to live in celibacy (Brahmacharya) [7].

One of the Buddhist sects, Tantrism or Mi tsung participated in bizarre sexual rituals. They believed that 'the Buddha nature' resided in the female generative organs and stressed the mystical importance of sexual union [4].

Another significant tradition, the Vedic tradition is considered to be one of the oldest traditions of the world. It contains the greatest diversity of any world tradition. The Hindu tradition is considered to have played a significant role in the history of sexuality, from writing the first literature that treated sexual intercourse as a science to being the origin of the philosophical focus of new-age groups' attitudes on sex in modern times. In India, the use of sexual education was pioneered through art and literature.

The ancient texts of the 'Vedas' reveal moral perspectives on sexuality, marriage and fertility prayers. There was a difference in sexual practices of both common people and powerful rulers. As shown by the paintings at Ajanta, nudity in art had been an acceptable practice. One of the earliest texts on human sexuality, 'Kamasutra' (Aphorisms of Love) was written by Vatsyayana between the 1st and 6th centuries [8]. It includes the three pillars of the Hindu religion; Dharma, Artha and Kama, representing religious duties, worldly welfare and sensual aspects of life, respectively. The main theme here appears to be the expression of Indian attitude towards sex as a central and natural component of Indian psyche and life [9]. During the 10th and 12th century, art works were produced, often freely depicting romantic themes and situations. The best and the most famous example of this can be seen at the Khajuraho complex in central India, built around 9th to 12th century. They tend to reflect the Hindu belief that sex was a religious duty and not a source of shame or guilt. As per the Hindu doctrine of 'Karma', sexual fulfilment was regarded as a way to become reincarnated at a higher level of existence.

Islam's attitude towards sex can be understood by studying the Quran. The Qur'an tells us that all that exists in this universe has been created in pairs as is evident from the following verse: "And of everything we have created in pairs so that you may receive instruction" [10]. Islam acknowledges sexual instinct. It is considered as natural but is legitimate only after marriage otherwise it is forbidden. Islam never conflicts with the human desires rather it tries to fulfil those desires by setting certain lawful limits and restrictions to ensure satisfaction those needs

in a right and lawful manner [11]. Sexuality is never viewed as an end but merely as a means to achieve certain biological, familial and societal objectives.

African culture

As compared to other cultures, women had relatively high status in ancient Egypt. Women could own property and pay taxes while men had an upper hand in social and public life. Marriages could take place between brother and sister, especially among royalty. Monogamy was the rule in marriage. Temples were still dedicated to the Great Mother (now incarnated in the goddesses Cybele, Ishtar, and Isis). At these temples, sexual fertility rites included same-sex and other-sex couplings. The Egyptians recognized a place for non-procreative sex and even developed some contraceptive technologies.

The Greco-Roman society

Sexuality in Greek and Roman society can best be understood through the art, literature and inscriptions of those times.

The ancient Greeks enjoyed a variety of sexual experiences. To them, 'Eros' was a primal force which gave origin to all life. The epic poem by Homer helps in understanding the concept of sexuality present during those times. Males were considered superior who took active part in any relationship. Women could not take part in politics and were required to be dutiful wives, bearers of legitimate off-springs and effective managers of households. In the age of Homer, the roles of men and women, and the place of heterosexuality in society were well delineated. Male same sex relationship was present, which is evident from the sources of late Archaic and early Classic poetry, Plato & Aeschines' oratory, and the Greek anthology [12]. Pederasty was common and occurred between an older youth or mature citizen and a pais between twelve and seventeen [13]. This was a part of educational processes of many Greek societies. Adultery by wife was considered an offence which resulted in divorce and debarment of women from public religious activity [14].

Roman attitudes and customs regarding sexuality were similar to that of the Greeks, although there were few differences. Women were expected to marry young [15]. They were to remain chaste and in a way that would not draw other's attention and bring disrespect to their husbands. Roman women were given more freedom as compared to those of Greece, they could go to social gatherings. Roman religion promoted sexuality as an aspect of prosperity for the state. Prostitution was legal. It was considered natural and unremarkable for men to be sexually attracted to teen-aged youths of both sexes.

Christianity

In the early centuries of the Christian era, sexuality was considered as part of creation and fundamental to human experience and identity. It was considered that sexuality is designed by God as a way to know God in Christ fully. The Bible says that God created both male and female [16]. Male and female were considered equal [17]. It asserts that the meaning of humanity is not in a man alone or a woman alone, rather it is in the mutual relationship between the two [18]. God created Adam and Eve with different traits, so that they can complement each other. Sexuality is considered as a gift of God. The

primary purpose of sexuality is procreation, as indicated in the words "Be fruitful and multiply" [16]. Sexuality helps in attaining social and psychological maturity.

Later Christian views on sexuality were largely influenced by Saint Paul and Saint Augustine. Saint Paul propounded celibacy. According to him not everyone could achieve celibacy and if one is not able to achieve, it was "better to marry than to burn" [19] It was taught that men should love their wives with restraint, not passion. Divorce was outlawed. Sexual lust was considered as sin by Saint Augustine that was committed by Adam and Eve and it was only through celibacy that grace could be achieved [20].

Victorian era

In English history, queen Victoria's long reign from 1834 to 1901 is known as the Victorian era. It was an era of sexual contradiction and hypocrisy. During this era, women had extremely limited rights. Compared to men, women were considered inferior and their legal statuses were at par with that of children [21]. They were even deprived of education and were mainly confined to homes as home makers. They were expected to become ideal wives and mothers. There were lot of differences between the upper class and the middle class. Girls before marriage were considered to be perfectly innocent and sexually ignorant. They were not supposed to show any sexual desires and had to fulfil those of their husband's. Male adultery was acceptable while female adultery led to divorce.

There were contradictions regarding homosexuality also. It was earlier considered a sin and was criminalised, while it flourished in the all-male English educational institutions.

Modern times

Ellis Havelock (1859-1939) is considered one of the modernists who challenged Victorian ideas about human sexuality by suggesting that sex could and should be enjoyable and that lovemaking should be pleasurable [22, 23]. He suggested that homosexuality is inborn, masturbation can be a source of mental relaxation and women also have sexual emotions. Havelock also laid the groundwork for later sexual pioneers and had been the architect of the theory of erogenous zones.

Sigmund Freud (1846-1939), the founder of the psychoanalytic movement was born on 6th of May, 1846 at Freiberg [24, 25]. His psychoanalytic concepts are long-lived. The concept of sex was emphasized to play a key role in his theory of human development.

Freud viewed sexual needs as a natural biological force. The need for love and sex unlike other instinctive needs, such as those for food and water, can be repressed by the outward forces like the society or the individual. The energy source of it, however, remains. The psychosexual theory of human development by Freud, thus, revolves around the concept of the libidinal energies, its satisfaction and the effects of its 'fixation'.

Fixation occurs when libidinal energies of a particular stage of development remain unfulfilled and are carried forward to adulthood, leading to maladaptive behaviours. Freud's psychosexual stages of development begin as the child is born and starts displaying the instinctual act of sucking its mother's breast. According to Freud, the child is then satisfying its libido through the erogenous zone, which then is its mouth. The erogenous zones of the child shift from the mouth during the oral stage to the genitals in the genital

stage. In between, the child crosses through anal, phallic and latency stages. Each stage has its own erogenous zone with libidinal energy seeking expression and conflicts to be resolved, which, if not outgrown, leave the child fixated.

Of particular interest to Freud was the 'Oedipus complex' in boys the fear of being castrated by father as a punishment for having sexual desires towards mother and 'Electra complex' in girls is the result of feeling envy for not having a penis. The conflict involves feelings of love, hatred, fear, jealousy and envy. The child evolves out of it by identifying himself/herself with the same sex parent. Inability to resolve out of this stage or in other words, fixation during this stage has been noted to be the cause of homosexuality by Freud.

Freud's concepts of sexuality was criticised on the grounds of lacking an evidence base. However, he remains a seminal figure when it comes to any aspect of research on sex and sexuality.

Clelia Duel Mosher (1863–1940) was a pioneer in the study of women's sexuality [26]. She conducted the first known sexuality survey. Her questions inquired about such intimate issues as reasons for intercourse, frequency of orgasm, whether contraception was used, and desired and actual frequency of intercourse. The results were contrary to the accepted view of Victorian women sexuality. She also told that menstrual pains present in the Victorian women were mainly due to the tight corsets which the women at that time wore to look beautiful.

Magnus Hirschfeld (1868–1935) is considered to be the founder of scientific sexology [27]. The topics studied by him were homosexuality, transvestism, love, bisexuality and sex crimes. He considered homosexuality to be inborn and not a sickness. He was committed to eradicating prejudice against homosexuals. He coined the term transvestism and said that it was different from sexuality. He edited the first journal on sexuality and opened the first 'Institute of Sexual Science' in Berlin. He also co-founded the first 'Sexological Society'.

Conclusion

To conclude, it can be said that culture plays a significant role in how individuals feel and express their sexuality. It also varies with time. All societies have different sets of rules through which they legitimize some sexual practices and not others. The status of women is also found to be different in different societies. Marriage in all cultures is seen as the appropriate mechanism for containing and controlling sexual feelings. With time, more openness and acceptance regarding sexual practice has come.

References

1. World Health Organization. Sexual and Reproductive Health: Defining Sexual Health. http://www.who.int/ [Last accessed on 20/06/2015].
2. Luquet GH. The Art and Religion of Fossil Man. Trans. Townsend Russell, Jr. Connecticut: Yale University Press, 1930.
3. Russell P. The Paleolithic Mother-Goddess: Fact or Fiction? Reader in Gender Archaeology. Ed. Kelley Hays-Gilpin and David S. Whitley. London: Routledge, 1998. 261-268.
4. Ruan FF. Sex in China: Studies in Sexology in Chinese Culture. New York: Plenum Press, 1991.

5. Ng ML, Lau MP. Sexual Attitudes in the Chinese: Archives of Sexual Behaviour. 1990; 19, 373-388.
6. Bodde D. Sex in Chinese Civilization. Proceedings of the American Philosophical Society. 1985; 129, 161-172.
7. Saddhatissa H. Buddhist Ethics: The Path to Nirvana. Wisdom Pubns; New Ed edition; December 1987.
8. Vâtsyâna. Kama Sutra. Translated by R. Burton. Reprint. New York: Dutton, 1925.
9. Burton R, Arbuthnot FF. Translated "The Kamasutra of Vatsyayana". New York: Putnam 1984; 223.
10. The Holy Qur'an 51: 40. https://www.alislam.org/quran/Holy-Quran-English.pdf [Last accessed on 20/06/2015].
11. Sulaiman KO. Islamic Position towards the HIV/AIDS prevention. National Association of the promotion of the studies in Religion, Education, Languages and General-Studies, 2006; 145-148.
12. Dover KJ. Greek Homosexuality. New York: Oxford Univ. Press, 1978.
13. Golden M. Pais, 'Child' and 'Slave'. Ant Cl. 1985; 54:91-104.
14. Law CD. Sexuality and Society: the Enforcement of Morals in Classical Athens. Cambridge; 1991.
15. Treggiari S. Roman Marriage: Iusti Coniuges from the Time of Cicero to the Time of Ulpian. xv + 578. Oxford: Clarendon Press, 1991.
16. Genesis 1:27 & 28. http://biblia.com/bible/niv/Genesis%201.27-28. [Last accessed on 20/06/2015]
17. Thielicke H. The Ethics of Sex. New York; 1964, 7.
18. Von Rad G. Old Testament Theology. New York, 1962; 1:27.
19. Brownson VJ. Bible, Gender, Sexuality: A Critical Engagement. 2014.
20. Reuther RR.Augustine: Sexuality, Gender and Women. 47–68 in J.C. Stark (Ed.), Feminist Interpretations of Augustine, University Park, PA: The Pennsylvania State University Press, 2007.
21. Fletcher R. The Family and Marriage in Britain. London. Penguin, 1966.
22. Grosskurth P. Havelock Ellis: A Biography. New York. New York University Press, 1985.
23. Robinson P. Havelock Ellis. The Modernization of Sex, New York. Cornell, 1989; 1-40.
24. Freud S. Beyond the Pleasure Principle, Group Psychology and Other Works. Vol. 18 of the Standard Edition. London. Hogarth Press, 1955.
25. Freud S. Three Essays on the Theory of Sexuality. Edited and Translated by J. Strachey. Reprint, New York. Basic Books, 1963.
26. MaHood J, Wenburg K. eds. The Mosher Survey: Sexual Attitudes of 45 Victorian Women. New York. Arno, 1980.
27. Hirschfeld WCM. A Portrait of a Pioneer in Sexology. New York. Quartet Books, 1986.

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Sex And Life: Oriental Concepts

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Abstract

Sexuality is an integral part of human life. Sexuality is something that an individual learns through several sources, but for the ancient man resources were limited. However, review of ancient literature gives an insight to the concept of sexuality of ancient man. It also makes us aware about the evolution of sexuality over centuries. This review focuses on the oriental concept on sexuality of the ancient man.

Introduction

Sex is the most fundamental instinctual desire of all creatures. So long as other creatures are concerned sex is only limited to the process of procreation but with human beings, it has also become the main source of recreation.

Human race has developed mental faculty as a result of which it has complicated the concept of sex. The great philosopher and pioneer of psychiatry Sigmund Freud claimed

"Anybody, who is abnormal, is bound to be invariably abnormal in his / her sex life". We have made sex a potential source of pleasure seeking activity, at the same time, we all know that - as much as we try to indulge in it, so much so it goes on, the desire for it goes on increasing, as desires know no limits i.e. it is insatiable.

Oriental concept on sexuality of ancient man

The ancient Indians were very thoughtful as they know that sex and survival are the most fundamental sources which motivated our continuous existence i.e. evolutionary processes through healthy intimate and close relationships with each other [1]. It may be argued that Indians pioneered the use of sex education in art and literature. 'Kama Sutra' by Vatsayan is an exemplary work considered as 'science of love' even today. The very term 'Sambhog' clarifies quiet healthy attitude explaining sex as mutual duty between a married couple where both participate equally in pleasurable activity.

Indian philosophers go deeper when they include sex as one of four purusharthas : Dharma, Artha, Kama and Moksha. They believed that without passing through the stage of Kama there is no liberation [2, 3].

The temples of Khajuraho depict another note worthy art form of sex where naked figures of copulating Mudras have been carved indicating the basic concept that inner journey starts after overcoming the peripheral worldly desire (most fundamentally the sex desire).

There are two Indian schools of philosophy i.e. 'Vedanta' & 'Tantra' depicting sexuality in a contradicting way; the former advocates abstaining from sex was desires and the later propounds indulging and then overcoming [4]. One is the way of suppression but the other is the way of expression through detachment and understanding, in which sexual energy is sublimated and transformed into a higher form. It is just the way one learn / to handle the fire. Ultimately it has to be overcome to achieve salvation. This energy is the basic binding force (Maya) i. e. attachment to the mundane world of illusion [4].

Conclusion

Conclusively, over indulgence in sex i.e. considering it as the only source of pleasure is a deviated habit pattern and is addictive in nature. One must not forget pious purpose of sexual intercourse. Enhancing the sexual capacity through artificial means is equivalent to that of giving rise to addiction or intoxication. It may be opined to draw pleasure through other healthy and sublime activities. If it pertains to spousal relationships, it is well known, that the humility, feeling, concern and sensitivity always carry more meaning than merely love making.

References

1. Beena C. Personality Typology. India. Common Wealth Publications. 1990.
2. Bernard T. Hindu Philosophy. Delhi. Motilal Banarsidas.1981.
3. Gupta S. Studies in Philosophy of Madhusudan Saraswati. Calcutta. Sanskrit Pustak Bhandar. 1966.
4. Gupta A. Mental Health and Religions. Asian Journal of Psychology and Education. 1983;11(4): 8-13.

Evolution Of Normal Human Sexuality: A Journey Through History

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Abstract

Internet, newspapers, magazines, journals, dating advice websites and blogs are rife with information on human sexuality. Some draw reasonable conclusions. Others draw some pretty drastic and ghastly ones. The implication is the same across all of them; human sexual behaviour is pre-ordained, and men or women who deviate from it are either psychologically dysfunctional or are denying their instincts for the sake of power and dominance. It's time we understood human sexuality in an integrative, evolutionary light. Given the central importance of sexuality to the evolutionary imperative, reproductive success, there is strong theoretical impetus for understanding how evolution has shaped human sexuality in the past, and how the influence of past selective forces continue to manifest in the present. Sexuality has always provoked comment and debate, curiosity, speculation and analysis, artistic and erotic interest, and it is easy

to assume that sexual lives are an unchanging universal phenomenon of human life. However, sexual cultures and customs vary substantially between countries, and over time. Developments in the late 20th century have fundamentally and perhaps permanently changed our views on human sexuality.

Introduction

Human sexuality has a broader meaning and refers to all aspects of being sexual. Although sexuality is a basic fact of human existence, the definitions and descriptions of human sexuality are varied, complex, and, at times, vague. Sexuality has been called the quality of being human, a powerful and purposeful aspect of human nature and an important dimension of humanness. Sexuality is not just overt sexual behaviour, nor is it only an anatomical assignment of gender. It is a deep, pervasive aspect of the total human personality, which is present in some degree from birth till death [1].

Sexuality plays a dominant role in human life as a creative and pleasurable force shaping human behaviour. A healthy or positively developed sense of sexuality is responsible for positive human interactions like pair-bonding, fostering intimacy, providing pleasure, bolstering self-esteem and reducing stress [1].

Human sexuality has three strong, inter-related components; biological, psychological and sociocultural [2]. Biological factors affect human sexuality from conception through infancy, childhood, adolescence to adulthood and later life. Psychological factors like development of gender and identity, emotions, thoughts, feelings, personality traits affect sexual functions and behaviours. Socio-cultural factors are responsible for regulating sex socialisation and sexual behaviours. These include social learning, sex role patterns, social class, religion, culture, ethics, family practices and social pressures. Understanding of human sexuality requires study of these factors, their interactions and interrelationships [2].

Human sexual behaviour is both complex and varied. Attempts to define 'Normal' sexual behaviour are fraught with perplexing problems. Definitions of sexual health and normalcy frequently contain value-laden terms which are susceptible to different interpretations. The problem of defining a 'Normal' sexual behaviour is made more complicated by use of many words like: prevalent, optimal functioning, statistical distribution, fashionable and, more important, socially acceptable. Irrespective of sexual behaviours being considered as 'Normal' or 'Abnormal' by societies or by individuals, there are patterns of sexual behaviour that are or have been prevalent at varying levels in all societies at all times [1]. A rigid definition of normal sexuality is difficult to draw and is clinically impractical.

Human sexuality

All animals have biologically driven sexual behaviours that emerge as they mature to adulthood [3]. In humans, sexuality is also grounded in biological functioning, emerging in each of us as we develop. However, human sexuality is expressed by cultures, through rules about sexual contact, attitudes about moral and immoral sexuality, habits of sexual behaviour, patterns of relations between the sexes, and

more. All sexually active people make decisions about when, where, and with whom they will engage in sexual activity. The sexual nature of human beings is unique in the animal kingdom. Although many of our fellow creatures also display complex sexual behaviours, only human beings have gone beyond instinctual mating rituals to create ideas, laws, customs, fantasies, and art around the sexual act. We learn about sexuality from our family of origin, friends, romantic partners, religion, culture, society, and many other sources [3].

The understanding of human sexuality would be incomplete without taking into account all the recent events that have profoundly affected the way we view sexuality. From the on-going debates about the legality of same-sex marriage and ban on pornography, to the advent of continuous birth-control pills and performance enhancing drugs, the media is full of stories that tell us much about how our culture understands, expresses, and limits our sexuality.

Evolution of human sexuality

Our ancestors began walking upright more than three million years ago. This evolution changed forever the way the human species engaged in sexual intercourse. The upright posture of the female resulted in the possibility of face-to-face intercourse. With more body area in contact, the female clitoris is much more easily stimulated. Only in human females does orgasm seem to be an important part of sexual contact [3].

It may seem that ancient civilizations were very different from ours, yet some societies had surprisingly modern attitudes about sex. Egyptians had sexual lives that do not seem all that different from the way humans engage in sex throughout the world today. Although the Egyptians condemned adultery, it may still have been fairly common, and women had the right to divorce husbands. Egyptians seem to have invented male circumcision. Egyptian workers left behind thousands of pictures, carvings, and even cartoons of erotic scenes [3].

Greek stories and myths are full of sexual exploits, incest, and rape; they clearly distinguished between love and sex. Greece was one of the few major civilizations in western history to institutionalize homosexuality successfully. Men and the male form were idealized in homo-erotic art, and man's nonsexual love for another man was seen as the ideal love, superior to the sexual love for women [3].

The ancient Hebrews took a markedly different approach to sexuality than the Egyptians, the Greeks, and the Romans. The Hebrew Bible contains explicit rules about sexual behaviour, such as adultery and homosexuality. Yet the Bible also contains tales of marital love and acknowledges the importance of sexuality in marital relationships. The legacy of the Hebrew attitude toward sexuality has been profound. The focus on marital sexuality and procreation, and the prohibition against things like homosexuality were adopted by Christianity and formed the basis of sexual attitudes in the west for centuries thereafter [4].

Perhaps no other culture has cultivated sexual pleasure as a spiritual ideal to the extent the ancient Hindus of India did. From the fifth century CE (Common Era) onward, Indian temples show sculptures of Gods, nymphs, and ordinary people in erotic poses. Hindu sexual practices were codified in a sex manual. 'Kama Sutra', which illustrates sexual positions, some of which

would challenge a contortionist [4]. It also holds recipes for alleged aphrodisiacs. This manual is believed to have been written by the Hindu sage Vatsyayana sometime between the third and fifth centuries CE, at about the time that Christianity was ascending in the west. In its graphic representations of sexual positions and practices, 'Kama Sutra' reflected the Hindu belief that sex was a religious duty, not a source of shame or guilt. Hindu deities were often portrayed as engaging in same-sex as well as male–female sexual activities. In the Hindu doctrine of 'Karma' (the passage of souls from one place to another), sexual fulfilment was regarded as one way to become reincarnated at a higher level of existence. Indian society grew more restrictive toward sexuality after about 1000 CE [4].

Islam and the Quran became a powerful force that conquered the entire Middle East and Persian lands and even swept across Asia. Many Muslim societies have strong rules of 'satr al-awra', or modesty, that involves covering the private parts of the body (for women often means the entire body). Although there are examples in the Quran of female saints and intellectuals, women in many Islamic lands today are still subjugated to men, segregated and not permitted to venture out of their homes, and forbidden from interacting with men who are not family members. In Islamic law, sexuality between a man and a woman is legal only when the couple is married [5]. Sexual intercourse in marriage is a good religious deed for the Muslim male, and the Quran likens wives to fields that men should cultivate as frequently as possible.

In the 19th century, a number of controversial social movements focusing on sexuality emerged. The free-love movement, which began in the 1820s, preached that love, not marriage, should be the pre-requisite to sexual relations. By the close of the 19th century, the medical model of sexuality began to emerge. Americans became obsessed with sexual health, and physicians and reformers began to advocate self-restraint, abstention from masturbation, and eating bland foods [3].

Beginning from the early part of the 20th century, the pioneers of sexual research to made scientific advances into the understanding of sexuality. Rejecting the religious and moral teachings about how people should behave, researchers brought sex out into the open as a subject worthy of medical, scientific, and philosophical debate. During this time, the values and attitudes about sexuality that were rooted in the Christian tradition slowly began to change as society became more permissive and started accepting of sexual freedom. Advertising and other media became more sexualized, and fashion trends changed as the flapper era ushered in. The trend towards more liberal ideas and values about sexuality continued in the late 1920s, but it wasn't until the early 1960s, the real sexual revolution took place [6].

The so-called 'Sexual Revolution' of the 1960s was made possible by the contraceptive revolution. For the first time in history, the pill and the other modern contraceptive methods gave women easier access to recreational sex without fear of pregnancy [7]. The uncoupling of sex and fertility led to an increase in marital sexual activity. It also made premarital sex more common and eventually facilitated extra-marital sex as well [8]. Possibly for the first time in history, recreational sex became far more important than reproductive sex - for people of all ages, and in all socio-

economic groups. Marriage was no longer the precondition for an active sex life. The traditional distinction between marriage markets and sexual markets (typically, commercial sexual markets) eroded and seems to be vanishing in the 21st century. Two important events helped set the stage for the 1960s sexual revolution: the discovery of antibiotics in the mid-1930s and the development of media. Television, radio, and other mass media began to broadcast more liberal ideas about sexuality to viewers and listeners. Pornography also became more acceptable. In 1953, Hugh Hefner began publishing 'Playboy' magazine [6].

Recent social changes that affect sexuality

As we enter the 21st century, our sexual expressions were influenced by certain changes that have recently occurred. Some of these changes are truly global in scale. One ongoing social change is the acceptance of premarital sexual behavior. Some see this new norm as destructive and harmful to our society, believing that it has contributed to sexual callousness, the spread of sexually transmitted infections, and unwanted pregnancies. Others see it as bringing an end to the sexual double standard, and as an adaptive response to the strong economic pressures to postpone marriage.

While different societies have diversity of attitudes, there is now greater openness regarding homosexuality and bisexuality in many cultures. In some segments of our society, there is more toleration of this form of sexual expression, while in others, very negative attitudes and behaviors still prevail. However, issues related to gay men and lesbian women are now frequently examined in the headlines, mass media, courtrooms, and classrooms of our society. Recent years have brought an increased awareness regarding coercive and violent sexual behavior. Rape, child sexual abuse, and incest were once believed to be rare events, perpetrated by deranged deviants. Today, descriptions of these acts permeate our novels, movies, and news media. Researchers study them, and therapists try to help persons who are recovering from such trauma and who are perpetuating such acts. Sex educators and policy makers attempt to prevent such acts from occurring.

The mass media has inundated our society with sexual images and sexual material. Much of it is senseless and designed to sell, titillate, or entertain. Some of it seeks to enhance our sexual lives, whereas some communicates harmful or violent norms and false notions about human sexuality. Today, sexually explicit and pornographic materials are available to anyone with an internet access. Many believe that these materials have a very negative effect on interpersonal relationships as well as on sexual attitudes and behaviors. Others celebrate the greater openness about sexual matters. Internet stimulates continuing change in sexual markets. Dating websites cater to people of all ages, all socio-economic groups -- married and un-married. Some websites specialise in particular social and/or sexual groups, making it easier for people with arcane tastes and interests to meet up. Commercial sexual services also took to the Internet, and advertise their services.

With the increase in affluence and leisure in our society, many more people can afford to pursue the more pleasure-oriented aspects of sexuality. They can buy or rent videos that demonstrate exotic sexual techniques, pay

to learn how to increase their orgasmic capacities, purchase penile implants to experience erections well into old age and so forth. More teenagers are sexually active today, and at younger ages, than their counterparts a couple of generations ago [9]. In addition to premarital sex, two other features of the sexual revolution have become permanent parts of our social fabric: the liberation of female sexuality and the greater willingness to discuss sex openly. Countless pornography websites populate the Internet and can be accessed by children. Today, however with multiple websites offering the opportunity to download videos and pictures of celebrities engaging in sexual activity, pornography has nearly reached the status of wallpaper. Most societies place a value on procreative sex within the context of an enduring relationship, usually in the form of marriage. Marriage provides security for children, maintains or increases the population, and institutionalizes the orderly transfer of property from generation to generation. Other sexual practices—masturbation, promiscuous sex, male–male sexual behaviour, female–female sexual behavior, prostitution, polygamy, and so on have been condemned in some societies, tolerated by others, and still encouraged by others.

More than thirty years after the 'Sexual Revolution' of the 1960s, the AIDS epidemic has changed the way most of us view casual sexual encounters. All of these forces have a direct or indirect impact on our personal sexual attitudes and behaviors. They influence our sexual thoughts, fantasies, and concerns as well as our sexual decision making. Ultimately, they affect our behavior.

Conclusion

Given the complexity and range of human sexual behavior, we need to consider multiple perspectives to understand sexuality. First, human sexuality appears to reflect a combination of biological, social, cultural, and psychological factors that interact in complex ways. Second, there are few universal patterns of sexual behavior, and views on what is right and what is wrong show great diversity. Third, although our own cultural values and beliefs may be deeply meaningful to us, they may not indicate what is normal and natural in terms of sexual behavior. The complexity of human sexuality, a complexity that causes it to remain somewhat baffling even to scientists, adds to the wonder and richness of our sexual experience.

References

1. Srivastava RN, Shukla GD, Verma BL. Sexual Medicine – A Handbook. Jaypee Brothers Medical Publishers (P) LTD. Ansari Road, New Delhi, India.1996.
2. Fogel CI, Lauver D. Sexual Health Promotion. W B Saunders Company. Harcourt Brace Jovanovich. Inc. Philadelphia, PA .1990.
3. Carroll JL. Discovery Series: Introduction to Human Sexuality.Wadsworth, Cengage Learning, Wadsworth, 20 Davis Drive Belmont, CA.2013.
4. Thinking About Human Sexuality. http://highered.mheducation.com/sites/dl/free/007241278x/26408/bye1278x_ch01.pdf.[Last accessed on 26/9/2015].
5. Coulson NJ. Regulation of sexual behaviour under traditional Islamic Law. In Al-Sayyid-Marsot&ALufti (Eds). Society and the sexes in the medieval Islam (pp. 63-68). Malibu, CA: Undena Publications. 1979.
6. Introducing the Dimensions of Human Sexuality. Jones and Bartlett Learning LLC @ 2014. go.jblearning.com [Last accessed on 26/09/2015].
7. Szreter S, Fisher K. Sex Before the Sexual Revolution: Intimate Life in England 1918-1963, Cambridge University Press. 2011.
8. Hakim C. The New Rules: Internet Dating, Playfairs and Erotic Power. London: Gibson Square.2012.
9. Russell ST, Ryan C, Toomey RB, Diaz RM, Sanchez J. Lesbian, gay, bisexual, and transgender adolescent school victimization: Implications for young adult health and adjustment. Journal of School Health. 2011; 81:223–230.

Developmental Anatomy Of Genital System And Congenital Anomalies

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Abstract

Sexuality involves the body, the mind, and the spirit. The expression of love between a man and a woman through physical union begets child and the lineage in passed on to the next generation. Fully grown and functional reproductive organs are necessary for greater expression of sexuality. This review describes briefly the developmental anatomy and related anomalies of reproductive organs in males and females.

Introduction

Human sexuality may be defined as the capacity of humans to have erotic experiences and responses. A person's sexual orientation can influence his/her sexual interest and attraction for another person [1]. Sexuality may be experienced and expressed in a variety of ways; including thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles, and relationships [2]. These may manifest themselves

in biological, physical, emotional, social, or spiritual aspects. The biological and physical aspects of sexuality largely concern the human reproductive functions, including the human sexual response cycle and the basic biological drive that exists in all species [3].

Opinions differ on the origins of an individual's sexual orientation and sexual behavior. Some argue that sexuality is determined by genetics; some believe it is moulded by the environment, while others argue that both these factors interact to form the individual's sexual orientation [1]. Human sexuality is driven by genetics and mental activity. The biological aspects of humans' sexuality deal with the reproductive system, the sexual response cycle, and the factors that affect these aspects. They also deal with the influence of biological factors on other aspects of sexuality, such as organic and neurological responses, [4] heredity, hormonal issues and gender issues.

The hypothalamus is the most important part of the brain for sexual functioning. This is a small area at the base of the brain which comprises of several groups of nerve cell bodies that receives input from the limbic system. Studies have shown that within lab animals, destruction of certain areas of the hypothalamus causes the elimination of sexual behavior. The pituitary gland is responsible for secreting hormones that are produced in the hypothalamus and pituitary gland itself. The four important sexual hormones are oxytocin, prolactin, follicle-stimulating hormone, and luteinizing hormone [3].

Development of the reproductive system

As a part of prenatal development, the development of the reproductive system is concerned with the stages of sexual differentiation. Embryologically and anatomically, the urinary and genital systems are intimately interwoven. Therefore, the development of them can also be described together as the development of urogenital system.

Sex differentiation is a complex process that involves many genes, including some that are autosomal. The key to sexual dimorphism is the Y chromosome, which contains the testis-determining gene called the SRY (sex-determining regression on Y) gene on its short arm (Yp11). The protein product of this gene is a transcription factor initiating a cascade of downstream genes that determine the fate of rudimentary sexual organs. The SRY protein is the testis-determining factor; under its influence, male development occurs; in its absence, female development is established [5].

The reproductive organs develop from the intermediate mesoderm. The permanent organs of the adult are preceded by a set of structures that are purely embryonic, and which, with the exception of the ducts, disappear almost entirely before the end of fetal life. These embryonic structures are the Wolffian and Mullerian ducts, otherwise known as mesonephric and paramesonephric ducts, respectively.

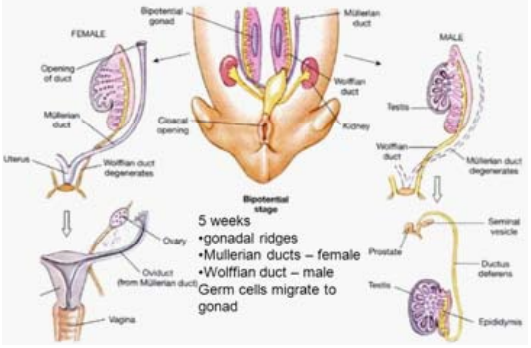

Fig. 1: Differentiation of Mullerian and Wolffian ducts in male and female
(Source : www.soc.hawaii.edu/sexdevel.htm)

Until 8 weeks' gestation, the human fetus is undifferentiated sexually and contains both male (Wolffian) and female (Müllerian) genital ducts. Wolffian structures differentiate into the vas deferens, epididymis, and seminal vesicles. Müllerian ducts develop into the fallopian tubes, uterus, and the upper one-third of the vagina (Fig. 1).

In the male fetus, the genital tubercle enlarges to form the penis; the genital folds become the shaft of the penis; and the labioscrotal folds fuse to form the scrotum. Differentiation occurs during 12-16 weeks of gestation and is the result of testicular hormones acting on the undifferentiated genitalia in two ways.

First, through testicular secretion of Antimüllerian Hormone (AMH), also known as Müllerian Inhibiting Substance (MIS), which leads to regression of the female müllerian structures. Second, through testosterone and its active metabolite, dihydrotestosterone, which determine full differentiation and stabilization of internal and external genitalia.

In the female fetus, without the influence of the AMH, the müllerian ducts complete their differentiation, whereas the wolffian structures involute. In the absence of testosterone and dihydrotestosterone, the genital tubercle develops into the clitoris, and the labioscrotal folds do not fuse, leaving labia minora and majora (Fig. 2).

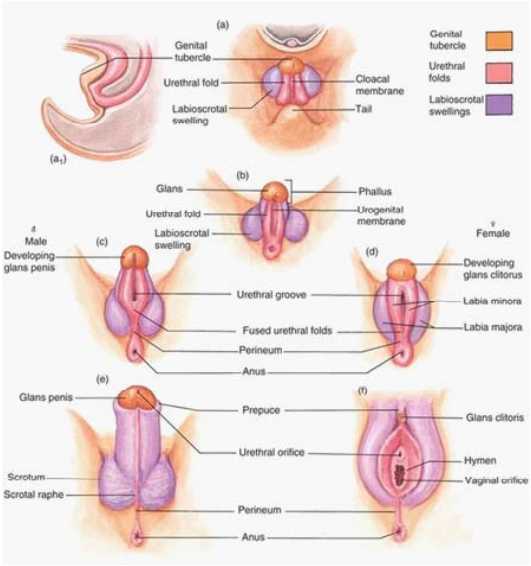

Fig. 2: Development of male and female external genitalia
(Source : www.studyblue.com/hlc3-foetaldevelopmment-embryology)

Disorders of the external genitalia are especially troubling for parents because of the emotional significance of these reproductive structures and, probably, the consequent impact of deformities on future generations.

Congenital anomalies of the genitalia

Congenital anomaly of the genitalia is a medical term referring to any physical abnormality of the male or female internal / external genitalia present at birth. This is a broad category of conditions; while some are common, others are rare.

Causes

Some congenital anomalies of the genitalia result from excessive or deficient androgen effect, others result from teratogenic effects, or are associated with anomalies of other parts of the body in a recognizable pattern . The cause of many of these

birth defects is unknown. Some simply represent the extremes of the normal range of size for body parts.

Developmental abnormalities of the female reproductive organs

An understanding of congenital anomalies as they are encountered in clinical practice has been greatly enhanced by not only the knowledge of normal embryology and the mechanism of formation of normal infants, but also an insight into the processes that result in the development of anomalies [6, 7, 8, 9] .

Uterine anomalies

The most frequent uterine anomalies (Fig. 3) are those resulting from varying degrees of failure of fusion of the müllerian ducts.

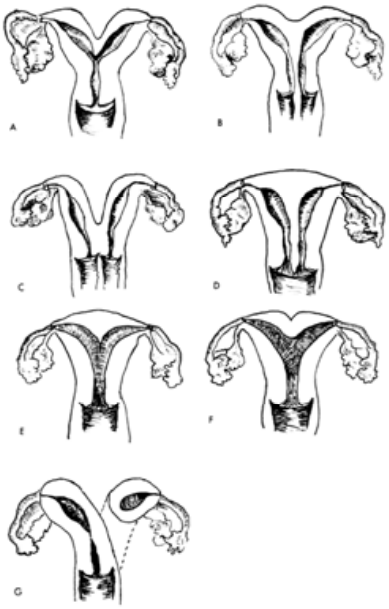

Fig. 3:Uterine anomalies **A**. Uterus duplex unicollis **B.** Uterus duplex bicollis **C.** Uterus didelphys **D.** Uterus septus with single vagina **E.** Uterus subseptus **F.** Uterus arcuatus **G.** Uterus unicornis with rudimentary contralateral hemiuterus
(Source : http://resources.ama.uk.com/glown)

Uterus duplex or the bicornuate uterus, is the most frequent uterine anomaly. The unicollis type in which there is a single cervix with a septum that does not reach the cervix is the most frequent type, occurring in over one-third of all patients with uterine anomalies. Uterus duplex bicollis, in which two cervices are present, is less frequent. Obstetric complications are frequent, but live births do occur.

Uterus didelphys, with completely separate uterine cavities, is also frequent. The cervices are externally united and the uterine fundi are externally separate. In most patients, the vagina is septate, causing a double vagina. The halves of such a uterus are often of different sizes. If there is an asymmetric vaginal septum which occludes one vagina, mucocolpos or hematocolpos may result. Communicating uteri, involving an incomplete uterine septum with part of the fetus in each uterine cavity, do occasionally occur.

Uterus septus is an essentially normal uterus with a septum reaching to the cervix. Uterus subseptus involves a partial septum that does not reach the cervix. Twins apparently occur approximately three times more often in women with this condition than in women with normal uteri.

Uterus arcuatus is a normal uterus without a septum. The fundus, however, is notched or flattened. There is usually no interference with normal pregnancy in this case.

Uterus unicornis is a uterus with a single horn. A normal vagina and a single normal tube are usually present. The other half of the uterus is usually absent or is rudimentary. In most patients the kidney is missing on the side of the missing uterus. Successful pregnancy can occur in this case.

Separate hemiuteri with separate vaginas is a rare condition that is usually associated with duplications of urethra and bladder or of the colon and anus. Pregnancy in each of the two hemiuteri in the same woman at different times has been reported.

These anomalies result from failure of fusion of the paired müllerian ducts, but in some instances there is true duplication of the ducts on one or both sides. Such duplications result from splitting of the müllerian duct during the seventh week of development. Accessory tubes or ovaries may be present.

Tubal anomalies

Absence of one or both tubes may occur and is almost always associated with absence of the uterus as well as with other anomalies. Occasionally, ostia are duplicated or an accessory tube may be present.

Ovarian anomalies

Ovarian anomalies other than the streak ovaries of gonadal dysgenesis are quite rare. Complete absence of an ovary is extremely rare and is usually associated with renal agenesis and absence of the ipsilateral fallopian tube. True ovarian duplication is rarely reported; it occurs in conjunction with duplication of genital ridge and a duplicated müllerian duct. Excess ovarian tissue near the normal ovarian tissue which develops from it (and may be connected with it) is classified as an accessory ovary. Lobulation of an ovary is not infrequent and is of little clinical importance. Supernumerary ovaries or the presence of ovarian tissue not connected to the tubes or uterus is very unusual.

In women, the most common cause of gonadal dysgenesis is Turner syndrome, 45X. Phenotypic females with streak gonads can also have XX gonadal dysgenesis, XY gonadal dysgenesis or mixed gonadal dysgenesis. In case of phenotypic females with a Y chromosome, there remains a high risk of the development of gonadoblastoma.

Mesonephric remnants

A number of structures may persist to various degrees in the normal adult female (Fig. 4).

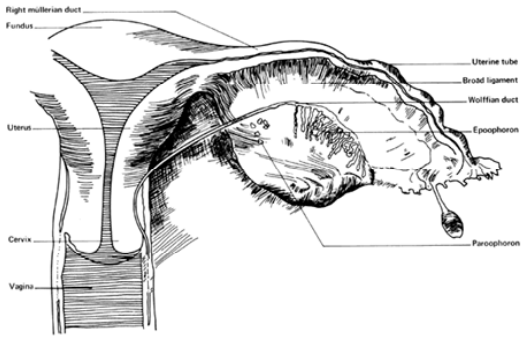

Fig. 4: Mesonephric vestiges
(Source : http://resources.ama.uk.com/glown)

1. Hydatid of Morgagni (probably of Müllerian origin)
2. Vesicular appendage
3. Epoophoron (organ of Rosenmuller)
4. Paroophoron (Kobeit's tubules)
5. Gartner's duct or canal (ductus epoophori longitudinalis)

In the lateral third of the mesovarium lies the epoophoron, consisting of eight to thirteen tubules running from the mesonephric duct toward the ovary. They are of little clinical significance, although benign cysts are believed to occasionally arise in them. Farther caudal along the regressing mesonephtic duct may be found a small group of mesonephric tubules called the 'Paroophoron'.

Farther along the course of the vestiges

of the mesonephric duct can be found remnants of the duct, here called 'Gartner's duct'. Coiled tubes frequently occur in the lower part of the supravaginal cervical wall, where they are called the 'Ampulla'. Although believed to be paramesonephric rather than mesonephric in origin, clear pedunculated hydatid or cystic structures arising at the ostium at the end of the tube are found frequently. These are called the 'Hydatids of Morgagni' (appendix vesiculosa) and are usually harmless but are removed when encountered since they can undergo torsion.

Vaginal anomalies

The vagina is formed between the 16th and 20th weeks by the development of lacunas; complete canalization later occurs to form the vaginal lumen (Fig. 5).

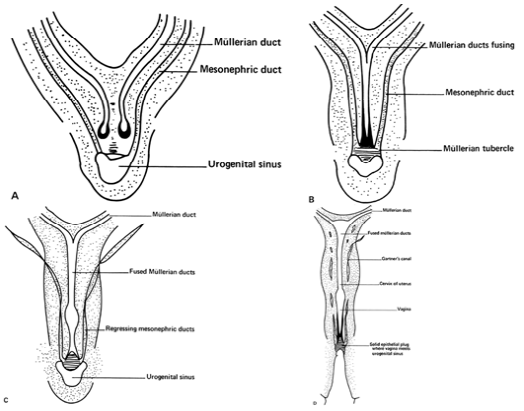

Fig. 5: A. Müllerian and Wolffian ducts B. Fusion of Müllerian ducts C. Regression of mesonephric ducts D. Uterus, cervix, and vagina
(Source : http://resources.ama.uk.com/glown)

The principal congenital anomalies of the vagina include the following (Fig. 6)

- Longitudinal septum
- Transverse septum
- Vaginal agenesis
- Mesonephric remnants

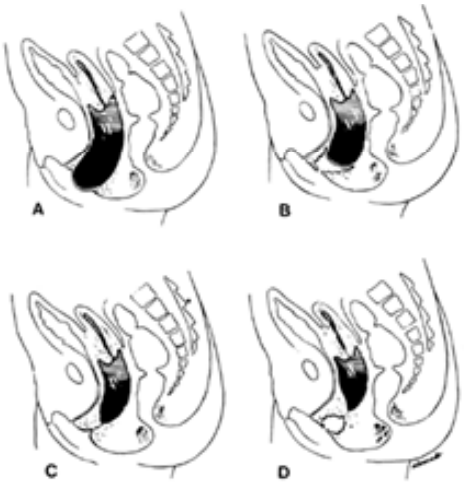

Fig. 6: Diagram of various lesions causing hydrometrocolposA. Imperforate hymen B. Transverse septum C. and D. Low and high atresia of vagina[10]

Other anomalies in females

Labial adhesion

Labial adhesion is an anomaly frequently encountered in young girls. Generally, it results from chronic inflammation of the vulva. This condition must be distinguished from labial fusion, a different lesion attributed to virilization of the female external genitalia.

Labial adhesion usually is asymptomatic, but when the introitus is completely sealed, vaginal micturition with consequent dribbling can occur; moreover, urinary stasis can predispose the child to infection.

Clitoral hypertrophy

Hypertrophy of the clitoris is observed in cases of fetal exposure to androgens. The disorder is usually the result of congenital deficiencies of the adrenal enzymes of cortisol synthesis; more rarely, it is caused by idiopathic virilization or exposure to progestational agents in utero.

Hydrocolpos or Hydrometrocolpos

Accumulation of fluid due to congenital vaginal obstruction is the cause of hydrocolpos (distention of the vagina) and hydrometrocolpos (distention of the vagina and uterus). The obstruction is frequently caused by imperforate hymen or, less commonly, transverse vaginal septum. Obstructing genital anomalies may present at birth with mucocolpos, but the obstructive anomaly is often asymptomatic and escapes detection.

An imperforate hymen is often difficult to diagnose perinatally because of the small size of the genitalia and the influence of maternal estrogens, which cause thickening and enlargement of the labia minora. The neonate with hydrocolpos related to congenital vaginal obstruction can present with a bulging interlabial cyst, associated with a mass in the lower abdominal quadrants, often inducing urinary tract obstruction.

Persistent urogenital sinus and cloaca

Congenital malformation involving the urogenital sinus and cloaca remains one of the most severe birth defects compatible with life. Moreover, management of this malformation is one of the greatest challenges of pediatric surgery and urology. Development of the lower urinary tract and genital and anorectal systems is correlated closely in females. Consequently, abnormal embryologic development can involve all three systems.

Devlopmental abnormalities of the male reproductive organs

Penile agenesis

Congenital absence of the penis (aphallia), is a rare anomaly caused by developmental failure of the genital tubercle. Its approximate incidence is 1 case per 30 million population. The phallus is completely absent, including the corpora cavernosa and corpus spongiosum; however, some children reportedly have small portions of corpora cavernosa. Usually, the scrotum is normal and the testes are maldescended. The urethra opens at any point of the perineal midline from over the pubis to, most frequently, the anus or anterior wall of the rectum.

More than 50% of patients with penile agenesis have associated genitourinary anomalies, the most common of which is cryptorchidism; renal agenesis and dysplasia may also occur. Reports indicate that aphallia may be associated with pregnancy complicated by poorly controlled maternal diabetes.

Hypospadias

Hypospadias are the most common penis abnormality (1 in 300) and result from a failure of male urogenital folds to fuse in various regions. This, in turn, leads to resulting in a proximally displaced urethral meatus (Fig. 7).

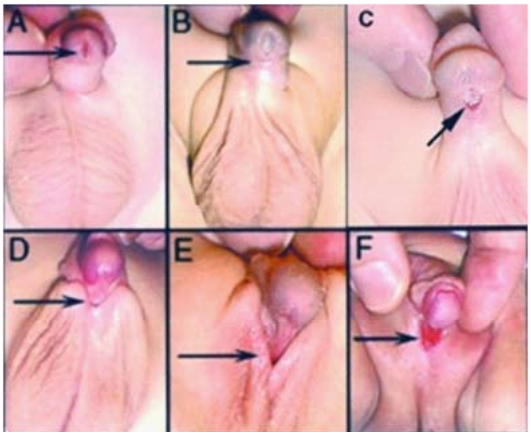

Fig. 7: Classification of Hypospadias[11]

	Hypospadia Classification	Meatus Opening
A	Anterior	on inferior surface of glans penis
B	Coronal	in balanopenile furrow
C	Distal	on distal third of shaft
D	Penoscrotal	at base of shaft in front of scrotum
E	Scrotal	on scrotum or between the genital swellings
F	Perineal	behind scrotum or genital swellings

Table 1: Meatus opening in hypospadias

Penile duplication

Duplication of the penis (diphallia) is another rare anomaly resulting from incomplete fusion of the genital tubercle. Two distinct forms of penile duplication are recognized, as follows:

The most common form is associated with bladder-exstrophy complex. In this case, the patient exhibits a bifid penis, which consists of two separated corpora cavernosa that are associated with two independent hemiglands.

The second form (true diphallia) is an extremely rare congenital condition that presents in many ways, ranging from duplication of the glands alone to duplication of the entire lower genitourinary tract; the urethral opening can be in normal position or in a hypospadiac or epispadiac position.

Microphallus

The term microphallus, or micropenis, is applicable only to a normally formed yet abnormally short penis. Specifically, the term applies to a penis with a stretched length that is more than 2.5 standard deviations (SD) below the mean for age.

This condition may be considered a minor form of ambiguous genitalia with correlated medical and psychological problems similar to those of the major intersex form. The scrotum is usually normal, but testes are often small and undescended. In a few cases, the corpora cavernosa are severely hypoplastic. Measurement (i.e. stretched penile length) is very important in differenting the various types of pseudomicropenis, particularly, the buried penis in the obese infant and the penis concealed by an abnormal skin attachment.

Penile torsion

The embryologic abnormality is often an isolated skin and dartos defect that can be remedied simply by freeing the penile shaft of its investing tissue. The rotation is usually to the left in a counterclockwise fashion. The urethral meatus is placed in an oblique position, and the median raphe makes a spiral curve from the base of the penis to the meatus. However, in some cases, penile torsion is associated with mild forms of hypospadias or hooded prepuce.

Webbed and buried penis

Webbed penis is a common congenital abnormality in which a web or fold of scrotal skin obscures the penoscrotal angle.

Conclusion

In view of the complexity and duration of differentiation and development of the genital and urinary systems, it is not surprising that the incidence of malformations involving these systems is one of the highest (10%) of all body systems. Etiologies of congenital

malformations are sometimes categorized on the basis of genetic, environmental, or genetic-environmental (polyfactorial inheritance) factors. Known genetic and inheritance factors reputedly account for about 20%, aberration of chromosomes for nearly 5%, and environmental factors for nearly 10% of anomalies detected at birth. The significance of these statistics must be viewed against reports; an estimated one-third to one-half of human zygotes are lost during the first week of gestation and the cause of possibly 70% of human anomalies is unknown. Even so, congenital malformations remain a matter of concern because they are detected in nearly 3% of infants, and 20% of perinatal deaths are purportedly due to congenital anomalies.

References

1. American Psychological Association. Sexual orientation, homosexuality and bisexuality. http://leachpsychology.com/uploads/material personal sex orient. pdf. [Last accessed on10/08/2015].
2. World Health Organization. Sexual and reproductive health: Defining sexual health. http://www.who.int/en/ [Last accessed on 20/06/2015].
3. King BM. Human Sexuality Today. Pearson; 8th edition.2013.
4. Ross E, Rapp R.Sex and Society: A Research Note from Social History and Anthropology comparative Studies in Society and History. 1981; 23(1):51-72.
5. Sadler TW. Langman's Medical Embryology. Chapter 15, Urogenital System;11th edition. Wolters Kluver: Lippincott Williams & Wilkins, New Delhi; 2010. p. 246.
6. Gray SW, Skandalakis JE. Embryology for Surgeons. Philadelphia; Saunders, 1972.
7. Hughes EC. Obstetric Gynecologic Terminology. Philadelphia; Davis, 1972.
8. Moore KL. The Developing Human. Philadelphia; Saunders, 1973.
9. Patten BM. Human Embryology. New York; McGraw Hill, 1968.
10. Spencer R, Levy DM.Hydrometrocolpos: Report of three cases and review of the literature. Ann Surg1962; 155:558.
11. Baskin LS, Himes K, Colborn T. Hypospadias and endocrine disruption: is there a connection? Environ. Health Perspect. 2001; 109(11):1175-83.

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Human Reproductive Biology : Changes Through Life

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Abstract

Human sexuality is the capacity of human beings to have erotic experiences and responses. Genetics and endocrine system is known to majorly impact human reproductive system and sexuality over the entire lifespan. Ovaries, the most important organ in females gradually grow unresponsive to gonadotropins with advancing age, and their function declines, so that menopause occurs. Although the function of the testes too tends to decline slowly with advancing age, it is still unclear whether there is a 'male menopause' (andropause) similar to that occurring in women.

Introduction

A person's sexual orientation can influence their sexual interest and attraction for another person [1]. Sexuality may be experienced and expressed in a variety of ways, including thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles, and relationships [2].

These may manifest themselves through biological, physical, emotional, social, or spiritual aspects. The biological and physical aspects of sexuality largely concern the human reproductive functions, including the human sexual response cycle and the basic biological drive that exists in all species [3]. Physical and emotional aspects of sexuality include bonds between individuals which gets expressed through profound feelings or physical manifestations of love, trust, and care. While, the social aspects encompasses the effects of human society on one's sexuality, the spiritual aspects is concerned with an individual's spiritual connection with other members of the society. Sexuality impacts and is impacted upon by cultural, political, legal, philosophical, moral, ethical, and religious aspects of life.

Reproductive biology

Modern genetics and embryology make it clear that, in most species of mammals, the multiple differences between the male and the female are primarily due to a single chromosome i.e. the Y chromosome and a single pair of endocrine structures, the testes in the male and the ovaries in the female. The differentiation of the primitive gonads into testes or ovaries in utero is genetically determined in humans, but the formation of male genitalia depends on the presence of a functional, secreting testis; and, in the absence of testicular tissue, the development is female. After birth, the gonads remain quiescent until adolescence, when they are activated by gonadotropins from the anterior pituitary. Hormones secreted by the gonads at this time cause the appearance of features, typical of the adult male or female. In human females, ovarian function regresses after a number of years and menstrual cycles come to a halt. In males, gonadal function slowly declines with advancing age, but the ability to produce viable gametes persists. In both sexes, the gonads have a dual function: the production of germ cells and the secretion of sex hormones. Particularly, during pregnancy, the ovaries secrete the polypeptide hormone relaxin, which loosens the ligaments of the pubic symphysis and softens the cervix, facilitating delivery of the fetus. In both sexes, the gonads secrete other polypeptides, including inhibin B, a polypeptide that inhibits follicle-stimulating hormone (FSH) secretion. The secretory and gametogenic functions of the gonads are both dependent on the secretion of the anterior pituitary gonadotropins, FSH and luteinizing hormone (LH). In males, gonadotropin secretion is noncyclic; but in postpubertal females, an orderly, sequential secretion of gonadotropins is necessary for the occurrence of menstruation, pregnancy and lactation.

Reproductive physical maturity and the capacity for human reproduction begin during puberty. A period of rapid growth and change experienced by both males and females, puberty is not an isolated event, but a process which takes place over several years.

During puberty, the hypothalamus, a gland located at the base of the brain produces hormones. These hormones stimulate the reproductive glands, which produce testosterone in males and estrogen and progesterone in females. Male puberty, generally, occurs between the age of 13 and 15 years. It is characterized by the secretion of the male hormone testosterone, which, in turn, stimulates spermatogenesis (sperm production), and the development of secondary sexual characteristics (increased height and weight, broadening shoulders, growth of the

testes and penis, pubic and facial hair growth, voice deepening, and muscle development).

Female puberty generally occurs during the age from 9 to 13 years, and results in ovulation and menstruation, in response to cyclic hormonal changes in estrogen and progesterone. Secondary sexual characteristics (growth of pubic and underarm hair, breast enlargement, vaginal and uterine growth, widening hips, increased height, weight and fat distribution) also occur as part of the female pubertal process.

Aging changes in the male reproductive system

Aging changes in the male reproductive system may include changes in testicular tissue, sperm production, and erectile function. These changes usually occur gradually. Unlike women, men do not experience a major, rapid change in fertility as they age. Instead, changes occur gradually during a process that some people call as andropause.

Aging-related changes in the male reproductive system occur primarily in the testes. As age advances, testicular tissue mass decreases. The level of the male sex hormone, testosterone stays the same or decreases gradually. There may be problems in getting an erection. This is a general slowing down of the process, rather than a complete lack of function.

The tubes that carry sperm may become less elastic. The testes continue to produce sperm, but the rate of sperm cell production slows down. Likewise, epididymis, seminal vesicles, and prostate gland also lose some of their surface cells. But they continue to produce the fluid that helps carry sperm. With age, the prostate gland enlarges. This condition, known as benign prostatic hypertrophy (BPH), affects about 50% of men. BPH may cause urination and ejaculation problems.

Effect of changes

Fertility varies from man to man. Age does not predict male fertility. Prostate function does not affect fertility. Potentially, a man can become father of a child, even if his prostate gland has been removed. Some fairly old men can (and do) procreate children. The volume of fluid ejaculated usually remains the same, but there are fewer living sperm in the fluid as age advances. Some men may have a lower sex drive. With age, sexual responses may become slower and less intense. This may be attributed to decreased testosterone level. It may also result from psychological or social changes associated to aging such as lack of a willing partner, illness, chronic conditions, or medications. Aging, by itself, does not deprive a man from enjoying sexual relationships.

Puberty in male

When a baby boy is born, he has all the parts of his reproductive system in place, but it isn't until puberty that his reproductive organs mature and become fully functional. In a newborn, FSH and LH levels are high, but after a few weeks these levels drop to extremely low. As puberty sets in, usually between the ages of 10 and 14, the pituitary gland starts secreting hormones that stimulate the testicles to produce testosterone. The production of testosterone brings about many physical changes. Although the timing of these changes varies with each individual male, the stages of puberty generally follow a set sequence [4].

In the first stage, the scrotum and testes grow larger, and the apocrine glands develop. In the second stage, the penis becomes longer,

and the seminal vesicles and prostate gland grow. Hair begins to appear in the pubic region. Usually, reproductive capacity is known to have developed by this stage.

The third stage is marked by the appearance of hair on the face and the underarms. During this stage, a male's voice also deepens.

Growth of genitalia

A boy's penis grows little from the fourth year of life until puberty. On an average a prepubertal penis measures 4 cm in length. Within months after growth of the testes begins, rising levels of testosterone promote growth of the penis and the scrotum. The penis continues to grow until about 18 years of age, reaching an average adult size of about 10-16 cm [4].

Although erections and orgasms can occur in prepubertal boys, they become much more common during puberty, accompanied by development of libido. Ejaculation becomes possible early in puberty; and prior to that boys may experience dry orgasms. Emission of seminal fluid may occur due to masturbation or spontaneously during sleep (commonly termed as wet dream and clinically called as nocturnal emission). The ability to ejaculate occurs in boys fairly early in puberty compared to other characteristics, and may precede reproductive capacity itself. In parallel to the irregularity of the first few periods of a girl, for the first one or two years post his first ejaculation, a boy's seminal fluid may contain few active sperm. If the foreskin of a boy does not become retractable during childhood, it normally begins to retract during puberty. This occurs as a result of the increased production of testosterone and other hormones in the body [4].

Common problems

Erectile Dysfunction (ED) may become a concern for aging men. It is normal for erections to occur less often in aging men than when they were younger. Aging men are often less able to have repeated ejaculations. 90% of ED is believed to be caused by a medical problem instead of a psychological problem.

Medicines (especially those used to treat hypertension and certain other conditions) can prevent a man from getting or keeping enough of an erection for intercourse. Disorders, such as diabetes, can also cause ED. Erectile Dysfunction that is caused by medicines or illness is often successfully treated [5,6].

BPH may eventually interfere with urination. Changes in the prostate gland make elderly men more likely to have urinary tract infections. Prostate gland infections or inflammation (prostatitis) may also occur. Prostate cancer, one of the most common causes of cancer death in men, becomes more likely as men age. Testicular cancers are possible, but these occur more often in younger men also [5,6].

Prevention

Many age-related physical changes, such as prostate enlargement or testicular atrophy, are not preventable. Getting treated for health disorders, such as high blood pressure and diabetes, may prevent problems with urinary and sexual function. Changes in sexual response are most often related to factors other than simple aging. Older men are more likely to have good sex if they continue to be sexually active during middle age.

Aging changes in the female reproductive system

As a woman ages, a number of changes take place in her reproductive system. Aging changes in the female reproductive system result mainly from changing hormone levels. A clear sign of aging manifests itself when a woman's menstrual periods stop permanently. A normal part of a woman's aging process, the phenomenon is known as menopause. As the ovaries stop releasing eggs (ova), the menstrual periods stop. Menopause occurs in most women around the age of 50 years. However, it occurs before the age of 40 years in about 8% of women. Prior to menopause, menstrual cycles often become irregular.

For women, the cessation of menses (menopause) is an obvious sign of aging. But, it is by no means the only change. A transition period, called the climacteric, lasts for many years before and after a woman's last menstrual period. For a woman, aging changes involve hormone levels, physical changes in the woman's entire reproductive tract, and psychological changes. Changes occur in the intricate relationship between the ovarian hormones and hormones produced by the pituitary gland [7,8].

The time around menopause is called perimenopause. It may begin several years before last menstrual period. Signs of perimenopause include more frequent periods at first, and then occasional missed periods; periods that are longer or shorter; and changes in the amount of menstrual flow.

Eventually periods will become much less frequent, until they stop completely. Along with the changes in periods, physical changes in woman's reproductive tract occur as well.

Puberty in female

During the period from birth to puberty, a neural mechanism operates to prevent the normal pulsatile release of GnRH. The age at the time of puberty is variable. In girls, the first event is thelarche, the development of breasts, followed by pubarche, the development of axillary and pubic hair, and then by menarche, the first menstrual period. Initial menstrual periods are generally anovulatory, and regular ovulation appears about a year later.

It has been argued for some time that a critical body weight must normally be reached for puberty to occur. Thus, for example, young women who engage in strenuous athletics lose weight and stop menstruating, as do girls with anorexia nervosa. If these girls start to eat and gain weight, they menstruate again, that is, they 'go back through puberty.' It now appears that leptin, the satiety-producing hormone secreted by fat cells, may be the link between body weight and puberty. However, the way that leptin fits into the overall control of puberty remains to be determined.

Effects of changes

With menopause, ovaries in women stop producing the hormones estrogen and progesterone.The ovaries also stop releasing eggs. The ovaries become less responsive to stimulation by follicle-stimulating hormone (FSH) and luteinizing hormone (LH).

Prior to menopause, fertility varies depending on hormone levels. Menopause is said to have occurred when there has been one year without a menstrual period. With menopause, reproductive capacity is lost. Any bleeding that occurs more than 1 year after the last period is not normal and should be checked.

As hormone levels fall, other changes tend to occur in the reproductive system. Vaginal walls become thinner, dryer, and less elastic, and possibly irritated. Sometimes sex becomes painful due to these vaginal changes. Risk of vaginal yeast infections increases.

Amongst other common changes, a woman may experience menopausal symptoms such as hot flashes, moodiness, headaches, and trouble sleeping. She may also have problems with short-term memory. This phase is also marked by decrease in breast tissue; lower sex drive and sexual response; increased risk of bone loss (osteoporosis); and loss of tone in the pubic muscles. Changes related to the urinary system, such as frequency and urgency of urination and an increased risk of urinary tract infection too may be witnessed.

Common problems

The pubic muscles lose tone, and the vagina, uterus, or the urinary bladder can fall out of position. This is called vaginal prolapse, bladder prolapse, or uterine prolapse, depending on the structure that drops.

Irritation of the external genitals may also occur (pruritus vulvae). The vaginal walls grow thinner and dryer and may become irritated (atrophic vaginitis). Sexual intercourse may become uncomfortable for some women (dyspareunia). There are changes in the levels of normal microorganisms in the vagina, and there is an increased risk of vaginal yeast infections. Similar changes to the bladder and urethra may increase symptoms such as frequency and urgency of urination, and there is an increased risk of urinary tract infection after menopause, as discussed earlier.

Hot flashes, mood disturbances, headaches, and sleep disturbances are also common symptoms that occur during menopause. The causes of these changes are not well understood, but they are also related to the decreasing amount of estrogen produced by the ovaries. Risk of Osteoporosis is greater in older women. This is caused, in part, by decreased estrogen levels [9].

Prevention and treatment

Adequate lubrication can help prevent painful sexual intercourse. Vaginal moisturizers are available without prescription. Applying topical estrogen inside the vagina may help in thickening the vaginal tissue and increasing moisture and sensitivity inside it. Getting regular exercise, eating healthy foods, and staying involved in activities with friends and loved ones can help the aging process go more smoothly. Hormone therapy with estrogen or progesterone alone or in combination, may help menopause symptoms such as hot flashes or vaginal dryness and pain with intercourse.

However, hormone therapy (HT) may have side effects such as vaginal bleeding, and it has been associated with an increased risk of breast cancer, stroke, and heart disease. The risk and benefit of treatment is different for each person. So women should discuss the pros and cons of estrogen treatment with their personal health care providers [9].

Conclusion

Change is inevitable in human life. Sexual responses and sexual activities change as we age. It is always wise to understand the bodily changes and act accordingly.

References

1. American Psychological Association. Sexual orientation, homosexuality and bisexuality. http://leachpsychology.com/uploads/material personal sex orient. pdf. [Last assessed on10/08/2015].
2. World Health Organization. Sexual and reproductive health: Defining sexual health. http://www.who.int/en/ [Last assessed on 20/06/2015].
3. Bruce M. Human Sexuality Today. 2013.
4. Valerie C. Essentials of Anatomy and Physiology. Scanlon and Tina Sanders.
5. Bhasin S, Cunningham GR, Hayes FJ, et al. Testosterone therapy in adult men with androgen deficiency syndromes: An endocrine society clinical practice guideline. Journal Clin Endocrinol Metab
6. Minaker KL. Common clinical sequelae of aging. In: Goldman L, Schafer AI, eds.Goldman's Cecil Medicine
7. Lobo RA. Menopause and care of the mature woman: endocrinology, consequences of estrogen deficiency, effects of hormone replacement therapy, treatment regimens. In: Katz VL, Lentz GM, Lobo RA, Gershenson DM, eds. Comprehensive Gynecology.
8. North American Menopause Society. The 2012 hormone therapy position statement of The North American Menopause Society.
9. Aging changes in the female reproductive system. http://www.healthcentral.com/osteoporosis/encyclopedia/aging-changes-in-the-female-reproductive-system-4004733/ [Last assessed on 20/06/15]

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Issues Of Sexuality In Geriatric Population

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Abstract

Sexual health in general and issues of geriatric sexuality in particular are neglected by laymen and health care professionals alike. Contrary to popular beliefs, elderly persons continue to have sexual desire and sexual activities. Sexual problems are more frequently found in elderly. This review describes briefly about the various causes of sexual dysfunction, assessment and management of sexual problems in elderly.

Introduction

Sexuality is an important aspect of human health and illness. World Health Organization defines sexual health as a state of physical, mental, and social well-being in relation to sexuality and not mere absence of disease, dysfunction and infirmity [1]. Sexual health, in general has been a neglected clinical entity [2].With better life expectation, proportion of elderly in the population

has increased and so are the old-age health issues. The field of old age sexuality is facing gross neglect and sarcasm from both laymen and healthcare providers alike [3].

Old age sexuality: What we know so far?

The literature available till now clearly states that, contrary to the popular beliefs, elderly people continue to be sexually active, though, not as much as their younger counterparts and, sexual problems are more frequent in old age [4]. A study by American Association of Retired Persons (AARP) reported that, three fourth of both men and women older than 45 years of age remained sexually active. About 84% of men and 78%of women aged 45-59 years were reported to have steady sexual partners, whereas 58% men and 21% women older than 75 years had same. Around 50% of individuals of age 45-59 years reported of having sex at least once a week. Sexual activity was considered important for the overall quality of life by 60% of men and 35% of women [5].

A large study done across 29 countries involving 27,000 elderly individuals showed that men had high level of sexual satisfaction than women and sexual satisfaction decreased with age [6]. Lindau et al. (2007) conducted a study involving around 3000 individuals of age 57-85 years and found that 73% of those aged between 57 and 64 and 26% of those older than 75 years were sexually active [7]. An Indian study by Kalra et al. (2011) reported that 72% individuals below 60 years were sexually active, while about 57% individuals above 60 years were found to be sexually active [8].

Contrary to the above facts and figures, healthcare professionals often miss the assessment of sexual problems of elderly clients and are not comfortable in discussing issues of old age sexuality. The stereotypical belief that elderly individuals are sexually inactive is shared by many of the healthcare professionals [3]. Elderly patients on other hand also find it difficult to discuss these matters with their physicians. They are usually afraid that the physician may judge them as abnormal. Nevertheless, they expect their physician to actively enquire about their sexual life [9]. Hence it is important for all healthcare professionals to get themselves sensitized about this problem and to incorporate the assessment of sexual problems as a part of holistic geriatric assessment.

Physiological basis of sexual functioning : Changes in old age

Normal sexual functioning is dependent on the integrity of several systems like endocrine system, peripheral nervous system, and vascular system, affecting different phases of sexual response. With aging, many of these systems undergo changes leading to sexual problems. A brief understanding of different phases of normal sexual response is necessary for a better understanding of old age sexual problems.

Pioneer researchers in the field of sexual medicine, Masters and Johnson classically described four phases of sexual response cycle as Arousal, Plateau, Orgasm, and Resolution [10]. Later on some other researchers added another phase called Desire [5]. Desire and Arousal often go hand in hand. Desire, as the name suggests, is characterized by seeking sexual pleasure, which

is often followed by arousal during which important changes take place in sexual organs like penile erection, vaginal lubrication, clitoris enlargement and breast engorgement. Plateau phase is short lasting and is characterized by impending orgasm. Orgasm follows plateau phase and is characterized by contractions of smooth muscles of both penis and vagina, euphoric feeling in both the partners and ejaculation in men. Orgasm, also known as 'Climax' in general terms is short lasting in men, whereas in women it may last for variable length of time and can happen multiple times. This phase is followed by Resolution, during which genitals revert back to normal conditions and further sexual activity is not possible for a short duration of time. Problems in each of these stages can occur due to aging process and many other factors [5]. Table No. 1 summarizes the aging related problems affecting different physiological stages of sexual response [5].

Table No. 1: Aging related problems affecting different physiological stages of sexual response

Sl. No.	Stage of sexual response	Normal physiological / psychological changes	Pathology associated with aging	Sexual problems
1	Desire	Seeking sexual pleasure	Reduced levels of testosterone leading to lack of desire	Hypoactive sexual drive disorder
2	Arousal	Penile erection, vaginal lubrication, breast and clitoris enlargement etc.	•Inadequate erections due to vascular, neurological changes and lack of testosterone in males •Lack of vaginal lubrication in females due to low oestrogen levels •Decreased blood supply to vagina	•Erectile dysfunction in males •Female sexual arousal disorder •Sexual pain disorder in females
4	Orgasm	Ejaculation in men, contraction of genital smooth muscles and euphoric feelings in both the partners	Reduced testosterone level may lead to reduced volume of ejaculate, abnormal sperm mobility and morphology	•Premature ejaculation •Anorgasmia
5	Resolution	Relaxation phase– genitals revert back to normal condition		Prolonged refractory period

Other factors playing role in old age sexual dysfunction

Apart from the physiological changes associated with aging, many external factors also affect old-age sexuality. Most important among them being chronic ailments. Many chronic physical and psychiatric illnesses like diabetes mellitus, hypertension, myocardial infarction, chronic kidney disease, cerebrovascular accidents, major depressive disorder and anxiety disorder etc. are common in old-age which leads to sexual dysfunction. Hence, assessment for sexual dysfunction in old-age patients with chronic illnesses is important [5].

Use of certain medications may also lead to sexual dysfunctions in elderly. Anti-hypertensives such as beta-blockers and diuretics, antiandrogens, antihistamines, antidepressants, antipsychotics, benzodiazepines can cause sexual dysfunctions [5].

Unavailability of partner, life stresses, interpersonal relationship issues, lack of privacy, deformities are some social factors which attribute to sexual problems in elderly individuals.

Assessment and management of sexual problems in elderly

Assessment of sexual problems in old age requires a comfortable and harmonious patient-doctor relationship. Elderly people may open up more easily with a health care professional of their age and sex. Partner involvement is also crucial and must be ensured wherever possible. A detailed history including attitude towards sexuality, current sexual practices, past sexual experiences is essential. Relevant medical, psychiatric and psychosocial history along with medication exposure should be documented. A thorough physical examination should be conducted. Investigations like routine blood chemistry (hemogram, blood sugar, liver function tests, and lipid profile), hormonal assays (testosterone, prolactin, thyroid function test, and prostate specific antigen levels), nocturnal penile tumescence and rigidity testing, and penile duplex ultrasonography should be used judicially [5].

The first step in treatment is proper education of both the partners. Sex education may also help in changing the age old beliefs about sex that older people may be harbouring. Clinicians should help the patients to recognize sexuality as a form of physical and psychological intimacy and not just as penetrative intercourse. The couples should be advised to shift their focus from intercourse to foreplay and to adopt sexual activities according to their physical limitations. Rehabilitative and palliative treatments like analgesics for pain, inhalers for shortness of breath, physiotherapy for joint immobility and muscle weakness should be used whenever required. Appropriate management of depression and anxiety should be ensured. If the patient is on any medication that causes sexual dysfunction, either the dose should be reduced or the drug should be replaced by a safer drug [5].Table No.2 highlights the pharmacotherapy for different sexual dysfunctions in the elderly.

Table No. 2 : Pharmacotherapy for different sexual dysfunctions in elderly [5]

Sl. No	Sexual dysfunction	Pharmacotherapy	Comments
1.	Erectile dysfunction	1. Phosphodiesterase 5 inhibitors (PDE 5 inhibitors) like Sildenafil, Tadalafil, Vardenafil 2. Penile intravenous injections of Alprostadil (Prostaglandin E1) 3. Vacuum construction devises and penile implants 4. Testosterone replacement therapy for hypogonadism	1. PDE5 inhibitors have revolutionised the treatment of ED and are effective even in patients with organic cause of PD. They are usually prescribed as 1st line drugs. 2. PDE5 inhibitors should not be combined with nitrates and caution should be taken in patients with cardiovascular disease, abnormal penis shape, orthostatic hypotension, chronic renal/hepatic illness, and diseases like sickle cell anaemia and multiple myeloma which increase risk of priapism. 3. An extremely rare but severe side effect that has been observed in patients on PDE5 inhibitors is Nonarteritic Anterior Ischemic Optic Neuropathy (NAION). 4. Penile intravenous injections of Alprostadil (Prostaglandin E1) can cause local pain, tissue scar and rarely priapism. 5. Testosterone replacement therapy should be avoided in patients with history of prostate and bladder cancer.
2	Premature ejaculation	1. SSRIs to delay ejaculation 2. PDE5 inhibitors are also found to be effective 3. Squeeze technique : partner gently squeezes the base of the penis to delay ejaculation 4. Cognitive- behavioural techniques	Common adverse effects of SSRIs like gastric irritation, bleeding tendencies should be kept in mind. Hyponatremia, though rare, may be matter of concern in elderly.

3	Hypoactive sexual desire disorder in women	1. Psychoeducation 2. Counselling to counter the myths and misconceptions 3. Estrogen replacement therapy 4. Testosterone replacement therapy	Testosterone replacement therapy may lead to virilisation, suppression of clotting factors and liver damage.
4	Female orgasmic disorder	1. Individual sex therapy involving relaxation techniques incorporating sensual self-stimulation and masturbation. 2. Use of vibrators to enhance clitoral stimulation 3. Short term group therapies 4. When orgasm can be, achieved Sensate focus therapy can help in engaging into couple's sexual relations	
5	Sexual pain disorders	1. Estrogen replacement therapy for dyspareunia 2. Sensual exercises (massage, foreplay) 3. Conjoint sex therapy for vaginismus 4. Graduated vaginal dilators	Psychosocial issues related to vaginismus should be explored.

Sex therapy can be administered using cognitive-behavioural techniques. Inter personal issues may be addressed by using couple therapy. Sensate-focus therapy is apt for old-age patients [5].

Problems specific to old age home

Elderly living in old-age homes face peculiar problems related to sexuality. White (1982) found that about 17% of the nursing home residents wanted to be sexually active [11]. Lichtenberg (1993) also reported that about 10% of residents expressed interest in being sexually active [12]. The health care providers and other staffs, on other hand have variable opinions on the sexual activities of the residents. The authors also observed that administrators of long term care set-ups take extreme or all or none positions [11].Though they acknowledged that being sexually active is an important aspect of health, they expressed concern about the capacity to consent in elderly people, sexual exploitation and legal consequences. Consequently, a low rate

of sexual activity is observed in residential care settings [13].

Assessment of elderly patients while admitting into old-age homes should incorporate assessment of their sexual interest and capacity to participate in intimate relationships. Health care staffs should be sensitized and trained to assess the same. Decisional abilities of an older adult can be assessed by using following criteria: whether the individual can

1. Communicate choice
2. Communicate understanding of the choice
3. Communicate appreciation of potential consequences of the choice
4. Communicate reasoning and rationale of the choice.

Lichtenberg and Strzepek formulated a tool for assessment of decisional ability, using parameters like awareness of relationship (know who is the partner, know the partner is not spouse, aware of who is initiating sexual contact, and state the level of intimacy to which she or he is comfortable), ability to avoid exploitation (knows about relationship, knows what one wants from the relationship, and has ability to set limits if wants to e.g. saying no) [11].

Future directions

The field of old-age sexuality needs to be explored extensively. Available data is sparse and is gathered from a limited number of countries. Given the significant impact of culture on bothaging and sexuality, attitude, practice and problems pertaining to sexuality in individuals from different socio-cultural background, especially in the Indian subcontinent need to be assessed. Another important area of research is sexual problems in special populations like elderly with HIV, cancer and other chronic illnesses and elderly gay and lesbian individuals.

Healthcare professionals should be sensitized to assess the sexual practices and problems in old age. Community education programmes should incorporate the topic of old-age sexuality in order to overcome the stigma. Guidelines for the safe and effective management of sexual problems in elderly should be laid down with sufficient research in different settings.

Conclusion

Elderly persons continue to be sexually active and express sexual desire, though with less frequency than their younger counterparts. Sexual problems are more common in elderly. Age related physiological changes, illnesses, drugs prescribed and many other factors play important role in sexual health and illness in elderly. Healthcare providers should be sensitized about the thorough assessment and appropriate management of sexual problems in elderly patients.

References

1. World Health Organization. Defining sexual health: Report of a technical consultation on sexual health. Geneva: WHO; 2006.
2. Walker BL. Sexuality and the elderly: A research guide. Annotated ed, Westport, CT: Greenwood Press, 1997.
3. Taylor A, Gosney MA. Sexuality in older age: essential considerations for healthcare professionals. Age and Ageing. 2011; 40: 538–543.
4. Gott M. Sexual health and the new ageing. Age and Ageing. 2006; 35: 106–107.
5. Agronin ME. Sexual disorders. In: Blazer DG, Steffens

DC, editors. The American Psychiatric Publishing Textbook of Geriatric Psychiatry.4th edition. The American Psychiatric Publishing, Washington DC;2010: 357- 373.

6. Laumann EO, Paik A, Glasser DB et al. A cross national study of subjective sexual well being among older men and women. Findings from the global study of sexual attitudes and behaviours. Arch Sex Behav. 2006; 35: 145-161.
7. Lindau ST, Schumm P, Laumann E, Levinson W, O'Muircheartaigh C, Waite LA study of sexuality and health among older adults in the USA. N Engl J Med. 2007; 357: 762–74.
8. Kalra G, Subramanyam A, Pinto C. Sexuality: Desire, activity and intimacy in the elderly. Indian J Psychiatry. 2011;53:300-6.
9. Baldwin K, Ginsberg P, Harkaway RC. Under-reporting of erectile dysfunction among men with unrelated urologic conditions. Int J Impot Res. 2003; 15: 87–9.
10. Masters WH, Johnsons VE. Human Sexual Response. Boston, MA. Little, Brown,1966.
11. White CB. Sexual interest, attitude, knowledge and sexual history in relation to sexual behaviour in institutionalized aged. Arch Sex Behav. 1982;11: 11-21.
12. Lichtenberg PA. Sexuality and Physical Intimacy in Long Term Care: Sexuality, long term care, capacity assessment. OccupTher Health Care. 2014; 28(1): 42–50.
13. Hajjar RR, Kamel HK: Sexuality in nursing home, part 1: attitudes and barriers to sexual expressions. J Am Med Dir Assoc. 2003; 5 (suppl): 152-6.

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Difficult Issues In Sexuality Development: A Mental Health Perspective

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Abstract

Sexual development is a dynamic process that continues across the lifespan with multiple facets. There is a need to understand evolving perspectives of childhood and adolescent phase that shapes sexual attitudes, sexual identity and directly impacts sexual behavior. Gender dysphoria is one of the difficult issues encountered across developmental phase. Early identification of gender dysphoria and comprehensive assessment of physical as well as mental health by a multidisciplinary team is essential. Its diagnosis has complex social, medical, ethical and political ramifications. So, management should require a fine balancing between concerns of the family as well as myriad of emotions of patient. This article discusses possible biopsychosocial etiology behind this problem, prognosis of gender dysphoria across lifespan, different treatment strategies and associated ethical, legal and medical dilemmas. Barriers to treatment and

legal difficulties encountered in health seeking with regard to Indian health care system are elaborated. Reflections from the past concerning management guidelines across various countries, current scenario and implications for future management are also discussed.

Introduction

Human sexuality encompasses the sexual knowledge, beliefs, attitudes, values and behaviors of individuals. It deals with the anatomy, physiology and the biochemistry of the sexual response system. It focuses on roles, identity and personality. It also reflects individual thoughts, feelings, behaviors and relationships [1].

Healthy sexuality is a positive, dynamic and enriching part of being human. It is the sexual dimension of an individual's personality which underpins much of what a person is. It is the key to sexual health and sexual expression and also to an individual's overall health and wellbeing [1]. While sexuality is often seen merely in terms of sexual orientation, it is a much broader concept. It contributes to our self esteem, the way we relate to others, our feelings and our behaviors. It includes knowledge about reproductive and sexual health, and of oneself, opportunities for healthy sexual development and sexual experience, the capacity for intimacy, the ability to share relationships and to be comfortable with different expressions of sexuality including love, joy, caring, sensuality, passion, pleasure or celibacy [2].

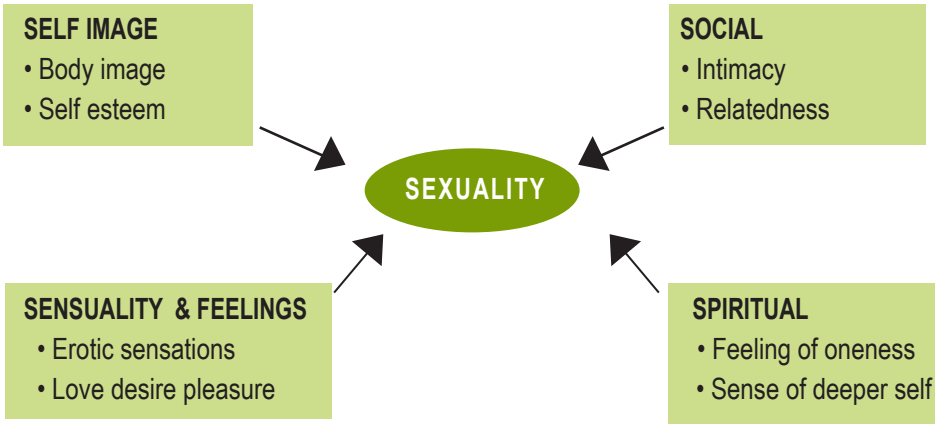

Fig. 1: Multiple dimensions of sexuality [3]

Sexual development across lifespan

Sexual development continues across the lifespan as a dynamic process with multiple facets. Studies in childhood sexuality are difficult because of inherent ethical and technical limitations. But available studies clearly demonstrate that children of all ages display behaviors or feelings that could be identified as sexual in nature. De Lamater & Friedrich indicated that human sexual development begins in infancy and certainly extends across the lifespan of humans [4]. Conclusively, human sexuality integrates both behavioral and biological

factors manifested across all phases of aging; childhood, adolescence, adulthood and old age. These developmental stages shape sexual attitudes, sexual identity and directly impact sexual behavior. While humans certainly share similarities in their sexual progression, it is further indicated that differences are also present.

Sex, gender and gender role: Concepts

Sex refers to a person's biological endowment for being categorized as male, female, or intersex. It includes sex chromosomes, gonads, internal reproductive organs and external genitalia as indicators of biological sex [5].

Gender describes psychological recognition of self as well as wish to be regarded by others as the social categories of male or female. It refers to the attitudes, feelings and behaviors that a person associates self with. It includes ones identity, sexual orientation and preferences [5].

Stoller first time defined 'Gender Identity' as a complex system of beliefs about oneself and a sense of one's masculinity or feminity. It refers to "one's sense of oneself as male, female or trans-gender" [6].

John Money gave the concept of 'Gender Role' for the first time and defined it as a set of feelings, assertions and behaviors that identified a person as being a boy or a girl from the contrasting conclusions one could have reached merely by considering their anatomical sex only. It refers to social and cultural role sanctioned to or expected from a particular gender [7].

'Gender Expression' refers to the "…way in which a person acts to communicate gender within a given culture; for example, in terms of clothing, communication patterns and interests". A person's gender expression may or may not be consistent with socially prescribed gender roles, and may or may not reflect his or her gender identity [5].

'Gender-Normative Behavior' refers to gender specific behavior that is compatible with cultural expectations [5].

Gender dysphoria and gender non-conformity: Different concepts (5)

'Gender Non-conformity' refers to gender behaviors viewed as incompatible with cultural expectations. It includes variations from the norm, different influences, associations & trajectories but may not be associated with dysphoria in all cases.

'Gender Dysphoria' refers to experience of distress felt due to discordance between internal sense of gender (gender identity) and physical sex (which generally matches the sex, assigned at birth).

Most people with gender non-conformity do not have gender dysphoria, although many people with gender dysphoria have gender non-conformity. Both frequently, but not always are associated with homosexual & bisexual orientation. But both are to a large extent associated with degree of mental health problems.

'Coming Out' refers to the process in which one acknowledges and accepts one's own sexual orientation. It also encompasses the process in which one discloses one's sexual orientation to others. The term 'Closeted' refers to a state of secrecy or cautious privacy regarding one's sexual orientation.

What is gender dysphoria?

Most people experience little doubt about their

gender, seeing themselves as either male or female. However, others experience an inconsistency with their physical sex and/or gender role. For children, this generally means that they think of themselves as or desire to be of the opposite sex. However, it is important to note that many people question the idea that male and female are fixed opposites. Theorists have suggested that it may be more appropriate to think of gender as lying on a continuum or having multiple categories. Others have proposed a position of gender transcendence, arguing that traits, behaviors, and roles should be divorced from gender [8]. Regardless, a desire to be of the opposite of their physical/assigned sex is a common experience for both girls and boys [9, 10]. Moreover, studies suggest that in western population, this is a frequent reason children are referred to school counselors [11], however, often goes undetected in India.

Gender dysphoria is much more common in children than in adults. However, the majority of children seem to outgrow it [9]. In children, the salient disjunction of assigned gender is with gender expression in play, clothing, and peer preference and in some also with primary sex characteristics. In adolescents, the secondary sex characteristics acquire increasing salience. Gender dysphoria remaining through adolescence usually persists long-term. However, most childhood gender dysphoria has not persisted (persistence rates of 1.5% to 37% by adolescence) in various clinical samples [8]. Instead, many gender dysphoric children become homosexual or bisexual but not transgender by adolescence/adulthood.

Since cross-gender behavior in childhood is very common, it may represent a normal part of development. Nonetheless, gender may cause problems or distress for affected children and their families. In such cases, a professional help may be needed to help children with any difficulties resulting from expressing their gender differently from their peers. Children with gender dysphoria may be more likely to have problems of anxiety and depressed mood than other children [12, 13]. It is not clear if these problems are the cause, or the result, or are unrelated to the gender dysphoria. Regardless, children and the families of children with gender dysphoria may benefit from psychological treatments aimed at helping them with any mood and anxiety related problems.

There are more boys than girls among the affected children, although this apparent asymmetry may well be due, in part, to the greater social acceptance of gender-atypical behavior in girls [9]. Gender dysphoria manifests a highly variable and plastic course because these patients' psychosexual development is not yet complete.

What is gender identity disorder?

Diagnostic and Statistical Manual of Mental Disorders, DSM-IV TR [14] outlines the criteria for childhood gender identity disorder (GID) as follows: (a) a continuing and strong identification with the opposite gender; (b) a continuing discomfort with one's current gender or gender role; (c) the gender dysphoria is not due to an intersex condition; and (d) the gender dysphoria causes a high degree of distress or impairment in the child's life. The final criterion is very important. A diagnosis of gender identity disorder requires evidence that the gender dysphoria leads to significant distress and/or life problems. There is nothing wrong or harmful about having traits and behaving in ways that have commonly been associated with the

other gender. Indeed, individuals who possess high levels of both 'Male' and 'Female' traits have been shown to be especially well-adjusted [15].

Although gender dysphoria has been viewed as a mental health issue in recent past, it was not always this way. Recorded history includes many descriptions of people, from a range of cultures, who did not fit into the simple categories of male or female. In some cases these people were highly regarded and viewed as holy by virtue of their insight into both female and male worlds such as the description of the character 'Shikhandi' in religious epic Mahabharata [16].

Gender identity disorders of childhood are only rarely (in 2.5% to 20% of cases) the initial manifestation of a trans-sexual development [14, 17]. Nonetheless, because of the severe social isolation that they cause, they are often associated with a considerable degree of emotional stress for the affected children (and their parents), as well as with a high psychiatric comorbidity, especially disturbances of affective and social behavior that require treatment. The presence of intersexual anomalies must be ruled out on clinical, genetic, and endocrinological grounds.

Gender dysphoric disorder of childhood [18]

Diagnosis requires marked incongruence ≥ 6 months between experienced/expressed & assigned gender including strong desire/ preference for 6 of following:

1. Strong desire to be or insistence one is the other gender (or some alternative) different from assigned one (mandatory characteristic)
2. Strong preference for cross-dressing in or simulating female attire (assigned boys); or only masculine clothing/resistance for wearing feminine clothing (assigned girls)
3. Strong preference for cross-gender roles in make-believe/fantasy play
4. Strong preference for toys, games, or activities stereotypically used/played by other gender
5. Strong preference for playmates of the other gender
6. Strong rejection of typically masculine toys/ games/activities & strong avoidance of rough-and-tumble play (assigned boys); or strong rejection of typically feminine toys, games, and activities (assigned girls)
7. Strong dislike of one's sexual anatomy
8. Strong desire for the primary and/or secondary sex characteristics that match one's experienced gender

Also: distress or impairment in social, school, or other important areas

Gender dysphoric disorder of adolescence [18]

For making the diagnosis, there must be marked incongruence ≥ 6 month between experienced/ expressed & assigned gender including 2 of following:

1. Marked incongruence between experienced/ expressed gender and primary and/or secondary sex characteristics (or anticipated ones in young adolescents)
2. Strong desire to get rid of primary and/or secondary sex characteristics because of marked incongruence with experienced/ expressed gender (or desire to prevent development anticipated secondary sex characteristics in young adolescents)
3. Strong desire for primary and/or secondary sex characteristics of other gender
4. Strong desire to be of the other gender (or an alternative one from assigned one)

5. Strong desire to be treated as the other gender (or an alternative one from assigned one)
6. Strong conviction that one has typical feelings & reactions of the other gender (or an alternative one from assigned one)

Also: distress or impairment in social, school, or other important areas

Most gender dysphoria in children is found to fade around the age of 10-13; on the other hand it may emerge around puberty or later and may require contra sex hormonal treatment[19, 20, 21].

Following are the predictors of persistence of childhood gender dysphoria into adolescence [20, 22, 23].

- Intensity of dysphoria & meeting criteria for formal diagnosis
- Cognitive cross-gender identification ("I am the other sex")
- Younger age of presentation
- Natal male sex
- Early social role transition (especially natal boys)

Etiology and pathogenesis

The development and continuation of gender identity disorders is held to be a multifactorial pathological process, in which individual psychological factors exert their effects in concert with biological, familial and sociocultural ones.

Different theoretical conceptions imply different complementary, not necessarily contradictory notions of the possible causes of GID. Thus, a generalization should be made with caution.

Neurobiological genetic research has not yet convincingly shown any predominant role for genetic or hormonal factors in the etiology of GID [13]. Some study findings originally suggested a possible effect of sex steroids in utero and an inadequate masculinization or defeminization of hypothalamic nuclei (Gender Role Centers) because of pathologically altered maternal hormone levels; these findings are now viewed more critically [24]. On the other hand, studies of gender identity in patients with various types of intersex syndrome (e.g. complete versus partial androgen receptor defects) have led to the formulation of a biological hypothesis for the etiology of gender identity disorders, in which these are caused by hormone resistance restricted to the brain [25,26]. Contrary to earlier assumptions, gender identity cannot be changed by external influences alone, i.e. attempts at so-called 'Re-education', even when these attempts are begun as early as the first year of life; this implies an early, somatic determination of gender identity. Moreover, because bodily and genital sensations exert a major effect on psychosexual and gender-identity development, one must assume that the overall process involves an interaction of biological and psychosocial factors [27].

In psychological theories, profound disturbance of the mother-child relationship is often postulated to be a causative factor [28]. The desire to belong to the opposite sex is held to be a compensatory pattern of response to trauma. In boys, it is said to represent an attempt to repair the defective relationship with the physically or emotionally absent primary attachment figure through fantasy; the boy tries to imitate his missing mother as the result of confusion between the two concepts of having a mother and being one [29]. In girls, the postulated motivation for gender switching is the child's need to protect herself

and her mother from a violent father by acquiring masculine strength for her. The maladaptive reactions can be seen as failed attempts to fulfill particular developmental tasks: separation from parents, establishment of an individual identity, and attainment of sexual maturity [30].

Identifying GID: Tools & strategies

Following guidelines and questionnaire can be utilized by clinicians for detection and intervention while dealing the patients with gender dysphoria.

Standardized questionnaires

1. Gender Identity Interview for Children (GIIC) [23]
2. Gender Identity Questionnaire for Children (GIQC) [31]
3. Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults (GIGDQAA) [32]

Guidelines

1. Fenway LGBT Guide [33]
2. WPATH SOC-7 [34]
3. AACAP LGBT Practice Parameter [35]

Differential diagnosis

Gender identity disorders are often the forerunner of a homosexual orientation. In adolescence, the main differential diagnoses are:

- Intersex condition or disorders of sexual development {46,XX (masculinisation of a female), 46,XY (undermasculinisation of a male), ovotesticular,46,XX testicular (XX sex reversal), and 46,XY complete gonadal dysgenesis (XY sex reversal) and most common (60-70%) congenital adrenal hyperplasia (CAH)} [36],
- Sexual maturation disorder (ICD-10 F66.0),
- Rejected (repressed or denied) ego-dystonic homosexual orientation (ICD-10 F66.1),
- Fetishistic transvestism (ICD-10 F65.1),
- Severe personality disorders,
- Less commonly psychotic disorders.

Before diagnosing the patient with gender dysphoric disorder, physical signs of intersex or endocrine status should also be carefully looked. Laboratory tests apart from complete physical examination might be necessary as a part of the physical work up to rule out above said disorders. Comorbid psychiatric conditions should be looked by mental health professionals as there is high rate of comorbid depressive and anxiety disorders, and they may not only increase the distress but also complicate the issue related to management.

The initial diagnosis must be made by a multidisciplinary team, where present, composed of a paediatric endocrinologist, geneticist, paediatric surgeon or urologist, and a psychiatrist. The timing of the disclosure of information to the patient is mostly adapted to the child's maturity and the social characteristics of the family.

Intervention: General principles

Anticipatory guidance, screening & treating for medical or mental illness is the mainstay of treatment. Long-term approach includes setting realistic expectations, help to manage stigma & monitor for psychosocial problems like abuse, homelessness & provide specific transgender health needs with appropriate consent [36].

Sometimes unintentionally health professionals and teams end up hurting patient's feelings by repeated examinations and using the patient as a unique case for teaching and training purposes and forgetting the holistic care. Here are some general principles of care [37, 38].

1. Provide medical and surgical care when dealing with a complication.
2. Recognize that what is normal for one individual may not be normal for others; care providers should not seek to force the patient into a social norm that may harm the patient.
3. Minimize the potential for the patient and family to feel ashamed, stigmatized, or overly obsessed with genital appearance; avoid the use of stigmatizing terminology and excessive medical photography; promote openness and positive connection with others, avoid 'parade of white coats' and repetitive genital examinations, especially measurements of genitalia.
4. Delay elective surgical and hormonal treatments until the patient can actively participate in decision-making about how his or her own body will look, feel, and function; when surgery and hormonal treatments are considered, health care professionals must ask themselves whether they are truly needed for the benefit of the child or are being offered to allay parental distress; mental health professionals can help assess this.
5. Respect parents by addressing their concerns and distress empathetically, honestly, and directly; if parents need mental health care, help them obtain it.
6. Directly address the child's psychosocial distress (if any) with the efforts of psychosocial professionals and peer support.
7. Always tell the truth to the family and the child; answer questions promptly and honestly, which includes being open about the patient's medical history and about clinical uncertainty where it exists.

Apart from psychiatric and medical management, this diagnosis is almost uncomparable in the complexity of its social, ethical and political ramifications. Management sometimes requires fine balancing between the concerns of the family who wants to cure their patient, while on the other hand is the person battling through myriad of emotions. Psychiatrists have wide role ranging from diagnosis, helping client realize his/her gender identity, informing about gender role expression and modes available, assessment of eligibility for hormonal or surgical therapies, making formal recommendations, documenting details, arranging for follow ups and at all stages to screen for mental health co-morbidity [39].

Current scientific controversies: Different treatment strategies

Two treatment strategies are available, first phase involving reversible hormonal therapy followed by irreversible hormonal therapy and surgery (sex reassignment surgery). Two approaches exist across the globe, one instituting early intervention with hormonal therapy and other supporting delaying treatment, till client attains maturity or legal age to participate in decision making process.

A review of the scientific literature reveals two different scientific positions leading to different approaches to treatment. Multiple longitudinal studies provide evidence that gender-atypical behavior in childhood often leads to a homosexual orientation in adulthood, but only in 2.5% to 20% of cases to a persistent gender identity disorder [13, 40]. Even among children who manifest a major degree of discomfort with their own sex, including an aversion to their own genitalia, only a minority go on to an irreversible

development of transsexualism. Irreversibility of the manifestations, however, is considered to be an indispensable requirement before the diagnosis of trans-sexualism can be made, or any body-altering treatments to be initiated. In England and Canada, in accordance with this view, hormonal treatment or surgery is not recommended until the patient's somatic and psychosexual development is complete [41].

In other countries, however, the opinion prevails that it is appropriate to use LHRH (luteinizing hormone-releasing hormone) analogues, which block gonadotropin secretion and secondarily inhibit the sex steroids, for diagnosis and treatment [42]. Using LHRH analogues is held to give the patient time to assess whether GID will persist, and to prevent the irreversible somatic changes corresponding to the sex of birth. This is supposed to bring relief and prevent psychiatric co-morbidity [43]. The guidelines of the British Royal College of Psychiatrists [44] and, those of the German Society for Child and Adolescent Psychiatry and Psychotherapy [45] generally recommend against treatment with hormones of the opposite sex before the patient's 16th birthday, yet they support the administration of sex-steroid inhibitors at much earlier ages in rare, individual cases. Physical and psychosexual development are already complete in some individuals by age 16, but most adolescents at this age are still in the process of establishing their sexual identity and the diagnostic and therapeutic approach should accompany this process rather than overwhelm it.

The pros and cons of early hormonal therapy [46, 47]

It is said that suppression of further somatosexual development rapidly alleviates the patient's sufferings. If puberty-blocking treatments and opposite-sex hormones are given early, then a sex-change operation performed later on in life will have a better cosmetic result. The patient's psychosocial and sexual functioning will improve, and psychiatric co-morbidity will be prevented.

Advocates of early hormonal intervention assert that the effects of puberty blocking treatment are totally reversible. But, this is true, however, only with respect to its physical effects, not with respect to the irreversible damage it does to the process of psychosexual development.

On the other hand, a treatment of this kind changes the individual's sexual experience both in fantasy and in behavior. It restricts sexual appetite and functionality and thereby prevents the individual from having age appropriate socio-sexual experiences that he or she can then evaluate in the framework of the diagnostic-therapeutic process. As a result, it becomes nearly impossible to discover the sexual preference structure and ultimate gender identity developing under the influence of the native sex hormones.

Experiences have shown that, in not a few cases, a strongly and resolutely asserted desire to change to the opposite sex becomes markedly neutralized over the course of time, and the individual later undergoes a homosexual 'Coming Out'. In view of this fact, it must be understood that early hormone therapy may interfere with the patient's development as a homosexual. This may not be in the interest of patients who, as a result of hormone therapy, can no longer have the decisive experiences that enable them to establish a homosexual identity. It is not known with any certainty at present how hormone therapy before the end of puberty might

affect the further development of gender identity, or to what extent it might even iatrogenically induce persistence of GID.

Children and adolescents generally lack the emotional and cognitive maturity needed to consent to a treatment that will have lifelong consequences. The fact must be taken into account that children with GID have an above average prevalence of deficient social skills, behavioral abnormalities & psychiatric co-morbidities and are therefore particularly susceptible to the temptation of a supposedly rapid solution to all of their problems.

Health care delivery in India: Limitations

If we discuss the ground realities of treatment in India, then except in a few government hospitals, sex reassignment surgery and other gender transition-related services are not available for free in tertiary level government hospitals. A study conducted in 2013 to assess the situation of gender transition-related health services for male to female (MtF) transgender people reported that [48, 49]:

- Lack of free sex reassignment surgery (SRS) in public hospitals and the prohibitive cost of SRS in private hospitals seem to be the key reasons behind why some hijras and other MtF trans people go to unqualified medical practitioners for surgery, resulting in post-operative complications.
- Unwillingness among qualified medical practitioners to prescribe hormone therapy and self-administration of female hormonal tablets among hijras and other MtF transgender people.
- Lack of national guidelines on gender transition services and ambiguous legal status of SRS makes even qualified medical practitioners hesitant to perform SRS.
- Limited expertise in India on SRS (especially penile construction or metaidioplasty for female to male (FtM) people. This means many FtM transgender persons wait for years before they undergo penile construction (phalloplasty).
- Limited knowledge among health care providers on the range of surgical and non-surgical options available for FtM transgender people.
- Lack of awareness about devices used by FtM transgender people such as binders, packers, urinating devices, and penile prosthesis.
- Limited knowledge about male hormone therapy among health care professionals. This means many FtM transgender people self-administer male hormones.

Ethical and legal difficulties in India for transsexuals

In India, transsexual individuals are often an outcast, as there are no specific guidelines for management and there is lot of ambiguity in law about their status. Recently in 2013, the Supreme Court of India quashing the earlier Delhi High Court judgement on Article 377 has again raised new ethical and legal debates. In India, still no state except Tamil Nadu has legal statutory provisions in place for changing transgender people's birth name and sex in the official gazette and official identity documents either after realizing their gender identity or sex reassignment [50]. However, a recent landmark judgment by Supreme Court in April 2014 has identified transgender as the third gender and has ordered government to make suitable changes in law. However, still there is a

long way to go for achieving a stigma free society [51].

Need for change in Indian health care delivery system

Following steps can be initiated for bringing requisite change in Indian health care delivery system:

- Improving access to and use of gender transition-related health services
- Reducing stigma
- To prepare policy guidelines for providing gender transition services in public hospitals
- To train and sensitize relevant health care providers on offering gender transition services
- Enabling better understanding and enhancing competency among health care providers in dealing with some transgender-specific health issues
- To make non-discriminatory policy/guidelines
- To prepare national clinical guidance document in line with the international WPATH (World Professional Association for Transgender Health) guidelines [34].

Following are the suggestions for what can be addressed in the national guidelines/standards of care for gender transition of transgender people in India:

1. Sensitization programmes for health professionals
2. Summary of current diagnostic guidelines ICD-10/DSM-5 to be made available to all clinicians
3. Defining role and competency of mental health professionals working with transsexual, transgender and gender non-conforming people
4. Psychological assessment and psychosocial support needed for transgender people and their family/friends/partners
5. Relationship of mental health professionals with hormone-prescribing physicians, surgeons, and other health professionals to be defined
6. Hormone therapy (informed consent, regimens, follow-up care) to be regulated
7. Surgery and pre requisites and follow up criteria to be laid down
8. Linkages (psychosocial support services, social welfare schemes and support in terms of legal name/sex change) and referral services
9. Age criteria for decision making for treatment to be specified

Conclusion

There is a need to understand developmental perspective of evolving gender roles across childhood and adolescence. Early identification of gender dysphoria, holistic assessment of special physical and mental health needs of patient and psychosocial needs of family. The guiding principle for the treatment of children with gender identity disorder is to strengthen patient's feeling of belonging to their gender identity without placing a negative value on his or her atypical gender role behavior. The child's parents, and usually the school teachers should also be involved in the treatment and any co morbid psychiatric disorder should be effectively treated. Adolescents should be treated in a diagnostic and therapeutic process that is open to multiple outcomes, utilizing the concepts of adolescent psychiatry and sexual medicine. This will enable the affected adolescent to resolve one's own identity conflicts. The treating physician should assess the degree of

persistence of the patient's desire for a gender transformation while paying special attention to other unresolved developmental tasks and/or conflicts aside from the specific problem of GID. The diagnosis of a transsexual, i.e., irreversible GID should be made only when the individual's psychosexual development is complete and after his or her sexual preference structure has been elucidated clearly. A further prerequisite of it, being free from any influence from extraneous hormones should be ensured. There is a need for bringing appropriate changes in health care system to make services accessible and suitable for needs of transgender people. Need to bring legal and social reforms for acceptance of these individuals in society and helping them attain their full potential is also important.

References

1. Canadian Guidelines for Sexual Health Education. Public Health Agency of Canada, Ministry of Health 2003.www.sexualityandu.ca>uploads>files[Last accessed on 11.11.2015]
2. Sheffield Centre for HIV & Sexual Health. Doing It Practical Strategies for Sexual Health Promotion 2003. Sheffield. www. sheffhiv. demon. co. uk.[Last accessed on 28.08.2015]
3. Sense & Sexuality: A Support Pack for Addressing the Issue of Sexual Health with Young People in Youth Work Settings. National Youth Council of Ireland 2004.
4. DeLamater J, Friedrich WN. Human sexual development. Journal of Sex Research. 2002;39(1):10-4.
5. Institute of Medicine (US), Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities.The Guidelines for Psychological Practice with Lesbian, Gay, and Bisexual Clients, adopted by the APA Council of Representatives, February 18-20, 2011.
6. Stoller RJ. Sex and Gender: On the development of homosexuality. New Haven, Connecticut: Yale University Press;1987.
7. Money J. The concept of gender identity disorder in childhood and adolescence after 39 years. J Sex Marital Ther. 1994;20163-77.
8. Reynolds M, Herbenick DL, Bancroft JH. The nature of childhood sexual experiences: Two studies 50 years apart. In J. Bancroft (Ed.), Sexual Development in Childhood. Bloomington, IN: Indiana University Press 2003.
9. Bailey JM, Zucker KJ. Childhood sex-typed behavior and sexual orientation: A conceptual analysis and quantitative review. Developmental Psychology. 1995;31:43-55.
10. Dunne MP, Bailey JM, Kirk KM, Martin NG. The subtlety of sexatypicality. Archives of Sexual Behavior. 2000; 29:549-65.
11. Haldeman D. Gender atypical youth: Clinical and social issues. The School Psychology Review. 2000;29:216-22.
12. Martin KA. Transsexualism: Clinical guide to gender identity disorder. Curr Psychiatry. 2007;6:81-91.
13. Zucker KJ, Bradley SJ. Gender identity disorder and psychosexual problems in children and adolescents. New York: Guilford; 1995.
14. American Psychiatrist Association. Diagnostic and Statstical Manual of Mental Disorders-Text Revision (DSM IV TR) 4TH ed. Wahington DC: APA; 2000.
15. Bem SL. Sex-role adaptability: One consequence of psychological androgyny. Journal of Personality and Social Psychology.1975;31:634-643.
16. Ganguly KM. Mahabharata. Book 10: Sauptika Parva section 8.2003.
17. World Health Organization. International Classification of Diseases,Clinical Description and Diagnostic Guidelines. 10th ed. Geneva: World Health Organization;1992.
18. American Psychiatrist Association. Diagnostic and Statistical Manual of Mental Disorders – 5thEdition (DSM 5). Wahington DC: APA;2014.
19. Steensma TD, Biemond R, De Boer F, Cohen-Kettenis PT. Desisting and persisting gender dysphoria after childhood: a qualitative follow-up study. Clin Child Psychol Psychiatry. 2011; 16(4):499-516.
20. Steensma TD. Factors associated with desistence and persistence of childhood gender dysphoria: A quantitative follow-up study. Journal of the American Academy of Child & Adolescent Psychiatry. 2013;52.6:582-90.

21. Steensma TD, Cohen-Kettenis PT. Gender transitioning before puberty. Arch Sex Behav. 2011; 40:649-650.
22. Wallien MSC, Cohen KPT. Psychosexual outcome of gender dysphoric children. J Am Acad Child Adolesc Psychiatry. 2008;47:1413–23.
23. Wallien MS, Quilty LC, Steensma TD. Cross-national replication of the Gender Identity Interview for Children. J Person Assess. 2009;91:545-552.
24. Wallien MS, Zucker KJ, Steensma TD, Cohen-Kettenis PT. 2D:4D finger-length ratios in children and adults with gender identity disorder. Horm Behav. 2008;54: 450-4.
25. Hines M, Ahmed SF, Hughes IA: Psychological outcomes and gender related development in complete androgen insensitivity syndrome. Arch Sex Behav. 2003; 32: 93–101.
26. Wisniewski AB, Migeon CJ, Meyer-Bahlburg HF. Complete androgen insensitivity syndrome: long-term medical, surgical, and psychosexual outcome. J Clin Endocrinol Metab. 2000; 85: 2664–9.
27. Zhou JN, Hofman MA, Gooren LJ, Swaab DF. A sex difference in the human brain and its relation to transsexuality. Nature. 1995; 378:68–70.
28. Meyer JK. The theory of gender identity disorders. J Am Psychoanal. Assoc. 1982; 30: 381–418.
29. Loeb LR. Analysis of the transference neurosis in a child with transsexual symptoms. J Am Psychoanal Ass. 1992; 40: 587–605.
30. Gilmore K. Gender identity disorder in a girl: insights from adoption.J Am Psychoanal Ass. 1995; 43: 39–59.
31. Johnson LL, Bradley SJ, Birkenfeld-Adams AS. A parent- report gender identity questionnaire for children. Arch Sex Behav. 2004;33:105-116.
32. Singh D, Deogracias JJ, Johnson LL. The Gender Identity/ Gender Dysphoria Questionnaire for Adolescents and Adults: further validity evidence. J Sex Res. 2010;47:49-58.
33. Leibowitz S, Adelson S, Telingator C. Gender Nonconformity and Gender Discordance in Childhood and Adolescence: Developmental Considerations and the Clinical Approach. In: HJ Makadon, KH Mayer, J Potter, and H Goldhammer (Eds.), The Fenway Guide to Lesbian, Gay, Bisexual and Transgender Health, 2nd Edition (American College of Physicians).
34. Coleman E, Bockting W, Botzer M, Cohen-Kettenis P, DeCuypere G, Feldman J, et al. Standards of care for health of transexuals;, transgender and gender nonconforming people. World professional association for transgender health (WPATH) SOC-7 2012.
35. Adelson SL and the American Academy of Child and Adolescent Psychiatry (AACAP) Committee on Quality Issues (CQI): Walter HJ, Bukstein OG, Bellonci C, Benson RS, Chrisman A, Farchione TR, e al.Practice Parameter on Gay, Lesbian or Bisexual Sexual Orientation, Gender-Nonconformity, and Gender Discordance in Children and Adolescents. Journal of the American Academy of Child and Adolescent Psychiatry. 2012; Vol. 51 (9) : 957-974.
36. Izquierdo G, Glassberg KI. Gender assignment and gender identityin patients with ambiguous genitalia. Urology. 1993;42:232–42.
37. Stewart M. Towards a global definition of patient centred care. BMJ. 2001 Feb 24;322(7284):444-5. Available online at bmj.bmjjournals.com/cgi/content/full/322/7284/444.[Last accessed on 11/ 11/ 2015]
38. American Academy of Pediatrics Committee on Bioethics. Informed consent, parental permission and assent in pediatric practice. Pediatrics. 1995;95(2):314-7. Available online at aappolicy.aappublications.org/cgi/content/abstract/pediatrics;95/2/314. [Last accessed on 11/11/2015]
39. Kalra G. Psychiatrists role in ''coming out'' process: context and controversies post 377. Indian J Psychiatry 2012;54:69-72.
40. Drummond KD, Bradley SJ, Peterson-Badali M, Zucker KJ. A followup study of girls with gender identity disorder. Developmental Psychology. 2008; 44: 34–45.
41. Canadian Professional Association for Transgender Health (CPATH). www.cpath.ca [Last accessed on 11/11/2015]
42. Cohen-Kettenis PT, Van Goozen SH. Pubertal delay as an aid in diagnosis and treatment of a transsexual adolescent. Eur Child Adolesc Psychiatry. 1998; 7: 246–8.
43. Cohen-Kettenis PT, Van Goozen SH. Sex reassignment of adolescent transsexuals: a follow-up study. J Am Acad Child Adolesc Psychiatry. 1997; 36: 263–7.
44. Good practice guideline for the assessment and treatment of adultsith gender dysphoria. College report CR18, October 2013. Royal College of Psychiatrists. Available online at: www.rcpsych.ac.uk/publications/collegereports.aspx. [Last accessed on 11/11/2015]
45. Meyenburg B. Störungen der Geschlechtsidentität (F64) sowie der sexuellenEntwicklung und Orientierung

(F66). Leitlinien der DeutschenGesellschaftfür Kinder- und Jugendpsychiatrie und –psychotherapie. 2007; 167–78.
46. Cohen-Kettenis PT, Gooren LJ. Transsexualism: a review of etiology, diagnosis and treatment. J Psychosom Res. 1999; 46: 315–33.
47. Korte A, Goecker D, Krude H, Lehmkuhl U. Gender Identity Disorders in Childhood and Adolescence: Currently Debated Concepts and Treatment Strategies. DtschArztebllnt. 2008; 105(48): 834–41.
48. India HIV/AIDS Alliance .Issue brief: Transforming Identity: Access to Gender Transition Services for Male-to-Female Transgender People in India. New Delhi: India HIV/AIDS Alliance.2013.http://www.allianceindia.org/publications/38657-issuebrief_feminisation_WEB.pdf [Last accessed on 11/11/2015]
49. Chakrapani V, Babu P, Ebenezer T. Hijras in sex work face discrimination in the Indian health-care system. Research for Sex Work. 2004; 12-14. http://www.nswp.org/resource/research-sex-work-7 [Last accessed on 11/11/2015]
50. Chakrapani V, Narain A. Legal recognition of gender identity of transgender people in India: Current situation and potential options. Policy brief: UNDP India 2012 . Available online at http://www.undp.org/content/dam/india/docs/HIV_and_development/legal-recognition-of gender identity of transgender-people-in-in.pdf [Last accessed on 11/11/2015]
51. Reportable NALSA v. Uol: The Supreme Court on transsexuals and the future of Koushal v. Naz. Writ petition (Civil) No. 604 of 2013. Available online at www.supremecourtofindia.nic.in>outoday. [Last accessed on 11/11/2015]

Sexual Addiction And Its Management: A Review

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Abstract

Sexual addiction, otherwise known as compulsive sexual behaviour, is an emerging psychiatric disorder that has significant medical and psychiatric consequences. Little data exists to explain the biological, psychological, and social risk factors that contribute to this condition, though significant number of patients are seen in communities and psychiatric hospitals. This article reviews the clinical features of compulsive sexual behavior and summarizes the current evidence for psychological and pharmacological treatment.

Defining sexual addiction

The DSM-IV and DSM 5 does not include sexual addiction behavior as a separate disorder with formal criteria. There are 12 listed sexual disorders and they are divided into disorders of sexual dysfunctions, paraphilias, and gender identity disorders [1]. Among these disorders, there is no mention of repetitive, continued sexual behaviors

that cause clinical distress and impairment. In fact, the only place where sexual addiction might be included is within the context of sexual disorder, not otherwise specified or as part of a manic episode. In other words, hypersexuality, sexual addiction, or compulsive sexual behaviors are terms that are not found within the diagnostic criteria.

The main reasons for lack of formal criteria are absence of ample research and an agreed-upon terminology. This is due, in part, to the heterogeneous presentation of sexual addiction behaviors [2]. For instance, some patients present with clinical features that resemble an addictive disorder i.e., continued engagement in the behavior despite physical or psychological consequences, loss of control, and preoccupation with the behavior. Others will demonstrate elements of impulse control disorder, namely irresistible urges and impulses, both physically and mentally, to act out sexually without regard to the consequences. Finally, there are patients who demonstrate sexual obsessions and compulsions to act out sexually in a way that resembles obsessive compulsive disorders.

Sexual drive can be seen as similar to other biological drives, such as sleep and appetite. States of hypersexuality, induced by substances of abuse, mania, medications (e.g. dopamine agonists), or even other medical conditions (e.g. frontal-lobe tumors) can induce episodes of impulsive and excessive sexual behaviors [3]. If the primary conditions are treated, the sexual behaviors return to normalcy in terms of frequency and intensity.

Epidemiology

There have been no studies documenting the past-year or lifetime prevalence of compulsive sexual behaviors in the general population. Regional and local surveys suggest that approximately five percent of the general population may meet criteria for a compulsive sexual disorder (using criteria that are similar to substance use disorders) [4]. The reasons, why reliable epidemiological data are lacking is the inconsistency in defining criteria for sexual addiction and also lack of researchers committed to documenting the extent of this problem. Many people also don't think this as a problem. Men appear to outnumber women with sexual addiction disorders [4]. Majority of sexual addiction cases have comorbidity like substance use disorders, impulse control disorders [5,6].

Etiology of sex addiction

There is no single biological cause that has been identified to explain the origins and maintenance of sexual addiction disorder. Neuroimaging studies show similar results for the patients with sexual addiction, substance addiction and other behavioral addictions. Hypersexual behaviors have been reported in patients with frontal lobe lesion, tumors, and in those with neurological conditions that involve temporal lobes and midbrain areas such as seizure disorders, Huntington's disease, and dementia [7,8,9].

Neurotransmitter studies in sexual addiction have focused on the monoamines, namely serotonin, dopamine, and norepinephrine [10]. Still there is lack of sufficient research in clinical populations. Normal sexual functioning involves all of these monoamines as evidenced by selective serotonin reuptake inhibitor (SSRI) induced sexual dysfunction and increased sexuality is observed among those on stimulants. Cases of hypersexual behavior have also been shown to be induced by medications for Parkinson's disease,

implicating dopamine systems in sexual addiction behaviors [11].

Sex hormones are also a critical component to sexual addiction. Testosterone levels have been correlated to sexual functioning [12]. The reward and pleasure are modulated by these hormones through facilitating or enhancing the response to sex and the desire for sex.

Clinical features of sex addiction

Sexual addiction behaviors can present in a variety of forms and degrees of severity, like that of substance use disorders, mood disorders, or impulse-control disorders. Many a times, it may not be the primary reason for seeking treatment and the symptoms are not revealed unless inquired about. The individual is excessively preoccupied in sexual activities, excessive and intrusive thought or image about sexual activity despite the negative consequences created by these activities. This is like the same phenomenon seen in substance use and impulse control disorders. Psychologically, sexual behaviors serve to escape emotional or physical pain or are a way of dealing with life stressors [13]. The irony is that the sexual behaviors become the primary way of coping and handling problems that, in turn, creates a cycle of more problems and increasing desperation, shame, and preoccupation. The patient may develop secondary depressive symptoms. These symptoms can be categorized into paraphilic and nonparaphilic subtypes.

Paraphilic behaviors refer to behaviors that are considered to be outside of the conventional range of sexual behaviors. Paraphilias recognized in the DSM IV include exhibitionism, voyeurism, pedophilia, sexual masochism, sexual sadism, transvestic fetishism, fetishism, and frotteurism [1]. There are many other forms of paraphilias that are not listed in DSM-IV (e.g., gerontophilia, necrophilia, zoophilia) that exist but have not been yet recognized as clinical disorders. Paraphilias usually begin in late adolescence and peak in the mid- twenties [14].

Non-paraphilic behaviors represent engagement in commonly available sexual practices, such as attending strip clubs, compulsive masturbation, paying for sex through prostitution, excessive use of pornography, and repeated engagement in extramarital affairs. The onset, clinical course, and male predominance are fairly similar to paraphilic disorders [15].

A significant consequence of sexual addiction is the loss of time and productivity. It is not uncommon for patients to spend large amounts of time viewing pornography or cruising (also called mongering) for sexual gratification. Financial losses can mount quickly. In addition, there may be a long list of legal consequences, including arrest for solicitation and engaging in paraphilic acts that are illegal. One look at recent news headlines is likely to reveal several stories focusing on illegal sexual activities or behaviors that jeopardize someone's livelihood or wellbeing.

The psychological consequences are also numerous. Effects on the family and interpersonal relationships can be profound. The deception, secrecy, and violations of trust that occur with sexual addiction may shatter intimacy and personal connections. The result is a warped intimacy that often leads to separation and divorce and, in turn, puts any future healthy relationship in doubt.

Clinical assessment measures

Patrick Carnes, one of the pioneers in the field of

sexual addiction research, developed the 'Sexual Addiction Screening Test', which is a 25-item, self-report symptom checklist that can be used to identify those at risk to develop compulsive sexual behaviors [16]. The 'Sexual Addiction Screening Test' has also been modified for women and for internet sexual behaviors. Kafka has suggested a behavioral screening test 'Total Sexual Outlet' in which a total of seven sexual orgasms per week, regardless of how they are achieved, could represent at-risk behavior and requires further clinical exploration [17].

Psychological treatment

Inpatient and outpatient treatment programs for sexual addiction usually focus on helping to identify core triggers and beliefs about sexual addiction and to develop healthier choices and coping skills to minimize urges and deal with the preoccupation with sexual activities.

Motivational interventional therapy, cognitive behavior therapy, and couples and family therapy have been shown to be potent interventions for several forms of drug and behavioral addiction [18,19,20]. Behavioral therapies may be associated with reductions in substance use and may have effects on the neural systems that are involved in cognitive control, impulsivity, motivation and attention [21]. These effects may also benefit in patients with sexual addiction.

Group therapy is an adjunct to therapeutic possibility [22]. Family therapy and couples therapy may re-establish the trust, diminish shame/guilt, and establish a healthy sexual relationship between the partners [23].

In USA, 'Sexual Addicts Anonymous', 'Sex and Love Addicts Anonymous', and 'Sexaholics Anonymous' are used for the treatment of sexual addiction [24]. The basic principles of this therapy is based on twelve steps and twelve traditions of 'Alcoholics Anonymous'.

Pharmacotherapy

There is no Food and Drug Administration (FDA) approved medications for sexual addiction behaviors in USA. Evidence only comes from preliminary case reports and open-label trials [12]. Various classes of medications have been tried, including antidepressants, mood stabilizers, antipsychotics, and antiandrogens. The rationales for these drugs are based on clinical phenomenology and symptoms. In addition to SSRIs, naltrexone, an opiate antagonist, has been evaluated in the treatment of sexual addiction [25]. The rationale for using this medication is based on previous work in substance abuse populations and pathological gamblers, where the intent is to reduce the cravings and urges by blocking the euphoria associated with the behavior. In an open-label trial of naltrexone with adolescent sexual offenders, 15 out of 21 patients noted reductions in sexual impulses and arousal [26]. There have also been studies examining the efficacy of intramuscular naltrexone in this clinical population.

Mood stabilizers, such as valproic acid, carbamazepine and lithium, appear promising in the treatment of patients with bipolar disorder and impulsive disorder [27]. Whether this class of medications has an independent effect on reducing sexual addiction in patients without comorbid bipolar disorder remains to be seen. Other medications, such as topiramate and nefazadone, have also been tried [28].

Chemical castration by using

antiandrogens, such as medroxyprogesterone acetate (300–500mg per week, intramuscularly) or cyproterone acetate (300–600mg per week, intramuscularly), lower serum testosterone level and diminish sexual drive and desire [29].

A more drastic, surgical intervention (castration) has been shown to reduce recidivism in sexual offenders by theoretically lowering testosterone levels to reduce urges and cravings.

Conclusion and future directions

Sexual addiction disorder is the extreme end of a wide range of sexual experiences. These behaviors can present in a variety of ways and have different subtypes, severities, and clinical courses. Future research can enhance early identification and treatment of these disorders by developing clinical screening guidelines, by identifying the warning signs and by assessing the vulnerable patients and common comorbidity.

References

1. American Psychiatric Association.Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington.
2. Gold SN, Heffner CL. Sexual addiction: Many conceptions, minimal data. Clin Psychol Rev. 1998;18:367–81.
3. Weintraub D, Potenza MN. Impulse control disorders in Parkinson's disease. Curr Neurol Neurosci Rep. 2006;6:302–6.
4. Coleman E, Raymond N, Mc Bean A. Assessment and treatment of compulsive sexual behavior. Minn Med. 2003; 86:42–7.
5. Grant JE, Kim SW. Comorbidity of impulse control disorders in pathological gamblers. Acta Psychiatr Scand. 2003;108:203–7.
6. Grant JE, Levine L, Kim D, et al. Impulse control disorders in adult psychiatric inpatients. Am J Psychiatry. 2005;162:2184–8.
7. Higgins A, Barker P, Begley CM. Hypersexuality and dementia: Dealing with inappropriate sexual expression. Br J Nurs. 2004;13:1330–4.
8. Mendez MF, O'Connor SM, Lim GT. Hypersexuality after right pallidotomy for Parkinson's disease. J Neuropsychiatry Clin Neurosci. 2004;16:37–40.
9. Baird AD, Wilson SJ, Bladin PF, et al. Hypersexuality after temporal lobe resection. Epilepsy Behav. 2002;3:173–81.
10. Kafka MP. The monoamine hypothesis for the pathophysiology of paraphilic disorders: an update. Ann N Y Acad Sci. 2003;989:86–94; discussion 144–53.
11. Riley DE. Reversible transvestic fetishism in a man with Parkinson's disease treated with selegiline. Clin Neuropharmacol. 2002;25:234–7.
12. Bradford JM.The neurobiology, neuropharmacology, and pharmacological treatment of the paraphilias and compulsive sexual behaviour. Can J Psychiatry. 2001;46:26–34.
13. Kafka MP, Prentky RA. Compulsive sexual behavior characteristics. Am J Psychiatry. 1997;154:1632.
14. Black DW, Kehrberg LL, Flumerfelt DL, et al. Characteristics of 36 subjects reporting compulsive sexual behavior. Am J Psychiatry. 1997;154:243–9.
15. Allen A. Hollander E, Stein DJ (eds). Clinical Manual of Impulse-Control Disorders. Arlington, VA: American Psychiatric Publishing. 2006.
16. Carnes P. Sexual addiction screening test. Tenn Nurse. 1991;54:29.
17. Kafka M. Hypersexual desire in males: An operational definition and clinical implications for males with paraphilias and paraphilia-related disorders. Arch Sex Behav. 1997;25:505–26.
18. Carroll KM, Onken LS.Behavioral therapies for drug abuse. Am J Psychiatry. 2005; 162(8): 1452-60.
19. Orzack MH, Voluse AC, Wolf D, Hennen J. An ongoing study of group treatment for men involved in problematic Internet-enabled sexual behavior. Cyberpsychol Behav. 2006; 9(3): 348-60.
20. Young KS. Cognitive behavior therapy with Internet addicts: treatment outcomes and implications. Cyberpsychol Behav. 2007; 10(5): 671-9.
21. DeVito EE, Worhunsky PD, Carroll KM, Rounsaville BJ, Kober H, Potenza MN. A preliminary study of the neural effects of behavioral therapy for substance use disorders. Drug Alcohol Depend. 2012; 122(3): 228-35.

22. Southern S. Treatment of compulsive cybersex behavior. Psychiatr Clin North Am. 2008; 31(4): 697-712.
23. Bird MH. Sexual addiction and marriage and family therapy: Facilitating individual and relationship healing through couple therapy. J Marital Fam Ther. 2006;32:297–311.
24. Schneider JP, Irons RR. Assessment and treatment of addictive sexual disorders: relevance for chemical dependency relapse. Subst Use Misuse. 2001;36:1795–820.
25. Grant JE, Kim SW. A case of kleptomania and compulsive sexual behavior treated with naltrexone. Ann Clin Psychiatry. 2001;13:229–31.
26. Ryback RS.Naltrexone in the treatment of adolescent sexual offenders. J Clin Psychiatry. 2004;65:982-6.
27. Nishimura H, Suzuki M, Kazahara H, et al. Efficacy of lithium carbonate on public and compulsive masturbation: a female case with mild mental disability. Psychiatry Clin Neurosci. 1997;51:411–3.
28. Coleman E, Gratzer T, Nesvacil L, et al. Nefazodone and the treatment of nonparaphilic compulsive sexual behavior: a retrospective study. J Clin Psychiatry. 2000;61:282–4.
29. Rosler A, Witztum E. Pharmacotherapy of paraphilias in the next millennium. Behav Sci Law. 2000;18:43–56.

Our Vision

Harmonious existence between male and female leading the mankind towards ultimate bliss

Our Goals

INDIAN INSTITUTE OF SEXOLOGY BHUBANESWAR (IISB)

- *Aims to facilitate the integration of knowledge and expertise across various disciplines like medicine, psychology, sociology, law and ethics for greater understanding of complexities of human sexuality*
- *Aims to adequately address the individual sexual problems and social issues*

Objectives

- *To bring experts of different disciplines to a common platform for sharing of knowledge and views on human sexuality*
- *To promote research on human sexuality*
- *To impart training on 'Sexology' and strengthen the discipline of 'Sexual Medicine'*
- *To encourage medical professionals to choose 'Sexual Medicine' as a career*
- *To create public awareness on human sexuality and gender issues*
- *To advocate any social change for betterment of mankind*

Masturbation : Ancient Indian Perspectives

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Abstract

Masturbation is a sexual act practiced by one on oneself in order to achieve sexual satisfaction. Moderate masturbation can actually render positive effects like reducing stress and anxiety. Masturbation improves cardiovascular health and lowers the risk of type-2 diabetes and elevates mood. Masturbation in young men often is performed when there is a psychological need for emotional fulfillment. But this can set a pattern that carries over into adulthood and may lead to chronic excessive masturbation. This excessive masturbation and the resulting problems can create further psychological problems. One should maintain a balance between suppressing sexual urges and excessive masturbation.

Introduction

Ayurveda and the modern science are of the view that masturbation is a natural urge and a sexual act. It should neither be suppressed nor should one get addicted to it. It should be practiced in

a controlled manner. But, Indian philosophies including yoga contradict it and advocate for celibacy.

'The Manu Smriti' or 'Laws of Manu' is a very ancient text which has been the source for Hindu laws and social customs for thousands of years. It says that desire is never extinguished by the enjoyment of desired objects; it only grows stronger like a fire fed with clarified butter. If one person should obtain all those sensual enjoyments and another should renounce them all, the renunciation of all pleasure is far better than the attainment of them. Those organs which are strongly attached to sensual pleasures cannot so effectually be restrained by abstinence from enjoyments as by true knowledge[1].

View of Ayurveda

Masturbation (Hasta maithuna) like all natural urges, should not be suppressed, according to Ayurveda. However, over-indulgence in masturbation in combination with unhealthy aspects of our personality can become a cause of increased suffering; over a lifetime masturbation can be a leaky faucet through which our limited life force essence (Ojas) and our mental, emotional and physical resources, can drain.

Emotional pain and masturbation

Using masturbation as escape from, or distorting it with emotional pain, is (mithyāyoga) wrong utilization, according to Ayurveda. Masturbating addictively is (atiyoga) excessive utilization. These are major behavioural causes of endogenous diseases as stated in the Charaka Samhitā, as they confuse and disrupt the balance of our internal natural resources.

Dhātu Kshaya, Mithyāyoga (wrong utilization) and Atiyoga (excessive utilization) can precipitate loss of libido, a condition from which recovery is difficult, due to the subtlety and complexity of the resources involved. Even though we feel like our libido has an infinite supply (due to the intensity of our desire and attachment), this is actually not the case, especially as we age. As yoga warns that the number of our breaths is limited, Ayurveda teaches us that libido and sexual resources are in fact finite.

Vājīkarana therapy and Rasāyana therapy are methods Ayurveda provides that reverse the deep shut-off of energy and subsequent spread of numbness, which depletes our libido, and the Dhātus.The Dhātus are key physiological entities which comprise both metabolic energy, and its products. Once their depletion and stagnancy (Dhātu Kshaya) occurs, a complete lifestyle change is guaranteed either by the rigors of the healing process or by the suffering created by illnesses.

In Ayurveda text Charak Samhita, Sutrasthana, Chapter 7, Sutra 3-4, there is description of "Non-Suppression of Natural Urges" in detail.One should not suppress the natural urges relating to urine, faeces, semen, flatus, vomiting, sneezing, eructation, yawning, hunger, thirst, tears, sleep and breathing caused by over exertion. For living a normal healthy life, it is necessary that the needs of these natural urges are satisfied instantaneously.

In Charak Samhita, Chikitsasthana, Chapter 2, Sutra 39, it is mentioned that there is no fragrance in a bud. Fragrance appears only when the flower blossoms. Similarl phenomenon takes place in the case of semen of the living beings. As the boy becomes adolescent the desire to masturbate arises which is quite natural [1].

In Sutra 40, it is mentioned that person desirous of longevity should not enter into sexual activities before the age of sixteen years. Similarly in Sutra 41 & 42 it is mentioned that a young boy of tender age does not possess all the tissue

elements in their matured form.If it enters into sex act, his body gets dried up like a pond having little water. While describing the undesirability of sex act for a young boy, the illustration of a pond has been cited. This indicates that he has the power to regain semen after some time [1].

In Charak Samhita, Chikitsasthana, Chapter 2, Sutra 41 & 42 it is mentioned that the entire sugarcane plant is pervaded with its juice. Ghee is available in the whole of curd and oil is available in all parts of the sesame seed. Similarly semen pervades the entire body which has the sensation of touch. As water comes out of a wet cloth when squeezed, similarly, the semen trickles out from its site during sex act (chesta) and because of passionate attachment (sankalpa) and physical pressure (pidana). To explain the process of ejaculation of semen, the illustration of a cloth has been cited. Water comes out of the wet cloth by squeezing. By this process the cloth itself remain intact and it does not get worn out. Similarly, by ejaculation of semen, the body of the man does not get decayed [2].

View of Yoga

Yoga is of the view that sexual desire is the most powerful among all desires which should be controlled.

A quote from the Yogavasishtha (5.52.21) says -

कुरङ्गालिपतङ्गेभमीनास्त्वेकैकशो हताः ।
सर्वैर्युक्तैरनर्थैस्तु व्याप्तस्यान्न कुतः सुखम् ।

Meaning: The deer, elephant, moth, fishes, and bees die through their attraction to their senses of sound, touch, form, taste and odor respectively. But if human beings are afflicted with all the five senses combined together, then where is true bliss to them? During sexual activities people are attracted to all their senses of sound, touch, form, taste and odor. So sexual desire is the most powerful desires and should be controlled. True bliss can never be achieved by doing sexual activities [3, 4].

Since man has intense sexual desire the Manusmruti (2.215) says -

मात्रा स्वस्रा दुहित्रा वा न विविक्तासनो भवेत् ।
बलवानिन्द्रियग्रामो विद्वांसमपि कर्षति ।।

Meaning: A man should never sleep on the same bed or sit on the same seat along with his mother, sister or daughter because attraction of the sense organs is so strong that it could drive even a great scholar towards them [5,6].

सुगंधो योगिनो देहे जायते बिंदुधारणात् ।।
यावद् बिंदुः स्थिरो देहे तावत्कालभयं कुतः ।।१।।
एवं संरक्षयेद् बिंदुं मृत्युं जयति योगवित् ।।
मरणं बिंदुपातेन जीवनं बिंदुधारणात् ।।२।। – योगप्रदीपिका

Meaning: If the semen remains constant then strength of the body builds up, steadiness is achieved and there is no fear in life. Hence yogis conserve semen and win over death. Seminal loss means death and its conservation is the best possible way of attaining immortality [7,8].

There is a saying that one will acquire control over sexual desire by experiencing sexual pleasure. This is unreasonable.

न जातु कामः कामानामुपभोगेन शाम्यति ।
हविषा कृष्णवर्त्मेव भूय एवाभिवर्धते ।। – श्रीमद्भागवत ९.१९.१४

Meaning: According to this quote, from Shrimadbhagvat (9:19:14) if one continues to obtain gratification instead of the desire decreasing, it keeps increasing just like a fire which burns even more brilliantly after pouring clarified butter (ghee) into it [9].

Brahmacharya is derived from two words Brahman towards Brahman and charya, to walk. Thus it means going from happiness towards

bliss, because Brahman is blissful. In the literal sense celibacy is applicable to all seekers, but conventionally it refers to a seeker who does spiritual practice avoiding the experience of sexual pleasure, since adolescence.

When defining brahmacharya a quote states that

'ब्रह्मचर्याणां सर्वावस्थासु मनोवाक्कायकर्मभिः सर्वत्र मैथुनत्यागः ।'

Meaning: the sacrifice of intercourse in all states of the body, mind and speech is known as celibacy.

स्मरणं कीर्तनं केली श्रवणं गुह्यभाषणम् ।

संकल्पोऽध्यवसायश्च क्रियानिष्पत्ति एव च ।

एतद् मैथुनं अष्टांगं प्रवदन्ति मनैषिणाः ।

Meaning: 1. Thinking of a woman, 2. Description of her qualities, 3. Playing games with her, 4.Listening to her talk, 5. Speaking to her when alone, 6. Wishing to acquire her, 7. Trying to acquire her and 8. Actual intercourse are the eight types of sexual intercourse.

विषया विनिवर्तन्ते निराहारस्य देहिनः ।

रसवर्जं रसोऽप्यस्य परं दृष्ट्वा निवर्तते ।।– श्रीमद्भगवद्गीता (२.५९)

Meaning: A man who does not eat is liberated from all desires except the sexual desire. However after acquiring spiritual knowledge of The Supreme Brahman, the attraction for all desires including sexual desire disappears [9].

Swami Vivekananda, Swami Shivananda, etc. have expressed concepts like 'seminal loss means death'. Without considering in which context they were said, in India two to three generations have accepted these statements as established facts and this has caused considerable loss to them. Doctors all over the world unanimously emphasize that loss of semen during intercourse, masturbation or in nocturnal emissions does not cause any harm and research has proved that seminal ejaculation is harmless. In spite of this being so, how could Swami Vivekananda or Swami Shivananda make such wrong statements? This is a doubt which many young people harbour. If one tries to understand the context of this statement, it will be clear that neither the doctor nor the Swamis are wrong. This statement was not directed towards the average person. It was meant for seekers of spiritual progress. The intention behind making the statement was to wipe off the existing impression or to prevent the development of the impression that 'ejaculation means happiness' in the subconscious mind of a seeker following the path of Yoga. Such statements are meant to create aversion in the mind according to psychology. Only seekers should contemplate on these statements in this context [10].

Views of modern science

Masturbation is actually a sexual act practiced by one on himself in order to achieve sexual satisfaction. Masturbation refers to the sexual stimulation of a person's genitals, usually to the point of orgasm. The stimulation can be performed manually, by use of objects or tools, or by some combination of these methods. Masturbation is a common form of autoeroticism, providing sexual pleasure or orgasm in the absence of a partner.

Positive effects of masturbation

Moderate masturbation can actually render positive effects like reducing stress and anxiety and promoting the production of 'endorphin' hormone. Endorphin is considered 'feel good hormone' as it brightens up the mood of an individual. Thus, increased amount of endorphin would mean lively mood and high spirits. Besides, this particular hormone is also said to be beneficial for a man's prostate.

Masturbation helps prevent cervical

infections and helps relieve urinary tract infections which would otherwise have occurred due to sexual union. It is associated with improved cardiovascular health and lower risk of type-2 diabetes. It can help work against insomnia naturally, through hormonal and tension release. Orgasm increases pelvic floor strength.

It improves our mood, relieves stress, and strengthens our relationship with ourselves and also strengthens sexual relationship with partner.

Negative effects of masturbation

Excessive masturbation creates a problem when one reaches a point where he does not have any sperms to ejaculate and thus, blood takes over. It affects orgasm too. Psychologically, it leads to the issue of obsessive compulsive disorder of masturbating all the time. The adverse effect on a relationship and the corresponding spouse is rather obvious.

Over masturbation can cause many kinds of physical and mental problems. Prostatitis is of course the most directly noticeable problem. Pain is felt in prostate or testicles or lower back. Even pelvis can hurt. One may experience one/ many problems like depression, fatigue, chronic fatigue, hair loss in male, low back pain, eye floaters, fuzzy vision, memory problems, absent mindedness and lack of concentration due to excess masturbation.

Masturbation in young men often is performed when there is a psychological need for emotional fulfillment. This can set a pattern that carries over into adulthood and lead to chronic excessive masturbation. This excessive masturbation and the resulting problems can create further psychological problems.Basically, the boys and men use sex as a drug and get trapped in its addiction [11].

Conclusion

Masturbation is a natural phenomenon, normal physiology in human being which should not be mistaken as a sin and should not be suppressed in any way. It is a natural urge and is a form of sexual act. But excessive masturbation should not be practiced as it has many harmful effects on both the body and the mind.

References

1. The Laws of Manu For the 21st Century, Compiled and Edited by Pandit Sri Rama Ramanuja Achari. Vasanta Navaratri 5112 (Autumn 2009). Sydney, Australia.
2. Sharma RK, Dash B. Charak Samhita, Vol. I.Chowkhamba Sanskrit Series Office, Varanasi (India).
3. Yoga Vasistha - The Art of Self Realization. http://yogi.lv/files/yoga_vasistha.pdf. [Last accessed on 11/11/2015]
4. Laghu Yoga Vasistha (EnglishTranslation) by K. Narayanaswami Aiyer. http://www.estudantedavedanta.net/laghu-yoga-vasishta-english-translation.pdf [Last accessed on 11/11/2015].
5. Manusmriti with the Sanskrit commentary Manvarthamuktavali of Kullaka Bhatta, ed N.L. Sastri, 1983.
6. Manusmriti:The Laws of Manu, Translated by G. Buhler. http://sanskritdocuments.org/all_pdf/manusmriti.pdf [Last accessed on 11/11/2015].
7. Hatha Yoga Pradipika, Light on Hatha Yoga, Commentary of Swami Muktibodhananda under the Guidance Swami Satyananda Saraswati. Yoga Publication Trust, Munger, Bihar, India.
8. Hatha Pradipika of Svatmarama. Kaivalyadhama, S.M. Yoga Mandir Samiti, Lonavala, Pune, Maharastra, India.
9. The Bhagavad Gita by Swami Sivananda. 2003. The Divine Life Society, Shivananda Nagar, Tehri- Garhwal, Uttaranchal, India.
10. Srimad Bhagavata, The Holy Book Of God, Translated by Swami Tapasyananda. Sri Ramakrishna Math, Myalpore, Chennai.
11. http://www.hindujagruti.org/hinduism/knowledge/article/righteousness-key-to-control-desires.html [Last accessed on 11/11/2015].
12. http://www.womenshealthnetwork.com/sexandfertility/healthbenefitsofmasturbation.aspx [Last accessed on 11/11/2015].

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