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A study of the impact of regular condom use on the body chemistry, stress and life style of couples

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ABSTRACT

The study has been conducted among the couples using condoms regularly with focus on greater understanding of the issues related to acceptability, continuity, regularity and comfortableness of condom use for its impact on the body chemistry. The participating couples were selected from amongst the beneficiaries of various schemes. During the study taken up at the district level by the first researcher, to understand the benefits of condom use, the couples selected were asked to exclusively use the condoms and were to describe their opinion, expectation, satisfaction level, pleasure level and stress levels before and at the end of the study. The wide ranging discussions and opinions obtained from the medical experts has shown that there are certain hormonal changes due to their adequate & sustained release through the pituitary gland controlled hormonal activities. Thus, the hormonal assay of the beneficiaries will further enhance the theory of the 'condom acceptability induced hormonal impact resulting in stress relief'. Hence, this study has identified specific factors related to the need of sharing of information with not only non condom users, but also with those who are regular condom users but are unaware of its intrinsic protection benefits. The team of the aware users and non users thus developed shall reap rich dividends in the form of healthy, happy & productive work force and individuals especially in the developing world usually striving to disseminate useful lifesaving information through its limited resources. The limitations of the study has been the shyness of the respondents, unclear replies in some cases and limited representativeness of the interviewed couples for their geographical representation. The study will be of great use especially for the residents of SAARC countries and other developing countries because of their near resembling life styles, preferences, choices and geo-social scenario. The study highlights the need for further large scale behavioral studies closely associated with the study of the biochemical & hormonal changes in the body occurring during the regular usage of the Condoms by the couples. It shall help in motivating the eligible couples for adopting this cost effective method of family welfare providing multiple benefits associated with relieving of the unexplained stress, the cause of many avoidable family conflicts, in a logical, reasonable and practical approach based manner thereby facilitating a conducive environment friendly system for the larger developmental initiatives at the national level.

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1. Introduction

The primary drivers of the HIV epidemic in India are unprotected paid sex/commercial sex work, unprotected anal sex between men and IDU. Given that condom use is not optimal or

consistent; men who buy sex are the single most powerful driving force in India's HIV epidemic. As more than 90 percent of women acquired HIV infection from their husbands or their intimate sexual partners, they are at increased risk for HIV not due to their own sexual behavior.[8]

Percentage of women and men aged 15-49 years in India, who have more than one partner in the past 12 months reporting the use of a condom during their last sexual encounter has been found

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to be 58% as per BSS 2006 (Behavioural Sentinel Surveillance 2006) data. Percentage of men reporting the use of a condom the last time they had anal sex with a male partner in India has been reported to be as low as 13 % in some areas as per BSS 2006.[8]

2. Methodology

Couples using condoms regularly were selected from amongst the beneficiaries of various health schemes in the district. Their consent was obtained prior to seeking information on a simple questionnaire based for semi-structured individual interviews. The findings were analyzed using Open Epi Software and the association of behavioral factors related to regular condom use was assessed for felt stress. Elaborate review of literature helped to generate recommendations based on the available research and scientific base.

3. Results

78% of the couples were satisfied with their choices and were very well versed with the appropriate & correct usage of the condoms along with their benefits. Personal interactions during the course of research, in Sidhi district of Madhya Pradesh India, with the beneficiaries revealed that they have felt satisfaction, stress free life, mutual understanding, disease free environment and continued observance without any side effects being the major driving and motivating factors for them to continue and recommend the use of condoms to others as well. However, 22% couples used the Condoms extensively but were not very well versed with the associated advantages of the regular Condom use. Their knowledge level regarding the health benefits especially protection from Sexually Transmitted Diseases, Reproductive Tract Infections and HIV/AIDS were not correct. 92% respondents felt stress free life style because of the safety level of the Condoms for their protection against unwanted pregnancy. 79% of these 92% respondents felt that their mood elevation must have been due to some biochemical changes in the body related to the protective feeling due to its safety. Remaining i.e. 21% of these 92% respondents were unsure of their reasoning for their felt stress free life style.

Table 1: Response status of Interviewed Condom Users (n = 927)

Query	Response	
	No.	Percentage (%)
High comfort level with regular condom use	723	78.0 %
Used condoms but not well versed with its advantages	204	22.0%
Stress free life style	843	92.0%
Reasons for mood elevation among stress free persons, as felt or perceived:	666	72.15%
Biochemical changes or Protective Feeling or Being assured for prevention from diseases, pregnancy etc.	177	19.17%
Unsure of reason(s)		

Table 2: Association of Comfort level for Condom use and Felt Stress among Interviewed Condom Users. (n = 927)

Comfort level for Condom Use	Stress free Status of Interviewed Condom Users	Felt high stress among Interviewed Condom Users	Total	p value*	Chi Square	Odds Ratio [^]
High Comfort	498	225	723	< 0.000	42.06	2.8
Low Comfort	90	114	204	(<0.01)		
Total	588	339	927			

*p value is highly significant.

[^]High comfort level for condom use is 2.8 times helpful for stress free status as compared to low comfort level.

4. Discussion:

The observations of this study and interactions have yielded in greater scientific understanding, learning and observance of the sex phenomenon related safe sexual practices. The study has therefore focused on the hormonal aspect, stress relief and life style factors related to the benefits of condom use, prevalent practices and towards filling up the gaps in the condom promotion activities in Indian and Asian scenario.

a. Condom Promotion

It is however required to sustain the programme and intensify efforts of improve quality of services and condom distribution and ensure higher consistency of condom use among this category of the population and their clients.

The NACP III has a defined strategic framework with audience specific strategies and milestones for condom promotion. With an

overall objective of increasing condom distribution from 1.6 billion pieces in 2006-07 to 3.5 billion pieces by 2010; the strategy focuses on three channels of condom supply — free, social marketing and commercial scale — to work in a complementary manner for providing products to different target groups. The current supply levels of condoms are 2.2 billion pieces. In 2008-09, although three quarters of the condoms were distributed free or through social marketing — and availability of condoms remains dependent on these two methods — condoms sale has increased.¹⁰

On 2 July 2009, the Hon'ble Court annulled the 150-year-old law — drafted during British rule of India — which criminalized “carnal intercourse against the order of nature” punishable by up to 10 years in prison. The court declared that section 377 of the Indian Penal Code violated the Fundamental Rights enshrined in Articles 14, 15, 19 and 21 of the Constitution of India and that consensual sexual acts of adults in private should not be criminalized. ⁹

Comprehensive condom programming integrates various activities including male and female condom promotion, communication for behaviour change, market research, segmentation of messages, optimized use of entry points (in both reproductive health clinics and HIV prevention venues), advocacy and coordinated management of supplies. The goal of condom programming is to reduce the number of unprotected sex acts, which will, in turn, reduce the incidence of unintended pregnancy and sexually transmitted infections. Condoms have helped to reduce HIV infection where AIDS has already taken hold and curtailed the broader spread of sexually transmitted infections. They have also encouraged safer sexual behaviour more generally.

Thailand's efforts to de-stigmatize condoms and its targeted condom promotion for sex workers and their clients dramatically reduced HIV infections in these populations and helped reduce the spread of the epidemic to the general population. A similar policy in Cambodia has helped stabilize national prevalence, while substantially decreasing prevalence was observed among sex workers. In addition, Brazil's early and vigorous condom promotion among the general population and vulnerable groups successfully contributed to sustained control of the HIV epidemic. Increased condom use is believed to be a contributing factor in the decline in HIV prevalence reported in Zimbabwe between 2003 and 2005.

b. Gender Dimensions

Physiologically, men are more likely to transmit HIV to women than vice-versa. Although condoms can provide effective protection against HIV infection, and female condoms are agreed to increase women's empowerment, several issues impact upon the use of both male and female condoms. Cost, availability and perceptions of risk are important factors. Power relations between men and women, including the relative social and economic status of partners, influence the extent to which condom use can be successfully negotiated.

Accepted notions of masculinity and femininity also come into play. For instance, in many cultural settings, young women are supposed to be sexually innocent and may therefore be reluctant to carry or suggest using condoms. Since condoms are also associated in many contexts with illicit or extra-marital sex, married women are often powerless to request their partner to wear a condom despite suspecting that he may be infected with HIV, for fear of reprisal at the implied accusation of being unfaithful.

c. Pituitary Gland

From the onset of puberty, males continuously secrete testosterone to ensure the production of mature sperm. These hormone levels are directed by a negative feedback mechanism linking the brain, the pituitary, and the body.

In females, sex hormone secretions are also directed by the release of gonadotropic hormones, but levels are cyclical rather than constant. Each cycle produces and releases only one mature egg. The length of this cycle, known as the menstrual cycle, averages 28 days. FSH levels peak at the time of ovulation. Both FSH and LH have to be present in the blood for the ovaries to produce estrogen. Therefore, Pituitary gland has its own importance in the sexual functions, safer sexual practices and learning of the related skills for continued observance. Without use of safer sexual practices, the mental stress is the factor, which can be suitably avoided if there is adequate information and practices about the regular and correct use of the condoms. The correct use of Condoms not only prevents one from infection of STD/AIDS and prevents from unwanted pregnancies, but it also helps to maintain the equilibrium of the body chemistry by release of the routine regular body secretions, which are replenished in the body by natural course of glandular functions.

The use of body organs and its appropriate usages has to be ensured without any prejudices of mind, deeply seated but baseless long term beliefs and replication of the ongoing practices by tradition. It means that the judicious and healthy activities of mind and body will do no harm, be it physical, mental or otherwise. There has to be a balance of the mind, body and nature for the peace of mind, appropriateness of body demands and release of energy for keeping one healthy, happy and fit throughout life. Sexual activities for adults, who understand the implications of sexual relations, at appropriate intervals should be considered similar to any other body activity like walking, eating, exercise and social interactions.

d. Body Chemistry And Pleasure

Highlights from the UNAIDS Position Statement on Condoms and HIV Prevention state - “Condom use is a critical element in a comprehensive, effective and sustainable approach to HIV prevention and treatment. The male latex condom is the single, most efficient, available technology to reduce the sexual transmission of HIV and other sexually transmitted infections. Condoms must be readily available universally, either free or at low cost, and promoted in ways that help overcome social and personal

obstacles to their use. HIV prevention education and condom promotion must overcome the challenges of complex gender and cultural factors. Condoms have played a decisive role in HIV prevention efforts in many countries. Increased access to antiretroviral treatment creates the need and the opportunity for accelerated condom promotion.

HIV is everywhere, but the intensity of the spread of the virus varies. South Africa's high HIV prevalence, combined with its population size, makes it the country with the most people living with HIV. India, on the other hand, has a much lower HIV prevalence, less than 1%, but with a billion-strong population has the second highest number of HIV-positive people. Swaziland has a population of 1.2 million, but one in four adults are infected with HIV.¹

Michel Sidibe, Executive Director UNAIDS asks boldly: "Can we prevent the 7400 HIV infections that occur each day? Yes. But it will require nothing short of a prevention revolution. For three decades the evidence of what works and what does not has been debated in the UN General Assembly, parliaments, community forums, places of worship, scientific forums and conferences. We enter the fourth decade with the best possible knowledge on combination prevention and treatment options to help us realize our shared vision of zero new infections. An open dialogue on sexuality—based on current realities—should be encouraged in families and communities. HIV prevalence among females between the ages of 15 and 19 in South Africa and Kenya is three times higher than among males in the same age group. Unsafe sex often becomes an entry point to survival."

Outlook has explored: "As power shifts from the G8 to the G20, five countries stand out as being able to change the course of the global AIDS epidemic. OUTLOOK explores how Brazil, India, the Russian Federation, China and South Africa could finally break the trajectory."⁵

Staying HIV-negative has never been easier. Communication strategies, including social networking, have reinforced HIV prevention norms, with the result that over 95% of premarital first sexual encounters are condom protected. Whether they are HIV-positive or HIV-negative, young people today have a range of choices to avoid sexual transmission of the virus. The fourth generation of female condoms has been a fantastic success.

e.Body Chemistry Redefined

HUMAN BODY is a well-fashioned and mysterious chemical laboratory where numerous chemical reactions occur day and night. These patterns of continuous chemical reactions are executed by different physiological processes, motivations of our mind, our activities, etc. A mental tendency to fall in love during adolescence or to put it better, the growing sense of attraction to the opposite sex is one of the well known phenomena in humans and other animals too. But the important question is why these

senses manifest themselves during adolescence only? Certainly there are a series of changes taking place in body chemistry which can be related to physiological functions during the nascent phase of adulthood.

If our pituitary so desires, then we can fall in love and otherwise not. But it is not only the pituitary gland alone, which controls love affairs and sexuality in adults. There are many other sources of chemical reaction which are related to our love, passion and health-consciousness. Many scientists opine that sex is basically a high-power energy, which starts from the brain and travels through the external genital organ. It is also the part of complete fitness. Besides those, it is worth mentioning that when a person is continuing the affairs of the heart, then he / she becomes physically and mentally healthier, compared to others.

The following are the sources that arouse the desire for making love in adults. Different types of sources are involved in the growth of the sensation of love during adulthood.

d. Hormones:

Hormones play a key role in the desire for love. Different types of sex hormones secreted from the pituitary and gonads are helpful in growing the primary and secondary sexual characteristics in adults.

Oxytocin

Oxytocin, a hormone secreted from the posterior part of the pituitary gland (Neurohypophysis) has several important functions - starting from stimulating the desire for falling in love to giving birth to a child. Liking an opposite-sex friend, talking to him or her, seeing a movie with him or her, proposing to him or her - all these kinds of adult behaviour are motivated by this hormone. This hormone is also called birth hormone because it stimulates uterine contraction during child birth. This hormone is also called milk-ejecting hormone as it induces the flow of milk from the mammary glands to the mouth of the child under the control of Prolactin hormone secreted from the anterior part of the pituitary gland (Adenohypophysis). Another chemical, called alpha melanocyte polypeptide, is also secreted from the pituitary gland that takes part in the generation of romantic excitement.

The two main steroid hormones, Testosterone and Estrogen, secreted from the male gonad (testis) and female gonad (ovary) respectively, help to grow sexuality in adult animals. The secretion of those hormones in adults motivates sexuality in human beings.

Adrenaline/Nor-Adrenaline

These hormones are involved in the excitement arising from being attracted to the opposite sex. These hormones are secreted from the Medulla part of the adrenal gland. This gland is also called suprarenal gland as it is located on the kidneys.

Neurohormones

G.T.H hormones (I.C.S.H., F.S.H., L.H. etc.) secreted from the pituitary are indirectly controlled by the G.T.H.-R.H secreted from the hypothalamus part of the brain and helps in stimulating the gonads in secreting their hormones during adulthood.

Pheromones are chemical substances used for sexual communication between individuals of the same species. These are also called ectohormones or sex attractants. These accelerate a specific response to the stimuli of recognition and attraction. The different types of pheromones found in animals like silk worm, the queen substance in honeybee and the Civertone in cat are used to attract their opposite sex. In man, the role of Pheromones is not truly well known but according to some scientists, these help in growing the sexual desire.

Neurotransmitters

These are low-molecular weight substances released in small doses at interneural, neuromuscular and neuro glandular synapses. Some excitatory neurotransmitters like Serotonin and Dopamine help to generate romantic and love-making moods. These are produced in the brain and help in increasing the attraction towards the opposite sex.

Nitric Oxide

This chemical is produced in the sex organs of males and females. The effect of nitric oxide dilates the blood vessels of sex organs and accelerates the blood flow through them.

Vaso Active Intestinal Polypeptide

Diurnal and nocturnal animals differ with respect to the time of day at which the ovulatory surge in luteinizing hormone occurs. In some species this is regulated by the suprachiasmatic nucleus (SCN), the primary circadian clock, via cells that contain vasoactive intestinal polypeptide (VIP) and vasopressin (AVP).¹¹

Hormonal Support

During sex, the body releases chemicals called endorphins, which create feelings of relief and pleasure. They are a natural anesthetic, and, contrary to medical myth, there is no evidence to support that frequent masturbation or sexual intercourse can "dull" one's endorphin release. The presence of endorphins is a purely beneficial phenomena. These chemical heighten our mood and can lead to a brighter attitude and more positive interactions with people.

With the ever-expanding availability of condoms, IUDs, and other highly-effective birth control methods, sexual activity is becoming progressively more worry-free. As society attitudes become more relaxed, academics feel more comfortable researching sex. Not only does sex relieve tension, but it boosts our

immune system as well. A study at Wilkes University found that sex significantly increases levels of the antibody called immunoglobulin. The best that modern science can say for sexual abstinence is that it's harmless when practiced in moderation. Having regular and enthusiastic sex, by contrast, confers a host of measurable physiological advantages.

After sex, production of the hormone prolactin surges. This in turn causes stem cells in the brain to develop new neurons in the brain's olfactory bulb. In a 2001 follow-on to the Queens University study, researchers focused on cardiovascular health. That by having sex three or more times a week, men reduced risk of heart attack or stroke by half. In reporting these results, the co-author of the study, Shah Ebrahim, displayed the well-loved British gift for understatement: "The relationship found between frequency of sexual intercourse and mortality is of considerable public interest."

Sex is nothing else, is exercise. A vigorous bout burns some 200 calories – about the same as running 15 minutes on a treadmill or playing a spirited game of squash. The pulse rate, in a person aroused, rises from about 70 beats per minute to 150, the same as that of an athlete putting forth maximum effort. British researchers have determined that the equivalent of six Big Macs can be worked off by having sex three times a week for a year. Muscular contractions during intercourse work the pelvis, thigh, buttocks, arms, neck and thorax.

Sex also boosts production of testosterone, which leads to stronger bones and muscles. Men's Health magazine has gone so far as to call the bed the single greatest piece of exercise equipment ever invented. Immediately before orgasm, levels of the hormone oxytocin surge to five times their normal level. This in turn releases endorphins, which alleviate the pain of everything from headache to arthritis to even migraine. In women, sex also prompts production of estrogen, which can reduce the pain of pre menstrual stress. Wilkes University in Pennsylvania says individuals who have sex once or twice a week show 30% higher levels of an antibody called immunoglobulin A, which is known to boost the immune system.

It is also mentioned in literature that there is better bladder control observed in persons having regular sex as compared to the other non observers. The same set of muscles do work at both the times – sex and urine release. Some urologists believe they see a relationship between infrequency of ejaculation and cancer of prostate. The causal argument goes like this: To produce seminal fluid, the prostate and the seminal vesicles take such substances from the blood as zinc, citric acid and potassium, then concentrate them up to 600 times. Any carcinogens present in the blood likewise would be concentrated. Rather than have concentrated carcinogens hanging around causing trouble, it's better to evict them.

Gender And Sexuality

Gender and sexuality – and their related norms and practices – have long been recognised as key factors affecting the dynamics of HIV and the global response to it. Gender inequalities fuel and exacerbate HIV epidemics. Although gender issues vary across communities and countries, power imbalances, harmful social norms, violence and marginalisation affect both women, men, girls and boys across the world. They increase people's vulnerability and limit their ability to prevent HIV infection. Half of all people living with HIV are female. However in Sub-Saharan Africa, there are three young women living with HIV for every one young man. And in nearly every country in the region, the majority of HIV-positive people are females, especially those aged 15–24.

Meanwhile, in other regions of the world, men are more likely to be infected with HIV than women, often within concentrated epidemics that disproportionately affect key populations, such as men who have sex with men, transgender people, people who use drugs and who have transactional sex. In Latin America and the Caribbean, for example, nearly three times as many men as women are HIV-positive, with transmission predominantly among men who have sex with men. However, the real gender picture is often more nuanced and complex than data indicate. For example, in some countries in the Caribbean, the majority of those living with HIV are female. Also, within the generalized epidemics of many Sub-Saharan Africa countries, men who have sex with men have a particularly high burden of HIV infection. But because of homophobia and the widespread criminalisation of homosexuality, national responses largely neglect same sex behaviour.

Gender inequalities also have an impact on HIV-related care, treatment and mitigation. For example, while women and girls assume the bulk of care-giving for sick family members, there are indications that men who have sex with men and transgender people are less likely to access appropriate treatment and support services than other groups.

To have the greatest impact on HIV, it is important that those in the HIV response take into account the full range and diversity of gender-related issues that affect individuals, communities and countries. For example, many men who have sex with men also have sex with female partners. Gender lies at the heart of many of the political commitments made by the world's governments. For example, the Declaration of Commitment on HIV/AIDS Meanwhile, the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund) has developed strategies on gender (focusing on women and girls) and sexual orientation and gender identities (focused on sexual minorities), aiming to achieve a positive bias in its allocation of funding. Gender has also been central to the policies of many other international donors.

The best that modern science can say for sexual abstinence is that it's harmless when practiced in moderation. Having regular and enthusiastic sex, by contrast, confers a host of measurable

physiological advantages, be you male or female. To improve our work on gender and sexuality in the future, we should develop a gender strategy, carry out a more specific assessment of the capacity needs for gender-transformative approaches, and develop a plan to address these needs, document examples of good practice of gender-transformative approaches working in generalised epidemics, concentrated epidemics, and mixed epidemics and ensure that gender transformation is fully integrated and addressed in existing and future work on good practice responses to HIV. Gender inequality and discrimination, fuelled by socio-cultural issues, are the most common gender concerns.

Regional Observations

Millennium Developmental Goals (MDGs) are intrinsically related to the prevention and control of HIV/AIDS in the global context and hence need extremely careful and detailed interventional inputs for obtaining the results in the areas to eradicate extreme hunger and poverty, achieve universal primary education, promote gender equality and empower women, reduce child mortality, improve maternal health, combat HIV/AIDS, malaria and other diseases, ensure environmental sustainability. These goals clearly mention the need to stress on the HIV/AIDS in all the spheres of life with best qualitative and quantitative inputs as per regional variations and requirements. Therefore, the issues related with condom use, condom promotion, condom sustenance programmes and offering better services are key to achieving the MDGs as desired by United Nations and allied countries.

Required Support

Types of support include conducting network and group capacity analyses, financial and programme management support, and organizational development support. This support shall ultimately facilitate the continuance of the activities of the networks on a larger scale. The politico social and managerial support with emphasis on the global environmental perspectives will yield rich dividends for the promotion of condom use to facilitate HIV free environment along with population control, especially in the developing countries including BRICS countries (Brazil, Russia, India, China and South Africa) and SAARC countries.

5. Conclusion

The studies undertaken have focused on the effects of condom use on the body chemistry along with its impact on the stress and life style profiles in Indian scenario with focus on the hormonal changes during the interactions. The observations highlights multiple hormonal changes under the control of Pituitary Gland of the human body, the master of endocrine orchestra. Gender dimensions also underline the fact that there is felt need of emphasis on the use of condoms on a regular and sustained basis in all the scenarios of life, be it within the home environment or in other relations. Body chemistry and pleasure aspect also reveals that there is better health if there is natural observance of sexual practices without any myth, reservations and limitations.

The studies undertaken have focused on the effects of condom use on the body chemistry along with its impact on the stress and life style profiles in Indian scenario with focus on the hormonal changes during the interactions. The observations highlights multiple hormonal changes under the control of Pituitary Gland of the human body, the master of endocrine orchestra. Gender dimensions also underline the fact that there is felt need of emphasis on the use of condoms on a regular and sustained basis in all the scenarios of life, be it within the home environment or in other relations. Body chemistry and pleasure aspect also reveals that there is better health if there is natural observance of sexual practices without any myth, reservations and limitations.

Millenium Development Goals including Poverty, Illiteracy and Health concerns including HIV/AIDS can only be achieved if the small family norms are adhered to along with regular use of condoms. The unavailability of basic infrastructure, entertainment, electricity, shelter, mobility and job assurances also are the threats towards ensuring continued use of condoms. With all these odd situations, the basic needs of individuals are the same as compared to other countries or scenarios, but these very situations pose a risk of having population growth due to unsafe sexual practices in India. Support to and from the neighbouring countries for implementation of the policy, plan and practices shall help in achieving the goals set forth for condom promotion.

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