

Risk Factors for Men Who Have Sex with Men

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It is typical for men who have sex with men (MSM) to have several sexual partners, unstable partners, unprotected sex, or intersex relationships, all of which increase the risk of contracting human immunodeficiency virus. As a result of their behavior and close connection to acquired immunodeficiency syndrome, MSM individuals have been subjected to a barrage of interrogations, condemnations, and discrimination. Study and analysis of the risk factors of MSMs will not only assist in correctly knowing and comprehending the community, but also aid in the provision of health education, sickness prevention, and treatment.

Keywords: Male Homosexuality; Sexual Orientation; Risk Factors; Causal Analysis; Interventions

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IN the earlier ages, the international medical profession assumed that the HIV epidemic was restricted to male homosexual (gay) people, male bisexual people, and those who wished to transition but had not yet done so. Male transsexuals constitute a sizable fraction of the heterosexual male population. These organizations resulted in the development of a novel concept: men who have sex with men (MSM). The MSM includes gay males, bisexual men, transgender men, and heterosexual men who have sex with men. Homosexuality is defined as the persistent manifestation of sexual attraction toward individuals of the same sex under normal living circumstances, including thoughts, feelings, and sexual conduct (1). Now homosexuality is considered, like heterosexuality and bisexuality, as a distinct type of “sexual orientation.” That is, apart from “sexual orientation,” which is distinct from heterosexuality and bisexuality, there are no differences in other aspects of falling in love. MSMs might be emotional or non-emotional in nature.

Historically, we assumed that MSM conduct was a result of mental disease or moral decay. Furthermore, many sexual partners, unstable sexual partners, unprotected sex (anal and oral

sex), and intersex are common among MSM populations, and this community is the first and most HIV-infected (2-4). MSM people have been questioned, condemned, and discriminated against because of their irrational behavior and intimate association with AIDS, and they also experience unpleasant feelings such as psychological anguish and sadness (5). Thus, study and analysis of the causes and influencing elements of MSM will not only aid in accurately understanding and comprehending the community, but will also aid in the provision of health education, illness prevention, and treatment for this group (6). The purpose of this page is to summarize the studies on the MSM population from three perspectives: biology, psychology, and societal variables.

Biological Factors Genetics

Genetics examines the etiology of MSM from a familial, twin, and molecular genetics approach and found that MSM has a hereditary component. Bailey et al. (7) discovered that between 7% and 10% of homosexual brothers were homosexual. Ap-

proximately 20.8%, 16.3%, and 18.5% of males in the USA, the UK, and France, respectively, reported either homosexual behavior or homosexual attraction since age 15, and about 6.2%, 4.5%, and 10.7% of males in these three countries, respectively, reported having had sexual contact with the same sex in the previous 5 years (8). The pedigrees of MSM and heterosexual males in general, and discovered that MSM had more reproductive maternal relatives and older brothers or sisters (9). By examining twins, we can rule out the effect of common environmental variables and ascertain the involvement of genetic factors in MSM (10). Identical twins had a homozygous concordance rate of 31.6%, which was greater than that of fraternal twins (8.3%) (11). Numerous molecular genetic studies link MSM sexual orientation to the X chromosome, which carries the genes for sex, reproduction, and cognition. A study discovered that moms of MSM had much more X chromosome inactivation than normal heterosexual male mothers, implying the potential of X chromosome inheritance, although the particular mechanism is unknown (12). There have been two genome-wide scans of MSM communities globally so far, and for MSM did not reveal a related locus in the Xq28 area (13). The genotypes of MSM in families with more than two gay brothers revealed that the area with the highest linkage value was 7q36, followed by 8p12, and maternal 10q26, which was not connected to paternal lineage, was also discovered (14). Although genome scans revealed no evidence of linkage in all three locations, the 14q32 region may be related to the prevalence of MSM behavior (15, 16).

Neurobiology

Sexual orientation is associated with differences in brain anatomy and function (17). MSM had a suprachiasmatic nucleus (SCN) that was double the size of normal males (18). The SCN was the first to discover distinctions between MSM and heterosexual guys in general. Abnormalities in SCN shape can impact the number of vasopressinergic neurons, affecting vasopressin-related behaviors such as mate choice and social recognition, and MSM demonstrated differences in these behaviors when compared to heterosexual males in the general population (19). There are four kinds of interstitial nuclei in the anterior hypothalamus (INAH 1-4), with INAH-3 being the primary area responsible for human sex dimorphism (20). MSM has lower INAH-3 volumes than typical heterosexual males (21). Another study discovered that MSM had a lower number of neurons in the anterior nucleus of the hypothalamus than normal heterosexual men, which may impact the release of gonadotropin-releasing hormone in MSM, bringing the level of gonadotropin closer to that of women (22). This research discovered differences in the neurological systems of MSM and heterosexual males in general, but particularly in the anatomy of the hypothalamus. However, a causal association between these changes and MSM sexual orientation cannot be shown at this time, and further study is required.

Prenatal Androgen Levels

Perinatal androgen exposure is critical for sex differentiation and the development and creation of sexual traits (23, 24). The two-to-four-finger ratio (2D:4D) is the ratio of the index and

ring fingers' lengths, often known as the finger length ratio (25). 2D:4D values are connected with a variety of psychological and behavioral variables, including sexual orientation, cognitive ability, and personality (25, 26). Numerous studies on the 2D:4D value have been conducted in recent years, but the findings are inconsistent. Accordingly, MSM had a lower 2D:4D value than heterosexual men (27), while another study found that transgendered guys have a lower 2D:4D value than normal women (28). However, no difference was found in the 2D:4D ratio between MSM and normal males (29), although others discovered that MSM had a larger 2D:4D value (30). Accordingly, the typical level of androgen exposure that impacts male sexual propensity should be kept within a certain range and that exposure levels that are insufficient or exceed this range may increase the likelihood of men becoming MSM (31).

Apart from impacting the 2D:4D ratio, testosterone levels throughout the embryonic phase also influence brain development, which has an effect on the dominant hand of the infant (32). MSM is more extreme right-handed than heterosexual men in general (33, 34), and the rate of left-handedness is also greater (35), suggesting that prenatal testosterone exposure is associated with MSM development. The MSM had shorter limbs and hands than regular men, suggesting that they were exposed to fewer steroid hormones throughout development than normal males (36). Recently, a strong correlation was identified between the 2D:4D value and the SMOC1 gene variant, and proved that the protein produced by SMOC1 plays a critical role in limb development. As a result, it is hypothesized that SMOC1 plays a critical role in hormone exposure and the 2D:4D ratio during the embryonic stage (37). However, the precise mechanism of action and signaling routes remain unknown.

Psychological Factors

Early Childhood Psychology

According to the eminent psychiatrist, Freud, "homosexuality is an inhibition or halt in the development of sexual psychology at a specific period." He believed that the interval between the ages of three and five years is essential in the process of human sexual development. At this age, young children develop an instinctual sexual attraction to their opposite-sex parents and an aversion to their same-sex parents. Inhibiting psychosexual development at this point may result in aberrant sexual psychology and behavior (38). Psychoanalytic theory postulates that the unique mother-child bond throughout childhood is a significant source of MSM and that elements like non-gender parenting during childhood will influence an individual's gender identity (39).

Sexual Emotion

Sexual conduct in same sexes is primarily motivated by sexual feelings, and individuals believe that interaction with same-sex partners can produce pleasurable emotions (40). When an individual feels positive feelings such as liking, excitement, impulsiveness, and want while engaging in sexual conduct, the individual bringing these experiences is considered the object of love, and if the individual is of the same sex, homosexuality results (41).

Factors Influencing Sexual Behavior

Kissing, caressing, genital stimulation, and penetrative intercourse are all examples of sexual activity. Studies have underlined the critical nature of the “first” sexual encounter. Early sexual experience has a significant role in the development of homosexuality and bisexuality, followed by gender identity and familial effects (42). Once a certain sexual behavior occupies this area, it is likely to become permanent and form the basis of a lifetime sexual orientation. The same-sex object of first sexual conduct has an effect on the occurrence of same-sex sexual behavior in MSMs (43).

The National Center for Child Abuse and Discrimination defines Sexual Abuse of Children (CSA) as “adults engaging in sexual stimulation to satiate their own sexual drives, including kissing, embracing, and molestation for sexual arousal on children's bodies and sexual organs, and the most serious of which are forced sexual intercourse, incest, and child prostitution. In the general population, the prevalence of CSA in men ranges between 5% and 10%, but it is 17.5% in MSM (44). Accordingly, LGBTQ people experience sexual abuse at a rate of 3.8 times that of the general population (45). Studies examining the consequences of sexual and nonsexual kinds of abuse on men and women have revealed strong connection with sexual abuse (46).

Social Factors

Political and Cultural Factors

Throughout history and cultures, the public and government have developed varying attitudes and policies concerning MSMs, which are mostly represented in the execution of laws and regulations, policies, and social culture. MSMs are viewed as a sin by Christians as a result of moral deterioration. Deeply inspired

by Christianity or Islam, more than 80 nations continue to have laws criminalizing MSMs. Males were seen as perfect in ancient Greek society, and people were filled with love for men. Hence, same-sex love predominated in Athens at that time. Now, popular acceptance of MSM has shifted as well. In certain countries, such as the Netherlands and Belgium, homosexuality has been legalized, with special legal protection and marriage permitted. However, societal acceptance of MSM remains low, there is widespread discrimination, and the connection between MSM and society is generally private. Thus, the socio-political and cultural influences on the MSM are indirect.

Economic Factors

A male sex worker (MSW) is a subspecies of MSM. It refers to males who give sexual services to other men or women in exchange for money or commodities. Many MSWs, frequently with female partners or through coerced heterosexual marriages, sell sex for a number of reasons (such as a last resort against poverty and lack of opportunity) or because sex work is a very straightforward cash source (47).

Conclusions

The causes of MSMs are quite complicated. It is primarily influenced by biological, psychological, and social variables. There is no obvious causal link between the three variables. While considerable progress has been achieved, there are still several issues to be addressed. Whether it be biological or psychological variables, more systematic study has been conducted, particularly in the areas of genetics, sex hormones, and brain shape. At the moment, there is no widely acknowledged consensus on the primary cause of MSMs. ■

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