Sadism, Sadomasochism, Sex, and Violence

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Contents

The true prevalence of sexual sadism (and its variants) is unknown. However, all clinicians will knowingly or unknowingly encounter patients with this disorder. Regretfully, few programs offer adequate education in normal sexuality and even less provide training in the assessment and treatment of pathologic sexual interests. This review synthesizes current theories about possible etiologies of criminal sexual sadism and the resulting implications for diagnosis and treatment of this sexual disorder. Included is a review of theories of criminally sadistic sexual motivations, response patterns, and physiology, including possible neurophysiologic factors and more complex interactions. This review focuses primarily on published English-language scientific studies of sexual sadism. It should be noted that my use of the term sadism refers to nonconsensual sexual aggression.

Hilights

- While some scientific evidence supports an interaction between sexual behaviours and aggression, the purported association between sex and violence in media reports is misleading. This is due to a focus on sensational cases, lack of consistency in diagnostic criteria, inconclusive study designs, overgeneralization, and reliance on opinion.

- Sexual arousal from consensual interactions that include domination should be distinguished from nonconsensual sex acts. Nonconsensual sex may be opportunistic, disinhibited, or sexually motivated. Often motivations are mixed.

- Future research needs to integrate studies to account for how neurophysiologic and neurohormonal events translate into psychologic experiences that in turn are modified by social variables within specific populations across the lifespan.

- The frequency of reported sex crimes is decreasing. The efficacy of treatment for paraphilias of all types is improving. Further research into the relation between sex and violence will aid in decreasing sex crimes but more importantly will aid in understanding how to facilitate safe, healthy, and happy sexuality for everyone.

Sadism and masochism occupy a special place among the perversions, for the contrast of activity and passivity lying at their bases belong to the common traits of the sexual life. —Sigmund Freud[1,p23]

How one thing depends upon another is the greatest mystery about life in my opinion, and no doubt if we could see the network of cause and effect spun and spinning around us, it would be a very interesting and wonderful spectacle.[2,p1]

The topics of sex and violence are of almost universal interest. A Google search using the word sex produces 687-million hits. A search linking sex with synonyms for violence results in 274-million searchable links. A more specific review of the scientific literature was conducted using SUM search, which combines a metasearch strategy with contingency searching of major databases including PubMed and PsycLIT. In

our review, the following key words were linked with the word sexual: violence, sadism, homicide, coercion, and predator. This search, limited to human subject research published in the English language within the last 10 years, resulted in 4211 journal article citations. These citations were combined with 148 journal articles identified by the key word sadomasochism, followed up by referral to articles and books cited in the materials listed above.

To capture articles not yet cited within standard research databases, the results were combined with a recent review of the published literature on sexual violence.[3] Full details of the search strategies and results for this article are available on request.

Introduction

The incidence and prevalence of sex crimes in North America is declining,[4] and no one knows why.[5] In Canada, the rate of sexual assault in 2004 was 74 incidents per 100 000, representing a 33% drop from 1985. Since then, published rates report a further decrease to 72 per 100 000.[6]

Despite this welcome trend, the association between sexually motivated behaviours and violence is unknown. Sexual offences of all types result in devastating consequences, not only for victims but also for perpetrators (a third of whom are themselves victims of sexual abuse).[7] No clinician who cares for adult patients has the luxury of avoiding contact (knowingly or otherwise) with perpetrators and potential perpetrators whose activities may be modified to the extent that sex crimes can be prevented.

Appropriate interventions require adequate education. In a survey of 141 medical schools in North America, 54% provided 10 hours teaching on the general topic of sexual medicine[8]; however, most medical schools provided prospective physicians with less than 2 horns of sex education.[9] These numbers are important because physicians are often the first people confronted with situations in which clinical judgments are crucial. The vignette in Table 1 is an example of the questions posed dining typical sexual attitude restructuring exercises advocated by experts in medical education.

The purpose of this review is to examine the relation between sex and violence, to explain some of the contradictory views of researchers, to provide a rational basis for answers to the questions posed in Table 1, and to advocate for evidence-based evaluation and treatment of men and women with potentially problematic sexual interests and behaviours. This review is intended primarily for psychiatrists in general practice. Reviews of topics of more interest to subspecialists are available, such as sexually aggressive women,[10] sexually aggressive juveniles,[11],[12] intellectually delayed sex offenders,[13] and neurological comorbidity in sexual violence.[14]

Abbreviations used in this article

BDSM	Bondage-Discipline, Dominance-Submission, Sadism-Masochism
DSM	Diagnostic and Statistical Manual of Mental Disorders
ICD	International Classification of Diseases
LH	luteinizing hormone
MRI	magnetic resonance imaging
PET	positron emission tomography
RCBF	regional cerebral blood flow

Table 1 Case history

You are a psychiatry resident on call in a busy downtown emergency room. A young patient is brought to the ER by ambulance with a fractured femur. Radiologic examination indicates this is a third fracture. You are asked whether a psychiatric consultation is indicated.

What is your answer if:

- The injuries were sustained during high school football games?
- The injuries were sustained during consensual, sadomasochistic sex play?
- The injuries were sustained during nonconsensual sexual activity?
- The patient is a child; is female; is intellectually disabled; does or does not think there is a problem?

Finally, what would your answer be in each case if the patient were the sexual partner of another individual with the same medical injury?

Table 2 DSM-IV-TR criteria for sexual sadism (302.84)

Over a period of 6 months, recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving acts (real, not simulated) in which the psychological or physical suffering (including humiliation) of the victim is sexually exciting to the person.

The person has acted on these sexual urges with a non-consenting person, or the sexual urges or fantasies cause marked distress or interpersonal difficulty.[15,p574]

Diagnostic Criteria

DSM-IV-TR criteria for sexual sadism (302.84) are reproduced in Table 2.[15, p574] Examining the A criteria, several questions arise:

- Why 6 months?

- What does recurrent mean?
- What does intense mean?
- Is it meaningful to discuss sexual urges independent of sexual fantasies?
- Why distinguish between real and simulated acts?
- Appearing to be a fairly inclusive criteria, why is humiliation specifically identified in addition to psychological and physical suffering?

Table 3 ICD-10 criteria for sadomasochism (F 65.5)

A preference for sexual activity that involves bondage or the infliction of pain or humiliation. If the individual prefers to be the recipient of such stimulation this is called masochism; if the provider, sadism. Often an individual obtains sexual excitement from both sadistic and masochistic activities.

Mild degrees of sadomasochistic stimulation are commonly used to enhance otherwise normal sexual activity. This category should be used only if sadomasochistic activity is the most important source of stimulation or necessary for sexual gratification.

Sexual sadism is sometimes difficult to distinguish from cruelty in sexual situations or anger unrelated to eroticism. Where violence is necessary for erotic arousal, the diagnosis can be clearly established. Includes: masochism, sadism.[19,p 172]

Few experts follow the DSM-IV-TR criteria.[16] For example, in a series of survey studies involving respected and experienced forensic psychiatrists, investigators found that "the diagnosis of sexual sadism was not being applied in the Canadian prison system in a way that matched any of the criteria identified in the literature." [17, p 2]

These findings also applied to internationally renowned psychiatrists, in which a kappa coefficient for reliability across diagnosis was only 0.14.[18]

Table 3 lists the ICD-10 criteria for sadomasochism.[19] There are several obvious differences between these criteria and those of the DSM-IV-TR. First, the conditions of sexual sadism and sexual masochism are combined. Second, there is an indication that elements of sadomasochism may be present in so-called normal sexual life. Third, there is an explicit differentiation between sexually motivated sadomasochistic acts and those motivated by cruelty or anger in a sexual context.

The differences between the DSM and ICD diagnostic criteria underline a major cause of confusion in the literature as it is often hard to know what is meant by the term sadist. Also, most studies use samples of convenience consisting of men convicted of violent sexual crimes. Examination of samples of this type begs the question of the relation between sexual sadism and sexual violence.

Etiologic Theories

Sexual Motivation

In a recent paper,[20] 12 series of serial sexual murderers were reviewed.[20–31] The men in these surveys were judged to have shown evidence of "positive feelings of sexual pleasure, even exhilaration- rather than anger or other unpleasant states..." that represented the "driving psychological force in the crimes."[20, p 902]

On the basis of a review of studies on the sexual physiology in nonsadistic men, these authors assert that anger is incompatible with sexual arousal because sympathetic catecholamines associated with anger (for example, norepinephrine) are also associated with penile detumescence.[32,33]

Unfortunately, all but one of the 12 reports involved reviewing historic cases, with several involving descriptions by authors with no clinical experience. It is possible that the descriptions of sexual pleasure as the prime motivating force may more accurately reflect the views of the reports' authors than those of the study's participants.

In addition, many sex crimes involve activities that do not require an erection.[34,35] The act of planning and carrying out a sex crime may itself be associated with subjective sexual arousal.[36] Presumably these phases of the crime are independent of penile tumescence and not incompatible with other emotions such as anger directed at the victim. Several studies have indicated that anger itself can be a major factor contributing to the commission of sex crimes.[37–39]

Sexual Fantasies, Experiences, and Behaviours

If serial violent sex offenders are primarily motivated by sexual arousal, how unique to offenders is sexual arousal in response to sadistic stimuli or scenarios? Meyers et al's review of 3 studies[20, p 904] in which a percentage of presumably noncriminal male college students were aroused by fantasies of "infliction of pain on others"[40] and found pictures of women with "distressed faces"[41] more sexually arousing, and in which the degree of arousal increased together with the degree of distress depicted in pictures of "semi-nude women in bondage."[42]

These and other studies have been summarized [43] Among the general male population, 39% have had fantasies of "tying up" and 30% of "raping a woman."[44, p 571] Among male college students, 51 %[44, p 130] indicated they would rape a woman if they thought they could get away with it, and perhaps most controversially, 25%[44, p 134] of the male

and female college students in the sample thought women would enjoy being raped if no one knew about it.[45]

Most rapes involve the use of alcohol. In one representative study, according to 61% of the victims, the offender was under the influence of alcohol.[46] It is unknown whether the percentages of students apparently approving of rape in the previous study would have been higher had the surveys been done after the respondents had consumed alcohol.

One of the most influential studies of sexual murderers involved a sample of only 36 men, interviewed in custody by FBI special agents.[47] Authors of the FBI study hypothesized that offenders begin with deviant fantasies that graduate to minor crimes that in turn become increasingly serious. This "degeneration hypothesis" was originally advanced by Marquis Donatien-Alphonse Francois de Sade, after whom the term sadism was eponymously named.[48] This influential uncontrolled FBI study has supported the theory that men who commit extreme sex crimes can be identified and classified on the basis of unique characteristics, including deviant sexual fantasies.[40],[49],[51-53]

Problems with the sensitivity and specificity of sexual fantasies characteristic of sadistic sex offenders have been reviewed.[54] One study of 94 men with no history of sexual offences found 33% reported rape fantasies and 14.9% reported humiliation fantasies.[44] Although men far outnumber women convicted of sadistic sex crimes, surveys have found no difference in frequency of sadistic fantasies in men and women.[55–57] In fact, nonscientific reports indicate that women's fantasies may be becoming more sadistic even though the number of sadistic women convicted of sex crimes has remained constant or even dropped.[58] Variables identified as characteristic of criminal sadists by Burgess[49] were compared with frequencies of these variables in a sample of 18 undergraduate men and 32 undergraduate women. None of the university students were known to have committed crimes of any type. Among 11 childhood experiences identified as characteristic of criminal sadists, only a history of convulsions was more frequent in Burgess' criminal sadist group. Three childhood experiences were more common in the university group: daydreaming, accident proneness, and headaches. The university group also reported more adolescent experiences than the sexual sadists, including: poor body image, sleep problems, and headaches. Sexual sadists were more likely to report eneUresis and convulsions during adolescence. In adulthood, the university group continued to show more worrisome behavioural indicators than did Burgess' criminal sexual sadists: daydreaming, poor body image, sleep problems, and headaches.

A similar lack of specificity was found for the childhood behavioural indicators previously identified to be associated with criminal sadists. The only exceptions were self- identified compulsive masturbation and fire-setting, which were significantly more prevalent in the sadist group.

It should be noted that more differences emerged between the 2 groups during adolescence and adulthood. Unfortunately, data concerning the time of onset of criminal behaviour in the offender sample were not available. Still, the failure to find consistent clear differences between the criminal sadists and the university student group, even

though the university student group consisted of both men and women, suggests that experiences and behaviours, at least as identified in the FBI sample, are unreliable.

Sexual Response Patterns

If criminal sadists cannot be reliably distinguished from noncriminal men on the basis of sexual fantasies, childhood experiences, or behaviours, can they be distinguished on the basis of laboratory testing of penile tumescence in response to stimuli designed to simulate or approximate sadistic scenarios? This possibility was also investigated.[59–65]Marshall[66] pointed out that results of these early studies have yielded inconsistent results when arousal in response to rape was compared between groups consisting of rapists and normal men. In response to rape stimuli, rapists were found to show penile tumescence responses that were either more than,[64],[67–69] equal to,[59,60],[70–74]or less than[61] those of the control group. It may be that differences in results may be due to differences in the number of sadists in each group.[75],[76]

A second explanation for variance in ability to distinguish between rapist and nonrapists on the basis of penile tumescence testing may be due to the types of stimuli used in the test procedure.[77],[78] Two potentially important variations include the degree of brutality of the audiotape stimuli[79] or the degree of humiliation.[80] In all likelihood, an interaction exists between the degree of sadism in the man tested and the type of stimuli presented. In a group of rapists with few sadists, manipulation of sadistic elements in the stimuli presented during penile tumescence testing would not be expected to assist in discrimination from nonrapist, nonsadistic controls. This is in fact what was found.[81]

In a study involving 41 sexual offenders diagnosed with sexual sadism and 18 sexual offenders without sadism, Boer[65] found that on a "composite index" of phallometric responses, "only 17.1% of sadists appeared deviant and yet 44% of the so-called nonsadists displayed deviant responses."[p 2] This raises the question of whether sadistic interest necessarily increases risk of sexual offences.

Penile tumescence (phallometric) testing is at best a crude measure of sexual interest because it measures only one aspect of sexual arousal (penile erection) and because it does not measure propensity to act on sexual interests.[82]

Physiology

More proximal measures of physiologic associations associated with sexual violence have been investigated. Testosterone is a hormone that has received great interest based on the observations that most sex offenders are male and that men have more testosterone than women. In a sample of 4462 male war veterans, serum testosterone was associated with antisocial behaviours.[83]

However, the only reported association with sexual behaviours was between high testosterone levels and "more than 10 sex partners in one year"[p 210] and the association between high testosterone and antisocial behaviours was moderated by increases in socioeconomic status. An association between high salivary-free testosterone levels and aggression was also shown in a sample of 89 prison inmates.[84]

However, sexual aggression was not measured in this study. This deficiency was partially addressed in a third study, which included cross-validation with earlier samples of prisoners.[85] Although inmates with higher testosterone levels were described as more confrontational, only 5% of the 692 prisoners had committed a nonstatutory rape, and a total of 4% of men in this sample had been convicted for some type of child molestation. The percentage of sex offenders of both types was higher in the group of prisoners with the highest testosterone levels but the majority of men with high testosterone (86%) were not sex offenders.

These findings are consistent with an earlier study[86] specifically intended to investigate testosterone and violence involving 50 sex offenders in which no relation was found between plasma testosterone and violent sexual behaviour. In a review of the literature on testosterone and sexual behaviour in men, it was concluded that fluctuations in testosterone have little effect on sexual behaviour as long as the fluctuations are within the normal range and as long as a minimum amount of the hormone is present.[87]

In spite of the equivocal findings in the previously reviewed studies, considerable evidence supports the interrelation between high testosterone levels and social dominance and with low levels of social reciprocity. For example, testosterone levels in 2100 Air Force veterans decreased when they married but rose again when they divorced.[88] A more recent investigation examined serum testosterone levels in 501 adult male sex offenders.[89] Men with higher testosterone were reported to have historically committed the most invasive sex crimes and were reported to be more likely to recidivate.

However, the significance of testosterone in predicting sexual offence recidivism while controlling for age was absent in men who had completed treatment. Results of this study are hard to interpret for numerous reasons: while few in number, men with below average testosterone were excluded from the sample; high testosterone was defined as any level above the upper range (presumably even if within the standard error of the lab test); and recidivism rates were not reported for either group.

While the evidence supports some association between testosterone and aggression, a causal relation between testosterone and sexual violence has not been shown. (For a more extensive review of the association of testosterone and aggression, including a review of animal research, see Demetrikopoulos and Siegel.[90])

Until recently, most researchers have assumed that only free testosterone is biologically active.[91] However, boundtestosterone and gonadotropin-releasing hormones may also have important effects.[91] For example, in a new study examining the relation between aggression and both free and total testosterone levels in 848 convicted sexual offenders, a positive correlation was found for total testosterone, but a negative

correlation was found between free testosterone levels and recidivism.[92] In addition, a significant correlation was found between LH and recorded violence of the index offence. These results are similar to those of another study that failed to find a significant correlation between testosterone and aggression or impulsivity in a sample of rapists but which did find a significant correlation with impulsivity.[93] LH, the hormone secreted by gonadotrope cells in the anterior pituitary, is significant to this discussion because it stimulates Leydig cells in the testes to produce testosterone. It may be that some offenders suffer from a breakdown in the normal hypothalamic-pituitary-testes biofeedback loop. This may explain LH elevation in the absence of recorded abnormalities in testosterone levels.

LH, other hormones, and bioamines were all implicated in normal sexual function in men and women.[94] Surprisingly, given the frequent descriptions of sadists as being heartless, cold-blooded, and loners (compare Brittain[95]), and given the presumed association of oxytocin with bonding (compare Carter[96]), there have been no investigations of this hormone in men and women with sadism and (or) psychopathy (another syndrome with similar descriptors).

Neurological Explanations and Investigations

Several surveys of sexual sadists have noted a high frequency of signs indicative of neurological abnormalities. The Gratzer survey[97] found 55% of the sadists in that sample had abnormal neurological findings, primarily suggestive of temporal lobe abnormalities. This is particularly significant because sexual arousal in males presented with visual stimuli has been shown to be associated with bilateral activation of the inferior temporal cortex, the right insular and inferior frontal cortex, and the left anterior cingulate cortex.[98] Considerable evidence supports the role of temporal-limbic neural pathways in sexual arousal[99] as well as in aggression (see Siegel[100] for a review).

Neuroimaging studies of violent offenders has been summarized in a chapter on brain imaging.[101] Among 8 studies, only one dealt explicitly with criminally sadistic offenders.[102] This study included 22 sadistic offenders, 21 nonsadistic sex offenders, and 36 nonviolent, nonsex offenders. Sadistic offenders were more likely than nonsadistic offenders or the control group to have right-sided temporal hom abnormalities (41%, compared with 11% and 13%, respectively).

However, significantly more nonsadistic offenders (61%) had neuropsychological impairments on the Luria-Nebraska test battery, compared with the sadists (17%) or the control group (17%). While the other studies reviewed in this series did not explicitly examine sadists, it is notable that temporal lobe abnormalities were also described in other sex offender groups.[103–105] Raine[101] also summarized 6 PET scan, regional cerebral blood flow, and MRI studies.

However, of these, only one studied a diagnosed sexual sadist. A flurodeoxglucose PET scan of a sexual sadist was compared with scans of 2 male university students with

no known paraphilic interests.[106] All 3 men were presented with an erotic (nonsadistic) audiotape. Although all 3 men showed evidence of sexual arousal as evidenced by simultaneous circumferential penile plethysmography, the 2 men without sadism showed more right hemisphere lateralization than the man with sadism. Unfortunately, the investigators did not present the study participants with stimuli that were differentially sexual stimulating (for example, sexually sadistic materials).

As in other studies reviewed above, temporal lobe dysfunction was noted in one PET scan study involving violent patients[107] and in another, involving computed tomography, MRI scans of patients with organic brain syndrome who were violent.[108] In addition, neuroimaging studies showed selective frontal lobe dysfunction in murderers,[101] violent study participants,[107] and sex offenders including rapists.[105]

Complex Interactions

A frequently cited study compared offender and offence characteristics of 29 men known to have committed sadistic criminal offences with a control group consisting of 28 men with nonsadistic criminal sex offences.[97] These in turn were compared with a previously published uncontrolled sample of 30 men diagnosed sexual sadism.[50] Many characteristics listed in the Dietz et al paper[50, p 50] were found to occur with equal frequency in nonsadistic offenders. The 4 characteristics found more frequently among sadists in both studies but not in the control group on nonsadistic offenders were: physical abuse in childhood; cross-dressing; history of peeping (voyeurism); and obscene phone calls or indecent exposure. With the exception of cross-dressing, which is a comparatively rarely reported activity among nonsadistic sex offenders, the other 3 characteristics are fairly high-frequency sex offences that are perhaps notable only for the fact that they often do not in themselves result in referral to specialized forensic assessment units.

Cross-dressing occurs with high frequency in 2 groups of men: those with gender identity disorder and those with transvestic fetishism.

Gender identity confusion in men with sadism has been noted in other descriptive studies (for example, see Langevin[38] and Langevin et al[109]). Extreme cases of gender identity confusion were reported in men who have been described as sadists and whose crimes included dismembering female body parts, cannibalizing, and even attempting to wear body parts of their victims. Perhaps the most well known was Edward Theodore Gein, after whom the fictional sadistic killer in The Silence of the Lambs was modelled.[110]

The high frequency of transvestic fetishism (DSM-TR 302.3) is interesting for a different reason. Transvestic fetishism is a paraphilic sexual disorder characterized by sexual arousal from wearing clothes of the opposite sex.[111] Transvestic fetishism often cooccurs with sadomasochism. Evidence of both disorders is often found in men who fatally self- asphyxiate themselves.[112]

This finding is notable for 2 reasons. The first is the fact that criminal sexual sadists are often described as resorting to strangulation as a frequent or preferred method of incapacitating or killing their victims. In the Dietz study,[50],[p 50] cause of death in 130 victims was 32.3% by ligature strangulation, 26.1 % by manual strangulation, 1.5% by hanging, and 0.8% by suffocation (although it should be noted that 57 of the murders by hanging or manual strangulation in this series were committed by 2 of the men in the study).

Is there a reason why criminal sadists appear to be so interested in asphyxia or strangulation? Obvious answers may be that these murder methods are compatible with sexual arousal from control of another person.

A second intriguing explanation results if the problem of sexual sadism is reformulated from one of problems owing to deviant sexual interest to one of problems arising from failure to become sufficiently aroused by conventional scenarios. In men with normal sexual function, at the time of orgasm, serum norepinephrine increases up to 12 times the baseline level.[113–115] Similar changes in biogenic amines were also shown in women at the time of orgasm.[116]

If an individual was unable to reach orgasm owing to insufficient autonomic sympathetic activity during sexual activity, it is conceivable that an individual might try to heighten release of norepinephrine. One of the most effective ways to do so is by breath holding or self-asphyxia. This strategy of purposefully engaging in dangerous or frightening activities to accentuate subjective simulation was noted in various paraphilic disorders including sexual sadism[117] and specifically transvestic fetishism.[118]

This theory gains some support from a study in which patients with Huntington disease were found to develop paraphilic behaviours only after the onset of inhibited orgasm.[119] For at least some sexual sadists, cruel or humiliating acts may produce sufficient autonomic arousal during sexual activity to facilitate or enhance orgasm thereby reinforcing the problematic behaviour.

Treatment

Reviews concerning the treatment of violent sex offenders, especially sexual sadists, tend to be pessimistic. However, this may be due more to the fact that convicted sadists are less likely than other offenders to be released from custody. The section of the Criminal Code of Canada dealing with applications for designation as a dangerous offender lists one of the criteria as the predicate crime was "of such a brutal nature as to compel the conclusion that the offender's behaviour in the future is unlikely to be inhibited by normal standards of behavioral restraint."[120]

Clinicians have been shown to be more likely to make a diagnosis of sadism if the patient had committed an offence that was brutal (compare Marshall and Kennedy,[16] Marshall and Hucker,[17] and Marshall et al[18]). Therefore an offender with a diagnosis of sadism presumably is more likely to fulfill criteria for designation as a dangerous offender. This designation allows the sentencing judge to impose an indeterminate sentence, the most severe in Canadian law.

Offenders designated as dangerous offenders receive lower priority in treatment programs (as they are not likely to be released imminently). Therefore they are less likely to be able to show they have responded to treatment. Regretfully, the fact that treatment response has not been demonstrated is frequently misinterpreted as meaning that treatment is not available or effective.

In fact, available evidence suggests that at least some sexual sadists do respond to treatment. Case studies of successful treatment of sexually violent men with or without sadism have been published (for example, see Kafka[121]). One case report is of interest because it involved a man who entered treatment for a nonsexual and certainly nonsadistic problem.[122] After treatment with buspirone (prescribed for anxiety) he spontaneously reported that sadistic fantasies involving torture of his sister had disappeared. The fantasies had been clearly sadistic, focusing on humiliation and cruelty. He reported that he would fantasize about breaking his sister's bones while masturbating and that he would imagine the sound of her femur snapping at the time of orgasm.

Because he had kept a detailed and dated diary that included his fantasies, it was possible to independently verify that his sadistic fantasies had decreased in both frequency and severity in association with treatment. While case reports are usually of limited scientific value, this one is unique in that the medication was prescribed in a triple-blind fashion (that is, the prescribing physician did not know about the sexual disorder, the patient did not know the medication might help his sadistic fantasies, and neither knew the patient's diary would be used to assess his response to treatment).

Effective treatment of any condition is dependent on accurate diagnosis. A major issue in any assessment of treatment options is that sexual sadism (according to DSM-IV) and sadomasochism (according to ICD-10) explicitly require that the disorder must be of sufficient severity or kind to cause problems owing to nonconsensual harm of some type.

However, many individuals self-identify themselves as sadists or masochists while strongly advocating only consensual sexual activities. Examples of this issue come from self-identified members of the so-called BDSM community. BDSM is a portmanteau acronym for Bondage-Discipline, Dominance-Submission, as well as Sadism-Masochism. Clearly these headings define various sexual interests. As a side note, the Marquis de Sade, had he sought psychiatric attention, would have most likely been diagnosed as a sexual fetishist or paraphilias not otherwise specified rather than as a true sadist, as his primary preoccupation involved processes of elimination and because his writing appears to have been strongly motivated by his views on politics and religion rather than on sex.

In contrast to sadists as defined by the DSM-IV or ICD-10, most individuals who belong to BDSM communities repeatedly cite a rule concerning sexual relations: "safe, sane and consensual."[123, p 3] While patients who meet psychiatric criteria for sexual sadism or sadomasochism may be sane (in the sense of not ordinarily meeting criteria for insanity defences), by definition, without treatment they are neither safe nor consensual. These and other issues concerning the noncriminal BDSM community have recently been summarized.[124]

Returning to Table 1, the diagnosis of sadism, based solely on observed behaviour is problematic, particularly if the behaviour is assessed without attention to the context in which the behaviours occurred and without regard to an assessment of the mental state of the patient. For example, individuals with intellectual disability (who often have impaired verbal ability to negotiate consent) are vulnerable to being misdiagnosed as sadistic (as the crucial characteristic of sadism is nonconsensual sexual activity). This concern has led to a reanalysis and proposed revision of DSM diagnostic criteria in this population.[125]

Recalling that the essential feature of sadism is nonconsensuality, prior to initiating treatment, other possible causes of nonconsensual behaviour should be investigated, including dis-inhibition (such as, owing to stroke or dementia), intoxication, personality disorders, and major psychiatric disorders. Nonpsychiatric conditions such as criminality should also be eliminated or at least accounted for.

Assuming the person being assessed meets diagnostic criteria for sadism after elimination of competing or complimentary explanations for observed or reported activities, treatment is similar to that of other sexually motivated problematic behaviours.

Several guidelines for treatment approaches have been published (compare Marshall et al[126] and Serin[127] for reviews). The efficacy of these treatment options was also recently summarized.[128] A useful algorithm to assist in decisions about intrusiveness of intervention is also available.[129]

Table 4 Recommendations for future research

Study groups should be homogenous.

Study groups should be constituted in a way that allows generalization to clinical populations.

Sexual sadism should be distinguished from violence.

Studies should test falsifiable hypotheses.

Alternate or complimentary hypotheses should be entertained.

Summary

Recommendations for future research are summarized in Table 4.

This review indicates that sexual sadism, as currently defined, is a heterogeneous phenomenon. To date, research has often failed to clearly define the population under study and therefore conclusions are limited. This makes generalization from research findings to specific patients problematic. Of particular concern is the possibility that correlations and outcomes from studies consisting of samples of convenience may be interpreted as verified causal relations between unconventional sexual interests and nonconsensual sexual violence. Understanding the ways in which sexually sadistic interests are established and maintained will certainly aid not only in the development of increasingly effective treatments but also in the establishment of strategies to aid in the prevention of harmful sexual behaviours and the promotion of healthy and fulfilling lives for everyone.

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Resume: Sadisme, sadomasochisme, sexe et violence

La prevalence reelle du sadisme sexuel (et de ses variantes) est inconnue. Toutefois, tous les cliniciens vont rencontrer, sciemment ou non, des patients souffrant de ce trouble. II est regrettable que peu de programmes offrent une education adequate en matiere de sexualite normale, et qu'encore moins de ces programmes procurent une formation dans revaluation et le traitement des interets sexuels pathologiques. Cette etude synth^tise les theories actuelles sur les etiologies possibles du sadisme sexuel criminel et les implications qui en resultent pour le diagnostic et le traitement de ce trouble sexuel. Elle comprend une revue des theories sur les motivations du sadisme sexuel criminel, les modeles de reponses, et la physiologie, y compris les facteurs neurophysiologiques possibles et les interactions plus complexes. Cette etude met principalement l'accent sur les etudes scientifiques du sadisme sexuel publiees en anglais. II faut noter que mon utilisation du terme sadisme renvoie a une agression sexuelle sans consentement.

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