



The Use of Medication for the Treatment of Sex Offenders: Ethical Issues and Controversies

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This chapter will cover the topic of using medications for the treatment of sex offenders (the term “chemical castration”, despite its negative connotation, is still used in scientific literature). After a brief historic background, it will focus on the use of medications (mainly antilibidinal medications but also antidepressants, anxiolytics and neuroleptic medications) to modify sexual drive. Such medications are currently used either voluntarily or coercively depending on the prevailing legal framework.

Sex offenders quite often are offered medication as a means to increase their autonomy, as an alternative to imprisonment or as a condition for their parole or discharge from hospital settings, with the expectation to improve outcome. The use of such medication for the treatment and management of paraphilias or other sexual deviant behaviours is rarely in isolation and often part of a complex care plan that includes psychotherapeutic and psychological interventions.

In this chapter, we will address ethical concerns over the prescription and use of medications in sex offender populations, especially in prison, in secure hospital settings and later in the community. We will focus on issues around consent, coercion, rationale and medical responsibility.

4.1 Background

Castration has been used throughout the centuries as a form of punishment, as well as for social or medical reasons. Surgical castration, the removal of the testes or parts of the core of the testes, preceded chemical castration, the use of medication

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A. Igoumenou (ed.), *Ethical Issues in Clinical Forensic Psychiatry*,
https://doi.org/10.1007/978-3-030-37301-6_4

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to reduce sexual desire, fantasies and sexual functioning. Surgical castration was used in many cultures over the centuries and for many different reasons, including risk reduction or even artistic performance. Many ancient cultures, for example, used eunuchs to guard women's chambers or act as chamberlains. Male choir members were castrated in the eighteenth century in order to preserve their phonetic abilities and not have them changed during puberty ("castrati") (Scott and Holmberg 2003). In some ancient cultures, the captives of war were castrated as a punishment. Evidence suggests that surgical castration was used in the USA in the 1800s for social control reasons: castration of slaves when suspected of having sex with white women.

Focusing on offender populations, the use of surgical and later chemical castration for the management of sexual arousal and functioning of criminals, especially sex offenders, is not a new phenomenon. The USA used castration of prisoners as a punishment from 1899; it was initiated around the time that the eugenics movement was flourishing.

Eugenics movement was an American initiative of the late nineteenth century based on the ideas of Sir Francis Galton, a British scholar who studied the upper classes of Britain. Sir Galton introduced the term "eugenics" in 1883 which means "well born" and advocated that people who held the elite position in society had good genetic makeup that should be bred so that future generations possess the desired traits and humanity advances. His ideas never materialised in Britain but became the seed for the eugenics movement in America. Charles Davenport, a prominent biologist, led the movement alongside Harry Laughlin, a former teacher and principal.

Disparate from Sir Galton's plan, the eugenics movement in America was dedicated to eliminate "undesirable" or "negative" traits from the human race (including mental disability, dwarfism, promiscuity, pauperism and criminality) (Norrgard 2008). To that effect, studies were funded from corporations, the elite societies and private citizens to identify who possessed the "undesirable" traits. In 1910, the Eugenics Record Office (ERO) was established in New York (funded by Charles Davenport) with main mission to track family histories. Their purpose was "to improve the natural, physical, mental, and temperamental qualities of the human family" (Norrgard 2008). From these family histories, they found out that the "undesirable" traits, which they perceived to be genetically transmitted rather than a by-product of the society, were more prevalent in poor families, those of low socioeconomic status and those from ethnic minority or immigrant groups (Genetics Generation n.d. Introduction to Eugenics. <http://knowgenetics.org/history-of-eugenics/>).

In order to restrict these "undesirable" traits, they reinforced immigration laws but also started sterilisation programmes. Sterilisation programmes were operating in 33 states during the twentieth century, and it is believed that as many as 65,000 Americans underwent sterilisation. In most states, such programmes were run by the government and did not require people's consent. While the first to undergo the sterilisation procedure were the mentally ill, it quickly spread to include promiscuous individuals, blind, deaf, poor, those that suffered with alcoholism, criminals and also ethnic minorities (mainly African American women).

The eugenics movement started gradually losing popularity and lost scientific credibility and public/political support by the start of World War II. The fact that Hitler embraced some of the eugenics principles may have had a role to play. Although the last forced sterilisation under the eugenics movement was performed in 1981, they were stopped being used largely in the 1960s.

In Europe, surgical castration as a method of management of sex offenders was used first in Switzerland in 1892. It started being used more widely as a treatment at the beginning of the twentieth century; offenders were given the choice between surgical castration and imprisonment, although probably they did not have entirely free choice. From Denmark (the first European country with a castration law in 1929), its use spread quickly to Germany (1933), Norway (1934), Finland (1935), Estonia (1937), Latvia (1938), Iceland (1938) and Sweden (1944). It was also used in the Netherlands and the Czech Republic (Le Marie 1956; Weinberger et al. 2005). The main goal was to diminish sexual urges understood to be associated with sexual offending. Denmark and Germany also lead the way with research on the impact of the intervention; besides, they were the two countries with the most use of castrations (Weinberger et al. 2005; Harrison 2007). Since then it has stopped in most countries, it remained to be of limited use in Germany and Czech Republic (Aagaard 2014).

The theory behind using surgical castration to reduce sexual recidivism is based on the fact that by removing the testes (or parts of the core of the testes) of the offender, there will be reduction (even elimination) of testosterone levels that leads to reduction of sex drive, deviant fantasies and therefore sexual offending (Weinberger et al. 2005; McMillan 2013).

It is worth mentioning that the use of surgical castration did not only concern high-risk sex offenders, but it was also applied to mentally ill or individuals with learning disability or even homosexuals.

In 1944, a substance called diethylstilbestrol (progesterone compound) was used to control sexual behaviour in men. This was the first documented use of medication for that reason. Fifteen years later, Germany started using anti-androgens for males with paraphilias, and at the same time an American researcher (John Money) used medroxyprogesterone acetate (MPA) for the treatment of paraphiliac behaviour (Scott and Holmberg 2003).

In 1996, California enacted legislation requiring that offenders convicted of repeat sexual crimes against children have either surgical or “chemical castration” (California Penal Code, Section 645). This legislation did not initially require physician to examine the offender and make recommendations. It therefore imposed a medical treatment without medical consultation and for that matter without evidence that it may work on offenders that did not choose to have it (Berlin 1997). Notwithstanding the violations of offenders’ constitutional and human rights, it violated the physician ethics as it allowed nonphysicians to prescribe medications (Miller 1998). As expected, this piece of legislation received criticism from the medical community who recommended careful planning, using existing evidence to address the problem, and counselling with professionals if a medical treatment was to be used. They also advocated that such treatment should

not be imposed but rather be made available to offenders that needed it or would like to have it (Berlin 1997).

California however was not the only state enacting legislation imposing medication on male sex offenders. Eight legislatures passed similar laws (Montana, Oregon, Georgia and Wisconsin permit the use of “chemical castration” only; Florida, Louisiana, California and Iowa allow either “chemical castration” or voluntary surgical castration; and Texas allows for voluntary surgical castration), and at least 23 others have considered them within the first year. Of the nine states that made provisions for surgical or “chemical castration” of offenders, only Texas limited it to voluntary intervention under all circumstances and made provisions for the consent process (Scott and Holmberg 2003; Lai 2014).

A decade after California enacted its legislation, Poland imposed treatment with anti-androgenic medications for some sex offenders, particularly those with children victims. At the same time, high-profile cases in France brought up discussions about compulsory treatment for sex offenders. Czech Republic has established chemical and surgical castration of sex offenders in psychiatric hospitals under the realm of “protective treatment”. At the same time, the Department of Health supported in England an initiative to make available to sex offenders medications to manage sexual preoccupation, deviancy and sexual arousal on a voluntary basis (Grubin and Beech 2010). The difference with the US legislation was that it relied heavily on medical diagnosis and medical testimony that advised on evidence of whether “medication” can benefit the offender (Daley 2008).

Contrary to Europe and North America, Asia for the first time introduced “chemical castration” in 2010. Korea was the first country to develop legislation for the use of drugs to reduce sexual recidivism in offenders whose victims were children (initially under 16 years old and since 2013 expanded to include victims aged 19 years or younger). In Korea, medications are imposed and consent from the offender is not required (Lee and Cho 2013).

Similarly, in Australia (Western Australia, New South Wales, Victoria and Queensland), existing legislation covers the provision of “chemical castration” for specific categories of sex offenders (e.g. sex offenders with child victims). The consent of the offenders is not explicitly sought; however, scholars from the continent argue that without consent it is impossible to administer such medications (Lai 2014).

Today, American states including Georgia, Wisconsin and Montana, alongside European countries including Denmark, Sweden, Spain, Italy, Germany, England, Hungary and Czech Republic, offer androgen deprivation therapy as a “formally optional” intervention (Lai 2014). Lai (2014) and Douglas et al. (2013) used the term to describe the occasions that medications are offered to sex offenders “where no link is made between refusal to consent to androgen deprivation therapy and remaining incarcerated for the remainder of their sentence”.

Other countries however impose androgen deprivation therapy as a condition for release, so that some offenders cannot be released without taking it and they will be imprisoned again if they stopped the treatment after release. Such countries include the American states of Florida, Iowa, Oregon, California and Louisiana and

countries such as Belgium, Poland, South Korea and Australia (Western Australia, New South Wales, Victoria and Queensland) (Lai 2014).

In Europe, therapeutic interventions traditionally have been more prevalent than in Great Britain or North America. McAlinden (2012) attributes this to the fact that European countries follow a more medical approach to managing sex offenders with less weight placed on the social, legal and moral dimensions of the problem (McAlinden 2012). However, in the last few decades, practice in both Europe and the USA has turned again to more punitive approach, phenomenon that McAlinden (2012) attributes to an increase of the “sex offender problem” but also to the inconclusiveness of treatment effectiveness.

The British Offender Personality Disorder Pathway recommended in their recent guidance that prescription of medication to manage sexual arousal (MMSA) should be “completely voluntary” (Skett et al. 2016). Practice seems to be moving therefore from mandatory “chemical castration” that was used both as treatment and as punishment to “MMSA” as a completely voluntary treatment. The issue of consent in this case though arises, as will be discussed below.

4.1.1 Effectiveness of Existing Treatments

Research on recidivism rates or quality of life and sexual functioning of surgically castrated men is sparse. Heim, nearly 40 years ago, studied the sexual behaviour of 39 released sex offenders who volunteered to have surgical castration while imprisoned in West Germany. The participants reported significantly reduced frequency of sexual thoughts and acts (masturbation, coitus) as well as impaired sexual arousal and desire. One third of the participants reported being able to have sexual intercourse. He also found that sexual behaviour was affected only in males that were castrated between the age of 46 and 59. Helm concluded that his findings “do not justify recommending surgical castration as a reliable treatment for incarcerated sex offenders” (Heim 1981).

In the last few decades, the clinical and research interest in effective ways of managing sexual arousal in sex offenders has increased. Pharmacological methods have been in the focus as they are seen as a more immediate and more effective solution than psychotherapeutic and sociological interventions (Furby et al. 1989; Hall 1995; Hanson and Bussiere 1998; Hill et al. 2003; Lösel and Schmucker 2005) and less ethically controversial compared to surgical castration. To add to the equation, victims of sexual crime and the society in general ask for more effective methods of reducing sexual recidivism, considering the effects each one of these crimes has on individual, community and societal level.

From the non-pharmacological interventions, only cognitive behavioural techniques and relapse prevention have been tested in adult sex offender populations, albeit with conflicting findings among studies (Grossman et al. 1999; Quinsey et al. 1993; Gallagher et al. 1999; Lösel and Schmucker 2005; Mann et al. 2010). Such interventions (contrary to medications and surgical castration that aim to diminish sexual drive) focus on modifying the offender’s behaviours. They include aversion

therapy and covert sensitisation, imaginal desensitisation, masturbatory reconditioning, cognitive restructuring, social skills training, victim awareness or empathy, sex education, lifestyle management and relapse prevention (Grossman et al. 1999). Cognitive behavioural techniques showed promising results in recidivism reduction (Hanson et al. 2002; Lösel and Schmucker 2005), although they seem to be more effective in medium- to low- and medium- to high-risk groups (risk stratified according to Static-99) and not significantly effective in low- and high-risk groups (Friendship et al. 2003). In the last decade, a new treatment for antisocial children and adolescents showed promising results in reducing problematic sexual behaviours and sexual recidivism (Letourneau et al. 2009; Walker et al. 2004). Multisystemic therapy (MST) places emphasis on family work to reduce deviancy (Fanniff and Becker 2006; Henggeler 2012). Such intervention has not been tested in adult sex offender populations or against CBT. Evidence regarding the effectiveness of psychodynamic and psychoanalytic models, as well as family-based therapies, is lacking.

Alongside the question of whether or not psychological and pharmacological treatments work for sex offenders, there is also the question as to which treatment works best and for which type of offenders (and evidently under which circumstances and what duration). A recent review from Kim and colleagues looked into the effectiveness of treatment approaches for sex offenders (Kim et al. 2016). Their review is an update of a previous publication by Craig et al. (2003). Kim et al. concluded that medical interventions such as surgical castration and hormonal medications were more effective than psychological treatments. This finding corresponds to a previous meta-analysis by Lösel and Schmucker (2005) that showed larger effects on recidivism reduction with biological than psychological interventions. Kim et al. argued, however, that despite not being as effective as hormonal treatments, CBT remains the preferred treatment option due to reluctance to prescribe and ethical considerations that posit obstacles to high-quality research (RCTs are sparse due to ethical issues involving allocation to treatment or placebo arms) (Kim et al. 2016). They recommend primary research to focus on identifying which specific treatments (or combinations of) are more effective for specific groups of sex offenders.

Initial use of medications to only manage risk now moved to using medications to reduce subjective distress to the offender, reduce sexual preoccupation and enable engagement in therapy and rehabilitation. Such treatment can not only improve the offenders' life and rehabilitation but also indirectly provide public safety.

Alongside medications and psychological interventions in prisons and other institutions (detention centres, forensic psychiatry hospitals, approved premises), offenders that committed sexual offences are subject to community restrictions or "post-prison commitment" to ensure public safety and adherence to management plans (Becker and Murphy 1998). As shown by recent studies, released prisoners often return to the same criminogenic environment they came from or are released to neighbourhoods with similar disadvantages. This problem is usually amplified in sex offenders and is understandable that it does not assist their rehabilitation and deterrence from further crimes (Clark and Duwe 2015). It is therefore a holistic

approach that is needed in order to rehabilitate sex offenders, and factors that need to be addressed include housing, education, employment, medications, psychosocial interventions and therapy. Subsequently, there is a pressing need to improve and further fund prison programmes and post-release programmes (including step-down programmes, halfway houses) in order to amplify the effectiveness of interventions for sex offenders.

4.2 Neurobiology of Sexuality

Human sexual arousal, drive and behaviour have attracted the interest of clinicians and researchers alike, not only because it is integral part of human life and procreation but also as it is closely associated with quality of life and with overall health and wellness. They are essential parts of our existence, and although neurobiologically programmed, they are still shaped and coloured by our experiences.

Both male and female responses to sexual stimuli happen in four stages: excitement, plateau, orgasm and resolution, with desire, previous experiences and motivations playing an important role (Kingsberg et al. 2015). Although in both males and females sexual functioning involves neurochemical activity that implicates the brain, the central nervous system and the erogenous zones, the neurobiology of sexual functioning for males and females is better understood when discussed separately.

4.2.1 Males

Sexual functioning in males is rather complex and not fully explained. Despite the fact that sexual arousal and behaviour are influenced by a number of different hormones and neurotransmitters (including oxytocin, glutamate, endorphins, GABA, noradrenaline and acetylcholine), it can be simplistically explained by the action of two hormones: testosterone and dihydrotestosterone. Testosterone is the hormone predominantly responsible for the development of male gender characteristics. Its action starts in utero and is very important during puberty in order for the secondary gender characteristics to develop. It is also important for sexual functioning in males.

Primarily, testosterone in males is produced in the testes. Hypothalamus releases gonadotropin-releasing hormone (GnRH) that results in the release of luteinising hormone (LH) from the anterior pituitary gland (alongside follicle-stimulating hormone, FSH). LH stimulates the Leydig cells of the testes and testosterone is secreted. Small amounts of testosterone (approximately 5%) are also secreted by the cortex of the adrenal glands (Harrison 2007).

It has adrenergic effects, so it is associated with sexual development, sexual functioning and libido. It also has anabolic effects; it is therefore involved in tissue growth.

Testosterone (as well as other androgens) acts on a number of receptors that are found throughout the body, including on the spinal cord, the penis and also the brain (e.g. midbrain and hypothalamus). Testosterone seems to act synergistically with dopaminergic systems. The activation of dopaminergic systems in the

midbrain and the limbic system can activate appetitive drives including sex. Dopamine is also involved in the mechanisms of arousal and sexual behaviours, including the suppression of prolactin (a hormone responsible for reduction of sexual arousal and sexual ability). Testosterone is also shown to act antagonistically to serotonergic systems. Serotonin is a neurotransmitter that has been extensively studied in relation to mood and anxiety disorders and also impulsive aggression. Serotonin is a complex neurotransmitter as it acts differently on different types of serotonin receptors. Overall, it is believed to inhibit appetitive drives, including sex; to reduce libido and sexual arousal; and to delay (or inhibit) ejaculation (Bancroft 2005, 2009).

Therefore, reduction of testosterone levels either due to surgical removal of the testes (or parts of the core of the testes, as in testicular pulpectomy) or due to medications decreases libido, erections, ejaculations and spermatogenesis. Of note is that even after surgical castration some men will still be able to have erections and sexual intercourse, mainly due to testosterone produced by the adrenal glands.

4.2.2 Females

Similar to males, sexual functioning in females is complex and not fully understood. Researchers and clinicians have concluded that it depends on interactions of a variety of factors including neurobiological, psychosocial and somatic.

The activation of specific brain areas during exposure to sexual stimuli correlates to subjective sexual arousal in females but interestingly not necessarily to physiological (genital) arousal. This differentiates females from males, and some researchers hypothesised that “women perceive engorgement differently than men” (Levin et al. 2016). The main brain areas activated during female arousal and response include the hypothalamus, the amygdala, the thalamus, the anterior insula, the ventral striatum, the anterior cingulate cortex, the orbitofrontal cortex, the occipitotemporal cortex, the superior parietal lobe and the inferior frontal gyrus (Levin et al. 2016). The reward circuitry (including hypothalamus, basal ganglia—mainly striatum—prefrontal cortex, amygdala and hippocampus) plays a pivotal role (Kingsberg et al. 2015). The strength of the brain activation varies according to the phase of the woman’s menstrual cycle. Research however has not yet reached consensus on which brain areas are activated during genital stimulation and orgasm (Levin et al. 2016).

Similarly to males, excitatory pathways in females are also modulated by neuromodulators such as noradrenaline, oxytocin (stimulate arousal and sexual response), dopamine and melanocortins (which stimulate desire and attention), whereas inhibitory pathways are modulated by neuromodulators such as serotonin (controls satiety and plays part in response to inhibition), opioids (facilitate sexual rewards and also inhibit the hypothalamus post-orgasm to stop sexual arousal and desire) and endocannabinoids (induce sedation) (Kingsberg et al. 2015). In females, endocannabinoid levels are also associated with sexual arousal (Kingsberg et al. 2015).

Considering the fact that sexual arousal and behaviour are influenced by a number of different hormones and neurotransmitters (including oxytocin, glutamate, endorphins, GABA, nitric oxide, noradrenaline and acetylcholine), it seems that in females also testosterone plays a pivotal role (modulates the strength of brain responses to stimuli) (Levin et al. 2016). As is known, women produce in their ovaries 50% of circulating testosterone. According to recent studies, women with low levels of testosterone (due to medical reasons, medications or ageing) had reduced sexual desire and arousal, as well as sexual interest and pleasure (Kingsberg et al. 2015). In women, oestrogens also play a role in sexual functioning, especially oestradiol that affects the peripheral sexual response (Kingsberg et al. 2015).

Many researchers have argued that females' sexual responses are less spontaneous and more responsive than men's. Subsequently, psychological and social factors alongside the physiological response to sexual stimuli play an important role (Kingsberg et al. 2015; Knack et al. 2015). In females, therefore, mental states including depression, anxiety and stress can have a big influence on sexual functioning. Other factors such as attention, conditioned learning, early negative experiences (including childhood sexual abuse), relationship difficulties and personality traits are equally important (Levin et al. 2016).

4.2.3 Why Consider Medications for Sex Offenders?

As discussed, testosterone is an androgen that plays a pivotal role in male (and female) sexuality. It therefore has been considered as a possible target when developing treatments to reduce sexual arousal, manage sexual preoccupation, and by extension sexual offending. Research of males with pharmacologically induced hypogonadism revealed that such individuals indeed presented with reduction in sexual arousal, sexual motivation and sexual fantasies, attributed to the reduction of testosterone levels (Jordan et al. 2011).

Although the relationship between testosterone and sexuality is clear, the one between testosterone and aggression (physical and sexual) is rather complex. Research findings are diverse with some studies such as the systematic review by Wong and Gravel (2018), suggesting that there is no significant relationship between testosterone and sexual offending (Wong and Gravel 2018). A self-criticism for the Wong and Gravel review was that this review used a very small number of studies comparing testosterone levels between offenders and non-offenders and pooled research that includes diverse sex offender populations and different types of comparison groups and did not take into consideration single offence or repeat offenders. The authors conclude "it would be premature to state that no relationship exists between testosterone and sexual aggression" (Wong and Gravel 2018, p. 161), especially as testosterone levels may differ in different types of sex offenders; their subgroup analysis revealed, for example, differences in testosterone levels between child molesters and rapists. Other research, like the one by Bain and colleagues, suggests that sex offenders have higher levels of testosterone than non-sex offenders

(Bain et al. 1988a, b), indicating that this hormone can be a target for treatment but also highlighting the fact that further research is much needed.

Recent research by Kingston et al. (2012) opened new horizons in the understanding and treatment of sexual arousal and functioning in sex offenders. They looked at the relationship between precursor hormones (LH) and sexual recidivism and found that levels of LH were significant predictors of recidivism (both sexual and violent) (Kingston et al. 2012).

4.3 Medications for the Management of Sexual Arousal in Sex Offenders

4.3.1 Who Should Be Considered for Medications?

The aetiology for sexual offending is unclear which subsequently has an impact on the effectiveness of prevention and treatment programmes but also on decision-making regarding who can benefit from each of the treatment approaches (and equally who should be offered what). There have been many theories on what drives a person to sexually offend, including the psychoanalytic approach, family dynamics and behavioural theories (including deficits in interpersonal and social skills), the biological theory (focusing on the role of temporal lobe and the neurotransmitters) and the trauma-related theory (a victim of a sexual crime is more vulnerable to offend). These theories drive us to one conclusion that sexual offending has multiple causes and as such prevention as well as treatment programmes have to be comprehensive (Becker and Murphy 1998).

Research has shown that medications that lower testosterone levels are effective in reducing and managing deviant sexual thoughts, fantasies and urges in high-risk sexual perpetrators (Meyer III and Cole 2008). The majority of research has been done on male offenders with paraphilic disorders (quite often involved those that committed sexual offences against children); the applicability of the results in other sex offender populations is therefore rather challenging.

The initial intention to treat only high-risk sex offenders and only those with sexual deviancy is becoming more liberal, and medications could come to be available to all sexual offenders that have the potential to benefit from them. With the focus of the treatment being the psychological and physiological characteristics and impacts of the sexual drive rather than a diagnostic classification, more sex offenders can become eligible for treatment with medications (Grubin and Beech 2010). Good candidates for medications that manage sexual arousal are, for example, offenders that present with intrusive and obsessive thoughts about sex, deviant arousal or problem sexual behaviour associated with low mood or anxiety, sexual arousal or behaviour that is subjectively difficult to manage, high sex drive and psychometrically determined sexual preoccupation (Skett et al. 2016).

In order to be able to decide who has the potential to benefit from medications that affect sexual arousal and behaviours, prescribing clinicians have to complete a

comprehensive assessment drawing information not only from the sex offender but also from all sources available.

Supplementary to the basic psychiatric evaluation that assesses for mental illness, personality disorders, learning difficulties, developmental disorders, social skills, attachment difficulties and substance use disorders, sex offenders have to undergo specific assessments that cover detailed psychosocial history, cognitive distortions and sexual behaviours (Becker and Murphy 1998). In some countries, they even undergo phallometric assessment and polygraphy (Becker and Murphy 1998). As an aid for the above assessments, psychometric tools are used including the sexual compulsivity scale (Kalichman et al. 1994; Kalichman and Rompa 1995), HADS (Zigmond and Snaith 1983) and the severity indices of personality problems (SIPP-118) (Verheul et al. 2008). This is in order to help with treatment choices rather than to profile a sex offender but also can be essential in monitoring the effectiveness of treatment.

4.3.2 Medications

There have been two major categories of medications used: the selective serotonin reuptake inhibitors (SSRIs) and agents influencing the production and effects of androgens (steroidal anti-androgen treatments, GnRH analogues). Case reports on other medications (lithium, mirtazapine, antipsychotics, anticonvulsants, naltrexone) that have been tried in the past presented weak evidence and inconsistent effects; hence, their use is either very limited or was abandoned. In this section, we will present only the medications that are currently in use.

4.3.2.1 Antidepressants and Anxiolytics

Selective Serotonin Reuptake Inhibitors (SSRIs; Fluoxetine, Sertraline)

Antidepressant medications can be an option for managing sexual arousal in sex offender populations. In the past, tricyclics (clomipramine) and lithium were used to reduce deviant sexual behaviour in sex offenders (Kruesi et al. 1992) although more success stories (regarding overall treatment satisfaction from the offender and risk reduction) reported with SSRIs (Stein et al. 1992; Kafka 1994; Kafka and Prentky 1992; Garcia et al. 2013). No major differences were found among the different SSRIs (fluoxetine, sertraline, fluvoxamine) (Hill et al. 2003).

The main mechanism of action of antidepressants on sexual preoccupation and sexual offending is by affecting serotonin levels. Serotonin affects orgasmic and ejaculatory capacity and reduces sexual arousal. It can therefore be used to target sexual deviancy and sexual preoccupation not only by reducing impulsivity, obsessive thoughts/sexual fantasies and mood-related symptoms but also by inhibiting sexual activity (Garcia et al. 2013).

SSRIs as with other medications to manage sexual arousal need to be prescribed with caution and after thorough assessment of the offender. They do not act immediately (usually improvements start being observed after 2–4 weeks), and they should

always be part of a comprehensive treatment plan including psychosocial interventions. As with other treatment indications, regular monitoring of physical health, including liver, renal and cardiovascular function, is important (Hill et al. 2003).

Fluoxetine has been the SSRI most extensively used for managing sexual arousal. Fluoxetine shares its side effect profile with the other SSRIs. These side effects include common or very common ones such as abdominal pain (dose-related), constipation (dose-related), diarrhoea (dose-related), dyspepsia (dose-related), gastrointestinal effects (dose-related), nausea (dose-related) and vomiting (dose-related). However, they also have uncommon side effects such as serotonin syndrome or very rare ones such as angle-closure glaucoma. SSRIs also have side effects of unknown frequency such as anaphylaxis, angioedema, anorexia with weight loss, anxiety, arthralgia, asthenia, bleeding disorders, convulsions, dizziness, drowsiness, dry mouth, dyskinesias, ecchymoses, galactorrhoea, hallucinations, headache, hypersensitivity reactions, hypomania, hyponatraemia, increased appetite, insomnia, mania, movement disorders, myalgia, nervousness, photosensitivity, purpura, rash, sexual dysfunction, suicidal behaviour, sweating, tremor, urinary retention, urticarial, visual disturbances and weight gain (<https://bnf.nice.org.uk/drug/fluoxetine.html#sideEffects>).

Apart from the above list, fluoxetine presents with additional side effects such as alopecia, changes in blood sugar, chills, confusion, diarrhoea, dysphagia, dyspnoea, euphoria, flushing, haemorrhage, hepatitis, hypotension, impaired concentration, malaise, neuroleptic malignant syndrome-like event, palpitation, pharyngitis, priapism, pulmonary fibrosis, pulmonary inflammation, sleep disturbances, taste disturbance, toxic epidermal necrolysis, urinary frequency, vasodilatation and yawning (<https://bnf.nice.org.uk/drug/fluoxetine.html#sideEffects>).

As SSRI effects and side effects are better known than those of the other medication options and as they are better tolerated, they are usually used as the first-line treatment. Most guidelines recommend the use of two different SSRIs before switching to either MPA/CPA or GnRH analogues (Hill et al. 2003).

Buspirone

Buspirone has been used for the treatment of sex offenders, and research indicates success in reduction of paraphilic fantasies (Fedoroff and Fedoroff 1992). Due to the lack of robust research evidence and clinical experience, its use is however limited.

4.3.2.2 Anti-hormonal Substances

Since androgens, like testosterone and dihydrotestosterone, influence sexual behaviour (and as research has shown effects even on impulsive aggression in males; Garcia et al. 2013), a reduction of the androgen effects is the focus of hormonal treatment in sex offenders. In antithesis to surgical castration, anti-androgen medication treatment is reversible, and one could argue more ethically acceptable for sex offenders that request it. As with other pharmacological treatments, they should be offered in conjunction with psychotherapy for the management of symptoms of sexual arousal of sex offenders.

The first type of hormone that was used in the 1940s to reduce sexual interest and preoccupation in male sex offenders was oestrogens. Oestrogens have anti-androgen effects, and research found some effect in reducing libido and sexual activity (masturbation) in sex offenders. Due to cardiovascular and cerebrovascular side effects, their use was abandoned. Anti-hormonal substances used today for the treatment of sex offenders are either the steroidal anti-androgens MPA and cyproterone acetate (CPA) or the GnRH analogues (triptorelin, leuprorelin, goserelin) as described below.

Steroidal Anti-androgen Treatments (Medroxyprogesterone Acetate, Cyproterone Acetate)

MPA

MPA was synthesised in 1954 and was introduced 5 years later in the USA for treatment of gynaecological problems. It was used in 1958 as a method to reduce sex drive in men, but as long-term effects were unclear, in 1974 its use was stopped as the Food and Drug Administration (FDA) withdrew their approval. The FDA reappraised its use as a contraceptive in 1992 (Daley 2008).

It works by decreasing the amount of LH and FSH released by the anterior pituitary gland and also by increasing the metabolism of testosterone in the liver, therefore reducing testosterone levels. The subjective feelings of decreased testosterone levels include reduction in sex drive and lessening of erections and ejaculations. It also reduces sperm count. All effects are dose dependent, where higher doses mean lower levels of testosterone, leading to bigger effects on sexual desire and functioning. The effects are usually observed after 1–2 months of treatment (Garcia et al. 2013).

Considering its mode of action, MPA can be effective for sex offenders who recognise that their sexual drive (or sexual desire) played a pivotal role in their offending. It would therefore not be deemed appropriate for those that either do not accept they committed the offence or those that blame the crime on factors such as drugs, alcohol or stress, and case-to-case consideration should be given for those that have offended but the offence was not sexually motivated (e.g. violent offender which committed sexual offence to assert power).

Side effects include weight gain, fatigue, lethargy, sweats, nightmares, dyspnoea, leg cramps, hypertension, insomnia, thrombosis, increased blood sugar, diabetes mellitus, hyperinsulinaemic response to glucose, irregular gall bladder functioning, diverticulitis, testicular atrophy, decrease in testicular size, hypogonadism, hot and cold flushes and shortness of breath. Research has shown that all these side effects are reversible and sexual functioning should return within 6 months. Special consideration has to be given though to the fact that all knowledge of the above side effects comes from studies where women were taking MPA as contraceptive and we need to keep this in mind when offering MPA to males. Additionally, prescription of MPA to women for contraception differs from prescribing it for managing sexual arousal in that doses in the latter case are usually more than 40 times larger than the formal case.

MPA also comes with long-term side effects including osteoporosis, gynaecomastia and obesity. Again research involving male subjects that take MPA for managing sexual arousal is scarce; hence, the long-term consequences are vastly unknown.

Cyproterone Acetate (CPA)

CPA antagonises the action of testosterone on androgen receptors. It is a synthetic steroid, similar to progesterone, that acts both as progesterone and anti-androgen. It binds directly to all androgen receptors (including brain receptors) and blocks intracellular testosterone uptake and metabolism (competitive inhibitor of both testosterone and dihydrotestosterone). It inhibits GnRH secretion and decreases GnRH and LH release, hence inhibiting the production of sex steroids by the gonads.

By reducing the levels of testosterone, there is a reduction of sexual drive, fantasies and urges. It can also lead to reduction of orgasm, pleasure in masturbation, potency and sperm production as it also may lead to sexual frustration. With both MPA and CPA, the goal is to minimise sexual deviancy, drive and preoccupation and enhance ability to benefit from psychotherapy approaches while the person retains some sexual ability (Harrison 2007).

CPA side effects include hypersensitivity reactions, rash and osteoporosis (rare). Other side effects (frequency in not known) include breathlessness, fatigue, changes in hair pattern, hepatitis, hepatic failure, hepatotoxicity, jaundice, gynaecomastia (rarely leads to galactorrhoea or benign breast nodules), inhibition of spermatogenesis, reduced sebum production, lassitude, weight changes and risk of relapse of thromboembolic disease (<https://bnf.nice.org.uk/drug/cyproterone-acetate.html#sideEffects>). CPA side effects are reported to be completely reversible, and the person may return to previous functioning a couple of months after discontinuation (Garcia et al. 2013).

Progestogens such as MPA and CPA have been used in the treatment of male deviant hypersexuality for at least five decades. Research and clinical observation suggest that both medications are similar in suppressing libido and sexual arousal in men; they differ however in their pharmacology and side effect profile (Cooper 1986). As with all hormonal medication available for managing sexual arousal, the long-term side effects of MPA and CPA are unknown.

GnRH Analogues (Triptorelin, Leuprorelin, Goserelin)

GnRH is a decapeptide that is synthesised within the hypothalamus and is secreted directly into the hypophysiportal circulation. Its secretion stimulates the secretion of LH and FSH from the pituitary. The LH drives the production of testosterone from the testicles. GnRH activity is very low in childhood and is activated at puberty. GnRH activity is controlled by feedback loops (Hill et al. 2003).

Initial administration acts on pituitary level to stimulate LH release, which results in transient increase in serum testosterone (flare). The continuous use of GnRH analogues as part of the treatment to manage sexual deviancy and arousal in sex offenders (opposing to the physiologically pulsatile secretion) inhibits the secretion of LH from the pituitary, hence decreasing plasma testosterone levels and

subsequently libido. The potency of the GnRH analogues is larger than the naturally secreted GnRH.

GnRH analogues therefore work by decreasing deviant sexual fantasies, desires and abnormal sexual behaviours. The effects are associated with the reduction of serum testosterone and are reversible (Koo et al. 2014). They are better tolerated than MPA and CPA, with major side effects related to hypoadrogenism.

The three different compounds used are triptorelin, leuprorelin and goserelin. They share similar side effect profiles. Their efficacy and tolerability have not been compared as yet in a randomised trial. Of these, only triptorelin is licenced for use in Europe for male hypersexuality with severe sexual deviation.

The side effects of triptorelin include anaphylaxis, arthralgia, asthenia, asthma, breast tenderness (males and females), changes in blood pressure, changes in breast size, changes in scalp and body hair, depression, gastrointestinal disturbances, headache, hot flushes, hypersensitivity reactions, increased sweating, local reactions at injection site, mood changes, ovarian cysts (may require withdrawal), paraesthesia, pruritus, rash, urticaria, visual disturbances and weight changes. The frequency with which these side effects present is not known. When used for male hypersexuality with severe sexual deviation, triptorelin may also cause decrease in trabecular bone density, dyspareunia, loss of libido, migraine, musculoskeletal pain, musculoskeletal weakness, oedema of the face and extremities and palpitation (<https://bnf.nice.org.uk/drug/triptorelin.html#sideEffects>).

Due to their side effect profile and especially the risk of long-term osteoporosis, the sex offender should have regular medical reviews including annual bone density scans (to compare with the baseline scan which should be taken before medication initiation). On occasion, offenders may be offered medication to prevent bone density loss, such as vitamin D, calcium or bisphosphonates (Hill et al. 2003).

Administration should always follow informed consent and should be part of a more complex treatment plan (residency restrictions, tagging, polygraph, psychotherapy [individual, group, therapeutic community] and sex offenders' registry). In all cases, the prescriber should keep in mind that none of the medication is optimally effective on its own and they should be given in conjunction with comprehensive psychological treatments in offenders that have the potential to benefit. They should also monitor closely for side effects (short and long term) and consider how some of the side effects are worsening with the length of treatment (e.g. osteoporosis).

Good-quality trials comparing the effectiveness of the different medication options are much needed, as is research on their long-term side effects and benefits.

4.4 Use of Surgical and Chemical Castration in Legal Settings

There are different approaches in understanding and managing the risks posed by sex offenders. There is, for example, the clinical approach that advocates that the risk posed by sex offenders can be due to mental or personality disorder or

endocrine disorders and hence can be assessed, diagnosed and treated so that they “can be rehabilitated and the public protected” (Petrunik 2002). Another approach is the risk management/community protection approach that advocates for community social control (includes sex offender registries, civil commitment and community notification) (Petrunik 2002). Finally, the justice approach that focuses on the offence rather than the offender and advocates that offenders should be tried in a court of law and judges should decide on the sentence. All above approaches carry a number of concerns, inclusive of human rights considerations, ethical dilemmas, increased costs (implementation, maintenance, legislation, effectiveness) and potential harms (individual for victims and perpetrators and societal) (Petrunik 2002).

Surgical castration is no longer considered one of the standard options for the management of sexual offending either from the perspective of the clinicians or the criminal justice systems worldwide, due to the number of ethical problems it carries. It has however re-emerged as a management option in the last decade, especially for those sex offenders that are considered high risk and high harm (or the sexually violent predators/sexually dangerous persons as known in the some US states) (Weinberger et al. 2005). It is available as a voluntary option for sex offenders in Czech Republic, Germany and some US states (California, Iowa, Texas, Florida and Louisiana) (Douglas et al. 2013). And despite lack of clear indications (or research) of why a person would be considered for such a radical and nonreversible treatment, there has been academic and clinical thinking on the subject (Weinberger et al. 2005). Needless to say, most take the position that the involuntary castration of sex offenders is unethical. However, even situations where the offender is incarcerated or committed to hospital carry coercive potential when surgical castration is offered. On the other hand, the lack of availability of such treatment may infringe the rights of the offenders that want it and deprive them of a treatment that could help them to regain and sustain freedom. When adding to the equation the rights of the society (and the obligations of both clinicians and the criminal justice system to protect the public from a known risk) and the argument of clinical appropriateness of such intervention, the ethical discussion gets increasingly complex (Weinberger et al. 2005; McMillan 2013). Considering that neither surgical castration nor other interventions (CBT, medications) can absolutely diminish sexual reoffending, either alone or in combination, there is a notable preference towards the least “aggressive” and potentially reversible methods.

Chemical castration has been used both as punishment and as treatment, and the question “punishment or treatment” has preoccupied scholars and clinicians alike over the last few decades. It makes a great difference who decides for the prescription of medications and how it (may) affects the offender’s sentence. When the criminal justice system decides who has it, it inevitably becomes a punishment, and of course inherent problems arise such as the following: Who is a good candidate for it, is it/ can it become cruel, is it proportionate to the crime(s) committed, what is the purpose and what are the evidence that it can achieve the goal in most if not in everyone prescribed with it? The clinical, scientific and judicial communities in most countries agree that prescription of such medications needs to be based on the advice of those that can prescribe them rather than imposed by a court of justice and offered to

offenders instead of being compulsory. Of course prescription of such medications in legal settings (courts, prisons, forensic hospitals, accommodation provided by probation) presents with ethical challenges that will be addressed below.

It is therefore evident that in order to move medication prescribing for sex offenders (we slowly abandon the term “chemical castration”) further from being used as a punishment, and although the opinion of the legal community remains important, it has to be considered within the remit of the medical profession. Psychiatrists traditionally were more involved than other healthcare professionals as medication prescribing in this case focuses on the reduction of sex drive. One should distinguish first whether the treatment of sex offenders with medications is an accepted psychiatric practice. In countries that forensic psychiatry exists as a specialty, prescription of medications to manage sexual arousal and behaviours (at least initiation and stabilisation of treatment) falls within its remit. In other countries, usually any psychiatrist can be advised regarding appropriateness for a specific sex offender. In all cases, the opinion of an endocrinologist should be sought if anti-hormonal medications are considered.

In summary, the use of medications to manage sexual arousal in legal settings should only be considered for offenders that are prone to benefit and offenders that voluntarily opt in for it and only after careful consideration and consultation with psychiatrists and endocrinologists. Such prescription should not affect the outcome of any legal proceedings (including sentencing, parole, etc.) as if this was the case true freedom of choice would cease, as is in cases of offenders that opt to take it to affect justice outcomes. It also needs to be in context of an ongoing psychotherapeutic programme rather than isolated attempt to reduce sexual preoccupation or recidivism.

4.5 Use of Medication to Manage Sexual Arousal in Forensic Psychiatry

Forensic psychiatry, as described in the first chapter of this book, is the psychiatric subspecialty that aims to identify, assess and treat individuals who are mentally unwell at any point within the criminal justice system. The prescription of medications to treat sex offenders with problems in managing their sexual arousal and sexual behaviours can seem at first somewhat different from mainstream practice in that “sex offender” and “sex offence” are neither clinical terms nor diagnoses. In this case, it seems as if a clinical solution is expected for criminological issues. Many subsequently argue that the role of doctors in prescribing medications for sex offenders is dubious for two reasons: firstly, there is a fine line between treatment and punishment, and, secondly, such treatment shifts the focus from the patient’s best interests to that of the public (Grubin and Beech 2010).

It is therefore necessary to clarify that when (forensic) psychiatrists treat sex offenders, they do not treat the offending behaviour per se (this is the job of the criminal justice system) but the psychological and physical effects of the problematic arousal that can also be associated with offending. Hence, the reduction of offending should be the by-product of treatment rather than its focus.

One of the problems in defining the role of the psychiatrist in the treatment of sex offenders is the lack of clarity of what constitutes a treatable clinical problem (it would be unethical for a doctor to prescribe medications for a societal problem). The obvious response would be a diagnosis of disorders of sexual preference. The existing diagnostic systems DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, fifth edition; American Psychiatric Association, 2013) and ICD-10 (International Classification of Diseases, 10th revision; World Health Organisation, 1992) provide definitions for sexual deviancy that focus on the unconventional nature of the drive rather than its psychological or physical characteristics (Grubin and Beech 2010). In this case, it is difficult to justify treatment with medications as they are not useful in amending the content of the drive (psychological therapies are/can be). When the focus is the debilitating manifestations of the deviant drive, such as the frequency of the fantasies/urges, the intensity of them or the inability to control arousal and sexual behaviours, then the role of biological therapies (such as medications) is clearer.

Another difficulty pertains to the restriction of medical practice if psychiatrists were to treat only specific diagnoses. Rösler and Witztum advocate, for example, that long-acting GnRH analogues together with psychotherapy are effective in controlling paedophilia, voyeurism and exhibitionism. They recommend further research in the form of controlled trials before concluding on the efficacy of pharmacotherapy for other paraphilias (Rösler and Witztum 2000). It is apparent that more controlled trials are needed to investigate the efficacy of all treatments available for each diagnosis, and this could advance clinical practice and update guidelines. However, we should also consider whether offenders that are not having a diagnosis of a disorder of sexual preference (which is more common than not) should be eligible for treatment with medications (and this should also be tested with clinical trials). Should, for example, offenders that are hypersexual or find it difficult to manage their sexual arousal and behaviours be considered for medications (Grubin 2018)? It is perhaps important to clarify that the target of treatment with medications in sex offender populations is not only specific diagnoses but also modifiable debilitating symptoms and problematic sexual behaviours. Of course explicit evidence-based scientific and ethical guidance should make the appropriate provisions.

The principles of prescribing medications to manage sexual preoccupation, deviancy and sexual arousal in prisons and in forensic psychiatry hospitals or indeed in the community are the same; the place should not restrict the options. Comparable are also the ethical issues that the prescriber should consider before such prescription, starting by whether there is a clear medical (rather than social) reason to prescribe such powerful pharmaceutical agents. Such issues will be discussed below.

The offender, no matter the place, should have a thorough psychiatric, physical, psychosocial and criminological assessment prior to any prescription of medications. As already described above, such assessments will reveal any physical health problems associated with increased sexual drive (e.g. brain injury, endocrine conditions, neurological conditions and syndromes, substance side effects) but also details about possible psychopathology, including comorbid mental illness,

personality disorders, developmental disorders, intellectual difficulties, organic disorders, paraphilic disorders (DSM 5) or disorders of sexual preference (ICD-10) and substance misuse disorders.

4.5.1 Medical Responsibility and Legal Obligations

Similar to any medical treatment, the focus is the best interests of the patient. The psychiatrist has to be competent in assessing and treating sex offenders but also has to be transparent about the treatments available and act with integrity. His role in this case is to assess the sex offender and if appropriate to provide him/her with information and options regarding available interventions. The offender (patient from the perspective of the psychiatrist) will choose freely whether to have any of the therapies provided. The role of the psychiatrist is to empower the offender/patient to reach decisions about his/her care.

It falls within the medical responsibility of the psychiatrist to explain that as with most medical interventions, absolute success cannot be guaranteed when treating sex offenders with medications or indeed any other interventions. Prescriber and offender need to be clear that not all that take the medications are benefited; some develop side effects, and some will reoffend despite all good intentions. It is the responsibility of the psychiatrist to inform the offender of all interventions available and seek informed consent (will be covered in detail below). It is also the prescriber's responsibility to monitor for benefits and side effects and safeguard the offender's physical and mental health but also to discontinue treatment if it is no longer beneficial or if it becomes harmful. One of the grey areas in prescribing medications for the management of sexual arousal is the duration of treatment. The principle is that medications are provided until it is no longer necessary. This means that potentially treatment can be lifelong. In that case, provisions should be made for the treatment and monitoring to continue being available.

Of course all other generic medical responsibilities are applicable such as the competence of the prescriber, updating knowledge and further developing skills, being transparent about the lack of robust evidence of who will benefit and who will not from the treatment, providing individualised care, confidentiality, considering the least restrictive alternatives first (unless otherwise indicated), educating about the need for psychometric validation of outcome measures, etc. The General Medical Council of the UK focuses on four domains to describe the responsibilities of doctors (https://www.gmc-uk.org/-/media/documents/good-medical-practice%2D%2D-english-1215_pdf-51527435.pdf). The first one is "knowledge, skills and performance" (make the care of your patient your first concern; provide a good standard of practice and care; keep your professional knowledge and skills up to date; recognise and work within the limits of your competence). The second involves "safety and quality" (take prompt action if you think that patient safety, dignity or comfort is being compromised; protect and promote the health of patients and the public). The third focuses on "communication, partnership and teamwork" (treat patients as individuals and respect their dignity; treat patients politely and

considerately; respect patients' right to confidentiality; work in partnership with patients; listen to, and respond to, their concerns and preferences; give patients the information they want or need in a way they can understand; respect patients' right to reach decisions with you about their treatment and care; support patients in caring for themselves to improve and maintain their health; work with colleagues in the ways which best serve patients' interests). And the fourth is on maintaining trust (be honest and open and act with integrity; never discriminate unfairly against patients or colleagues; never abuse your patients' trust in you or the public's trust in the profession).

Some of the most significant professional, legal and ethical focus points when considering prescribing medication for the management of sexual arousal and behaviours are:

1. The offenders' right to treatment. Offenders have the right to access appropriate treatments for all their medical and psychological problems during incarceration (or hospital detention). Depriving them from treatment they wish to have is equally unethical as imposing it. However, we need to keep in mind protection of offenders from "overzealous" prescribers that support prescribing for reasons over and above the offenders' wellbeing and prognosis (Yaki 1985).
2. The clinicians' duty to treat once a problem is diagnosed and where treatment is available. Here, we need to be careful that the state does not impose treatment they consider effective without the offender's consent. The clinicians' duty to treat does not supersede the offender's right to treatment when treatment can cause side effects, has impact on the offender's physical or mental health or is intrusive. This is more applicable to somatic treatments such as medications, as with psychotherapy the patient/offender needs to be willing to actively participate and benefit from it (Yaki 1985).
3. The coercion of inmates, as coercion in prison is so likely especially if a treatment is linked with freedom or privileges. This could be resolved by keeping medical treatments confidential and records available only to the treatment team and not to the criminal justice system (Yaki 1985).
4. The coercion of the physician: Research on the public views regarding chemical castration has revealed that the majority believe chemical castration is an acceptable management option for sex offenders, especially in order to reduce recidivism (Sedkaoui and Mullet 2016). Law makers have reacted to these views and to high-profile cases and created legislation for the treatment of sex offenders. Clinicians found their practice confined between public opinion and legislation on the one hand and their professional obligations to their patients on the other hand. The clinician should act with their patient in mind, and patient-centred care should dictate his/her professional ethics. He/she should prescribe only treatments that (s)he believes will be helpful and only to patients that (s)he believes that may benefit from it (Yaki 1985).

As autonomy, informed consent, free will and coercion are important ethical considerations when prescribing medication to sex offenders, especially in

environments like prisons that are considered inherently coercive, we will discuss in detail in the next section.

4.5.2 Free Will or Coercion?

The subject of free will and informed consent is very important, and it requires that the individual was presented with and understood all information needed to make a decision about the prescription of the medications and also that (s)he volunteered to take specific medications.

It is therefore necessary, and in fact an obligation of the healthcare provider, that all relevant information about medications is given to the individual in a language understandable to them and they are given the opportunity to ask questions and time to consider their options before communicating their decision. Relevant information includes the potential benefits as well as side effects, the risks involved in the treatment and information on what could be potential effects of not taking the treatment including information about alternative options. The MMSA candidate will also need to be aware of the fact that not all long-term effects of medications are known due to lack of research in the topic.

The subject of “volunteering” to take medication is a bit more controversial than the information component of informed consent. Using it as a condition for parole, or to influence parole, or as a restriction for conditional release can be seen as a form of punishment or coercion than a treatment, hence unacceptable, and one could argue against human rights. But how coercive can be offering medication to a sex offender that committed serious sexual crime(s) or received a lengthy prison sentence? Can free will and voluntary consent be achieved in this matter? Some offenders, for example, may believe (or made to believe) that taking MMSA voluntarily indirectly influences criminal justice decisions; that would not be completely absurd.

There is a debate among clinicians and scholars of whether the bioethics principle of autonomy is compromised on occasion that MMSA is proposed. Of course where offenders request medications because they feel uncomfortable (or indeed they are suffering) with their sexual preoccupation, there are no major ethical concerns. Similarly, on occasion that the healthcare provider (independently of the criminal justice system) introduces the discussion about MMSA with offenders that sexual preoccupation has taken over their lives to the extent that they cannot function in everyday life demands or cannot attend psychological interventions and other interventions due to their preoccupation, ethical concerns are minimal and match those pertinent to all medical interventions. It is in cases of medication prescribing that the offenders feel or indeed they have no choice that ethical concerns rise.

Lai (2014) in her dissertation focusing on the ethics of the use of androgen deprivation therapy for child sex offenders very eloquently discussed issues around autonomy, fully voluntary consent and valid consent. She argued that a starting point should be considering whether the intervention proposed could be beneficial for the particular individual (of course one should keep in mind and be transparent with the offender that the intervention may fail to alleviate their increased or

inappropriate sexual preoccupation or indeed decrease the preoccupation and desires but fail to increase the person's autonomy). In order to determine if it is appropriate to offer medication to a sex offender, one should establish that "the treatment is not cruel, inhumane, degrading or wrong; the treatment serves the best interests of the offender and the offender gives his informed consent" (Lai 2014). Lai adopted Beauchamp's (2010) three requirements for valid consent (and subsequently autonomous decision): intentionality, understanding and voluntariness. Intentionality means that if the offender communicates that he wishes to take medications to manage his sexual arousal, he must plan to undergo the treatment, i.e. has the intention of taking the medications. The second requirement implies that the offender must have "appropriate" understanding of what the intervention entails. They are not expected to be experts but have knowledge and understanding of potential benefits and risks of the intervention. It is the healthcare provider's obligation to provide the offender with information or the resources to gather all essential information. The final requirement is voluntariness, that the offender is "free from the control of external sources or their own internal states that deprive them of self-directedness" (Lai 2014; Beauchamp 2010). Lai, in agreement with other researchers in the field (Douglas et al. 2013), concludes that in order for androgen deprivation therapy to be respectful of the person's autonomy, it must fulfil two requirements. The first is that it cannot be offered with any incentive (or indeed threat), and the second is that it must be offered only to offenders that have the potential to benefit from it (in the form of recidivism reduction or subjective feelings and engagement with other therapies) (Lai 2014).

In cases that the present autonomy of the offenders cannot be guaranteed, there still may be a place for medication prescribing. An example is offenders that cannot have full capacity to be autonomous due to their overwhelming and irresistible sexual thoughts and urges that render them captives. If medication prescribing is based on the principle of benevolence, it can—on occasion—be temporarily justified (to lessen the hold sexual preoccupation has on the offender) keeping in mind that in the long term it protects the offender's right to autonomy (Douglas et al. 2013; Lai 2014; Sedkaoui and Mullet 2016).

To add to the argument, instead of incarceration and psychological therapies being the only options available to a sex offender in order to be rehabilitated and enhance his opportunities for an offence-free life, if there is a better (or equally effective) approach, it would be inappropriate for this approach not to be offered (Douglas et al. 2013). In any case, the offenders must decide for themselves. What any healthcare system should do is provide the options and explain to offenders that qualify for such interventions the potential benefits and risks. Each offender then can decide for themselves which intervention they would choose.

Making medication for sexual drive and behaviours available in prisons at any point during imprisonment may be a step towards empowering sex offenders to take medications for the own benefit rather than in order to convince the justice system of their commitment to not reoffend. Of course, such intervention has to be free from incentives or threats in order to be entirely voluntary. Keeping medical records confidential and healthcare providers separate from the criminal justice system

could help. A point for consideration is that such medication prescription cannot be a stand-alone treatment, but prisons should also invest in concurrent psychotherapeutic approaches that could be extended beyond the prison walls once the person is released. It also has to be adequately monitored to ensure the offenders do not experience major side effects, they are taking the correct dosage and they are not reversing the effects of medications by taking testosterone supplements (as such actions may put their physical and mental health at risk).

4.5.3 Other Complexities

Compared to the general population where prevalence of personality disorders is between 2% and 11%, prevalence rate for personality disorders in sexual offending populations varies between 33% (Fazel et al. 2002) and 94% (McElroy et al. 1999). Cluster C personality disorders seem to be more prevalent in child molesters, while Cluster B is more prevalent in rapists. Research has also shown that maladaptive personality traits play a key role in sexual recidivism especially when combined with deviant sexual interest (Hanson and Morton-Bourgon 2005), perhaps through common problematic coping mechanisms (e.g. impulse control, urge management). It is therefore important to consider problematic personality traits when planning any interventions and for sex offender programmes to also target such traits.

Sex offenders with intellectual disabilities also present with diagnostic and treatment challenges. To start with, the prevalence of sexual offending in individuals with intellectual disability is not clear, as is not the prevalence of intellectual difficulties in offenders that committed a sexual offence. Studies of individuals with learning disability estimate that about 4% were convicted of sexual offences, 17% had been in contact with the police and 41% engaged in “sex-related” challenging behaviours (McBrien et al. 2003), while at least 6% had severe sexual aggression (Thompson and Brown 1997). Such high rates can be due to a plethora of reasons including less elaborate planning, higher visibility and factors that have to do with arrest and conviction of individuals with intellectual disability. Methodological issues though affect the generalisability of research findings and the ability to make conclusions with certainty. Research has shown that the sexual recidivism rate for offenders with intellectual disability is higher than that of offenders without the disability (6.8 times at 2 years follow-up and 3.5 times at 4 years follow-up) and that they reoffend quicker than those without a disability (Craig and Hutchinson 2005). Most evidence for effectiveness of treatments on recidivism is based on non-disabled offender populations, and there are no randomised controlled trials on the effectiveness of pharmacological or non-pharmacological interventions for sex offenders with intellectual disability. Subsequently, offenders with IQ of 79 and below are not consistently offered such treatments. At present, only adapted CBT approaches (adapted in terms of content but also of recommended longer duration of 1–2 years) have been applied successfully to sex offenders with intellectual disability (ID) (outcome was recidivism reduction).

4.6 Juvenile Sex Offenders

Juvenile sex offenders are a difficult group to study and treat, mainly due to its heterogeneity. Their offending is usually not specialised, and quite rarely they are exclusively sexual offenders. Additionally, their backgrounds differ as their motivations for offending, their sexual preferences and their life experiences (childhood maltreatment, behavioural disorders, etc.) also differ (Worling and Långström 2006).

Crime statistics from 2011 show that the US juvenile arrests counted for 14% of all forcible rapes (Snyder and Mulako-Wantota 2013). However, research on the presence of sexual deviation in juvenile sex offenders is sparse and of variable quality.

Research has shown that deviant sexual behaviours frequently have onset in late adolescence or early adulthood. And although some will not persist into adulthood, some offenders' behaviours will not only persevere but also escalate (from noncontact sexual behaviours to rape) (Thibaut et al. 2016).

Risk of reoffending is also difficult to establish as most juvenile sex offenders will not go to reoffend or will perpetrate nonsexual offences (Worling and Långström 2006). Risk factors for reoffending include deviant sexual interests, attitudes supportive of sexual offending, high-stress family environment and problematic adolescent-parent relationship, history of sexual assault, impulsivity, sexual preoccupation, victim access, poor social skills, cognitive distortions and also failure to complete treatment programmes (Worling and Långström 2006; Thibaut et al. 2016).

Risk of recidivism is a major concern for all sex offenders, and although for juvenile sex offenders research has found it to be lower than their adult counterparts (range from 7% to 30%, although rarely exceeds 15%), it merits the attention of clinicians and law makers (Thibaut et al. 2016). Incarceration alone cannot resolve the problem and reduce recidivism. Hence, programmes specialised for juvenile offenders are critical.

Similar to research on treatments for adult perpetrators of sexual crimes, high-quality research on treatment specificity and efficacy for juvenile sex offenders is scarce. The same research methodology and quality constraints apply here. Treatment offered involves mainly residential and community programmes that are based on CBT principles, social learning theory and relapse prevention. These programmes apart from individual and group CBT offer psychosocial education, family system and multimodal and multisystemic treatments. In cases of children or female adolescent offenders, they also offer specialised work on their sexual history. Main goals for such treatments include: to help the juveniles to take responsibility of their actions; directly address interfamilial, interpersonal and extrafamilial factors that play a role in their offending and break the offence circle; educate them (and their families) and make them aware of their own triggers, maladaptive behaviours and cognitive distortions; and empower them to identify behaviour controls and devise a relapse prevention plan (Thibaut et al. 2016).

Medication also plays a role in the treatment of juvenile sex offenders, although most medications that are used in adults are not licensed for use in juveniles.

Similarly to adult populations, no controlled studies have been conducted involving treatments with medications of juvenile sex offender populations. Evidently, caution and careful planning is necessary when considering hormonal treatments for young offenders that undergo puberty, as their body already undergoes changes (dependent on hormonal levels) in order to fully develop. The American Academy of Child and Adolescent Psychiatry made the recommendation that anti-androgens are not prescribed to anyone under the age of 17 and its use is reserved for the most severe cases (Thibaut et al. 2016).

SSRIs have been used extensively to treat a range of conditions in children and adolescents, including depression and obsessive compulsive disorder. They require close monitoring not only for the presence of side effects but also as they may increase suicidality to anyone up to the age of 24 years. SSRIs however have no effect on hormonal levels and hence have been used also to treat juvenile sexual deviant behaviours with good effects (mainly though decreasing symptoms such as preoccupation, urges, deviant obsessions, impulsivity and aggressiveness) (Thibaut et al. 2016).

Anti-androgen treatments have also been used in juvenile sex offenders, despite the lack of controlled trials. There are a few case reports and case series on the use of CPA, MPA and gonadotropin-releasing hormone agonists (GnRHa) with good effects (Thibaut et al. 2016). Lack of research on anti-androgen effectiveness and potential adverse outcomes in juvenile sex offender populations (alongside lack of research on length of treatment), as well as the complexity of prescribing hormonal treatments for a population that anyway is undergoing age-related hormonal changes, makes their use limited. The World Federation of Societies of Biological Psychiatry recommends that when anti-androgens are deemed necessary for juvenile sex offenders, a specialised paediatric endocrinologist takes over the prescription process and responsibility of regular monitoring (Thibaut et al. 2016). As with the adult sex offender populations, in cases that pharmacological interventions are considered appropriate or necessary, they should never be given in isolation and should always be part of a comprehensive treatment plan including psychological therapies and psychosocial interventions. The duration of treatment needs to be regularly evaluated.

Prescription of medication for sexual arousal in juvenile populations carries the same fundamental ethical concerns as in adult populations, with the addition of considerations of the effects any medication may have on their normal growth and the development of secondary gender characteristics. Informed consent should always be sought from the young persons and depending on their age from their parents or caregivers as with the prescribing of any medications, according to legal and ethical regulations.

4.7 Female Sex Offenders

Female sex offenders are not adequately studied. Part of the issue is the small numbers of known female perpetrators worldwide. The 2006 and 2013 Uniform Crime Reports found that female offenders committed about 10.5% of all sexual offences

(prostitution excluded) (FBI 2006; Blasko 2016). The FBI (Uniform Crime Reports) also found that in 2016 2.7% of all adult arrests for rape were females (an increase from 1% in 2006) and 7.8% of the arrests for all other sexual offences (it was 6% in 2006) (FBI 2016). This can be due to a number of reasons including that such crimes are usually underreported or under-prosecuted. The media have their own role to play in this alongside public and cultural misconceptions that females cannot be perpetrators of sexual crimes (unless through coercion by male perpetrators). Research has shown that despite the horrific nature of some sexual crimes perpetrated by females, they remain unprosecuted. Ramsey-Klawnsnik (1990) in his research found that despite the sadistic nature of his female participants' crimes (burning, biting, beating, pinching genitalia/breast of children during sexual assaults), the majority were not prosecuted (Ramsey-Klawnsnik 1990).

An explanation for the low persecution and conviction rates can be the public perception that sex offenders are exclusively males. This may influence the juries' decisions about guilt or innocence in such crimes. It may also influence the ability of the victims to report such crimes. Similarly, clinicians and scholars have argued that in cases of young boys that have been abused by adult women, there is hesitation to report it sometimes due to normalisation of such abuse by the society. For example, the victims feel pressurised to feel proud to have had a much older sexual "partner" or believe this to be a normal way to initiate their sexual lives. In other cases, they may feel shameful and lost with regard to who they should speak in order to be taken seriously (Knack et al. 2015). Likewise, adult male victims may feel embarrassed to report sexual victimisation by females.

Another explanation can be that female perpetrators are harder to be revealed as they choose their victims from their immediate family (their partners, children, relatives) and social circles or they choose professions that bring them close to children and adolescents (children/adolescents they care for/look after/teach) and they usually perpetrate the sexual assaults as part of their caring activities (e.g. baby changing) (Vandiver 2006; Blasko 2016).

Apart from those female sex offenders that act on their own, there are also perpetrators that act with a male accomplice. In such cases, females may serve an auxiliary role, mainly to facilitate access to potential victims (Vandiver 2006).

Research on 471 adult registered female sexual offenders has shown that victims were usually known (82% of the cases) (Vandiver and Kercher 2004). Oliver (2007) agreed with previous research showing that female sex offenders could have offended from an age as young as 13 (to as old as 65) and concluded that such perpetrators were more likely to have experienced trauma in early childhood, including sexual abuse and incest (Oliver 2007; Strickland 2008).

Sexual deviancy can also be difficult to establish in female perpetrators of sexual crimes not only due to lack of tested objective measures but also the tendency to see these crimes as not sexually motivated (Knack et al. 2015). Deviant sexual arousal and behaviours have been reported in females; however, lack of research and clinically published data restricts our understanding (Cortoni et al. 2015). Even in cases that female sex offenders are convicted of their crimes, there are no specific risk assessment and management tools; hence, on occasion, clinicians use tools created

and validated for male populations. Understandably, therefore, there is a lack of research and guidance on treatment for female sex offenders.

Treatment programmes for female sex offenders were created due to pressuring need as modified versions of male ones, despite the lack of research on effectiveness and outcomes in female populations. It seems though that they promisingly cover aspects that male programmes failed to cover including trauma, sexual victimisation, relationship and intimacy skills, and apart from the mainstream approaches (CBT, family therapy, etc.), they also use experimental approaches such as drama and art therapy (Giguere and Bumby 2007). Regarding treatment with medications, there are only a couple of case reports of successful use of CPA for females with sexual aggression and compulsive masturbation; therefore, their use is limited and not evidence based.

4.8 Transgender Sex Offenders

Similarly to other populations such as juveniles and females, transgender sex offenders are understudied. There is no clear evidence on the size of the population or offending prevalence. To add to the problem, transgender populations are rather diverse, with male-to-female preoperative, male-to-female postoperative, female-to-male preoperative and female-to-male postoperative having different needs and expectedly being on a variety of hormonal agents for their gender reassignment that may affect their physical and mental health as well as their sexual functioning.

Of note is that individuals that undergo gender reassignment are often prescribed with either anti-androgens (male to female) or androgens (female to male). Similar to the medications to manage sexual arousal that were described above, anti-androgens prescribed for male-to-female transgender populations will have an effect on libido, arousal and sexual functioning. On the opposite side, androgens given to female-to-male transgender individuals may enhance sexual arousal, interest, fantasies and behaviour (Cohen-Kettenis and Gooren 1993). The population of females and males that undergo gender reassignment is hardly studied with regard to emotional impact and sexual feelings during/following treatment, with the main focus of clinical practice and research so far being physical appearance and functioning.

Research on transgender offender populations is sparse, and the existing small number of studies only focused on male-to-female transgender populations. Sexton et al. (2010) for the purposes of their research defined as a transgender offender: “an inmate in a men’s prison who: (1) Self-identifies as transgender (or something analogous); (2) Presents as female, transgender or feminine in prison or outside prison; (3) Receives any kind of medical treatment (physical or mental) for something related to how she presents herself or thinks about herself in terms of gender, including taking hormones to initiate and sustain the development of secondary sex characteristics to enhance femininity; or (4) Participates in groups for transgender inmates” (Sexton et al. 2010). They focused on the demographic characteristics of this particular population of inmates, their vulnerabilities within prison and the discrimination they suffer (including the fact that professionals and other inmates often

confuse gender and sexual identities which has an impact on the everyday life of transgender inmates). They concluded that the demographic composition of transgender incarcerated population differs from that of the rest of the adult male prison population; they are more often in ages 36–45, disproportionately of White and Black ethnic background, disproportionately incarcerated for property crimes, more often receiving a sex offender status (despite the fact that they may have not committed a sexual offence; Hunt and Mills 2012), quite often have been homeless before the crime (20% reported they were homeless before they came to prison, and 47.7% reported that they have been homeless at some point in their lives) and more often being under the care of mental health services (for problems such as depression, drug and alcohol problems or history of suicide attempts). To add to the problem of having access to gender-affirming medical care in prison, transgender populations also present with health-related challenges including overrepresentation of HIV or hepatitis C (Sexton et al. 2010).

Sexton et al. (2010) reported that in California prisons over 40% of transgender inmates have participated in sex work while in prison (prisoners' own account). These prisoners also reported victimisation, either sexual (75% of California transgender prisoners reported that they have been victims of sexual crimes at some point in their lives) or nonsexual (they have experienced at least 5 times more incidents of physical violence compared to other male adult inmates) (Sexton et al. 2010). Another study found that sexual assaults are usually not isolated events, but approximately 30% of the transgender or gay men that were sexually assaulted in prison have suffered six or more of these assaults (Hunt and Mills 2012). The respective statistics from other US states are similar; however, statistics from the rest of the world are lacking. Despite the sparsity of research, it is evident that this population needs both safe placements within the prison system and also access to physical and mental healthcare.

Due to the increased recognition of the needs and vulnerabilities of the transgender populations within the criminal justice system, antidiscrimination legislation and policies have been developed in both Europe and the USA in the last decade, although this does not necessarily cover the provision of adequate healthcare (gender-affirming medical care, mental health, physical health) (Tarzwell 2006; Routh et al. 2017).

Similarly, no concise guidelines exist for transgender sex offenders that require medication to manage their sexual preoccupation. Such guidelines are much needed, especially as the hormone treatments prescribed as part of the gender reassignment can affect the emotional state, sexual feelings and also the behaviour of the individuals.

4.9 Conclusion

In the last few decades, there has been an increased interest among clinicians and academics in finding effective treatments for sex offenders. Pharmacological methods have been in the forefront of developments as they are seen a more immediate and effective solution than psychotherapeutic and sociological interventions and less ethically controversial when compared to surgical castration.

With testosterone being the hormone that plays a central role in male (and female) sexuality, it is not a surprise that it is the main target when considering treatments to reduce sexual preoccupation. There have been two major categories of medications used in the treatment of sex offenders: the SSRIs and agents influencing the production and effects of androgens (steroidal anti-androgen treatments, GnRH analogues). Despite their wide use, to date, there are no controlled clinical trials comparing the effectiveness of medications alongside that of other interventions or indeed the long-term effects of such treatments.

The principles of prescribing medications to manage sexual preoccupation, deviancy and sexual arousal in prisons and in forensic psychiatry hospitals or indeed in the community are the same; the place should not restrict the options. Comparable also are the ethical issues that the prescriber should consider before such prescription, starting by whether there is a clear medical (rather than social) reason to prescribe. Alongside the fundamental principles of autonomy, informed consent and free will, important ethical considerations when prescribing medication to sex offenders are also the offenders' right to treatment, the clinicians' duty to treat (once a problem is diagnosed and where treatment is available), the coercion of inmates (as coercion in prison is so likely especially if a treatment is linked with freedom or privileges) and the coercion of the physician to prescribe.

Making medication that reduces sexual drive and behaviours available in prisons at any point during imprisonment may be a step towards empowering sex offenders to take medications for the own benefit rather than in order to convince the justice system of their commitment to not reoffend. Of course, such intervention has to be free from incentives or threats in order to be entirely voluntary.

Initial use of medications to treat only high-risk sex offenders and only those with sexual deviancy with the aim to manage risk is slowly moving towards using medications to reduce subjective distress to the offender, reduce sexual preoccupation and enable engagement in therapy and rehabilitation. Such treatment can not only improve the offenders' life and rehabilitation but also indirectly provide public safety. One can hope that such prescribing will gradually become more accessible and medications could come to be available to all sexual offenders that have the potential to benefit from them.

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