Preliminary evaluation of the use of pharmacological treatment with convicted sexual offenders experiencing high levels of sexual preoccupation, hypersexuality and/or sexual compulsivity

The current study presents the preliminary evaluation of the impact of pharmacological treatment (Selective Serotonin Reuptake Inhibitors; SSRIs and anti-androgens) on hypersexuality, sexual preoccupation and sexual compulsivity. The participant pool comprised 64 convicted UK sexual offenders who had been voluntarily referred for pharmacological treatment to reduce their hypersexual arousal, 51 of whom agreed to take the medication (with a further five individuals on hold or under assessment at the time of data extraction). The preliminary findings were very encouraging; analysis on measures assessing sexual preoccupation, hypersexuality and sexual compulsivity indicated a significant reduction between pre and post medication, across both types of medication. Limitations of the current research are discussed.

Keywords: sexual offender treatment; anti-libidinal; SSRIs; anti-androgens; evaluation; hypersexuality

Introduction

The utility of pharmacological treatment (discussed here in reference to the medication used in this study, namely Selective Serotonin Reuptake Inhibitors [SSRIs] and anti-androgens), administered voluntarily to sexual offenders, has been promulgated as a useful adjunct to traditional psychological treatment (Bradford & Kaye, 1999; Guay, 2009). Whilst psychological interventions remain the most widely accepted intervention (Friendship, Mann & Beech, 2003) with evidence of effectiveness (see Hanson et al., 2002; Lösel & Schmucker, 2005), feedback from treatment facilitators indicates that sexual offenders with high levels of sexual preoccupation are not as responsive as other offenders to the cognitive-behavioural programmes available to them. Specifically, difficulties in concentrating, as a consequence of an inability to distract themselves from their sexual preoccupation and compulsivity may reduce the benefits of the traditional interventions, potentially impacting upon recidivism rates (K. Hocken, personal communication, February 19, 2013). However, it is important that these individuals' needs are addressed, considering the strong link between sexual preoccupation and sexual recidivism in sex offender populations (Hanson & Harris, 2000). Hanson and Morton-Bourgon (2005) cite sexual deviancy (including sexual preoccupation) as one of the most important dynamic (i.e. changeable) risk factors for sexual reoffending in sexual offender populations (see also Hanson, Harris, Scott & Helmus, 2007 and Knight & Thornton, 2007).

Pharmacological treatment has been shown to contribute to individuals being able to control their sexual urges and arousal, (Hill, Briken, Kraus, Strohm & Berner, 2003) and reduce hypersexuality (Kafka & Prentky, 1992; Kaplan & Krueger, 2010), as assessed by Total Sexual Outlets (TSO: number of outlets to orgasm); a measure originally proposed by Kinsey, Pomeroy and Martin (1948). Whilst Guay (2009) affirms "it appears that recidivism

rates are reduced by the use of psychotherapy alone, drug therapy alone, and more so by their combination" (p. 1), research in this area has been marked by both methodological difficulties, as well as challenges in extrapolating the range of terms used (such as sexual preoccupation, sexual compulsivity, and hypersexual arousal). Even where there seems to be agreement apropos a particular term, there is a constant refining of terms. For example, with reference to TSO, this term was originally defined by Kinsey et al. (1948) and Kafka (1997) as the number of sexual outlets (to orgasm) per week over a six monthly period. However, Langström and Hanson (2006) asserted that a simple count of sexual activity was not enough to demonstrate pathology, unless it was accompanied by solitary or impersonal sexual behaviour. An indication of the salience of an impersonal element to sexual activity is difficult to extrapolate in a prison setting, where the majority of sexual activity will be confined to solitary masturbation. However, this difficulty might be surmounted by the findings of Walters, Knight and Langström (2011), who investigated the latent structure of hypersexuality and provided evidence that "excessive sexual behavior and Hypersexual Disorder are not distinct categories of behavior but rather exaggerations or distortions of statistically normal sexuality" (Walters et al., 2011, p. 1317). This view fits with that of Kafka (2010a, 2010b) that hypersexuality, or as Kafka terms it 'hypersexual disorder' is characterised by an increase (in both frequency and intensity) of sexual thoughts, behaviours, urges and fantasies – thus, in a sense, there is a 'turning up' of the sexual volume across a multitude of dimensions.

Sexual preoccupation has been defined as 'an abnormally intense interest in sex that dominates psychological functioning' (Mann, Hanson & Thornton, 2010, p. 198), potentially resulting in a high frequency of sexual behaviours. This high frequency of sexual behaviours is defined as hypersexual disorder or hypersexuality, as measured by number of TSO (Kafka, 1997; Kinsey et al., 1948). Thus, individuals who have sexual preoccupation may also

overlap with those who demonstrate hypersexuality, as well as sexual compulsions (recurrent, insistent, unwanted and intrusive urge to perform sexual acts, can cause anxiety or distress; Kalichman & Rompa, 1995) and sexual addictions (Marshall, Marshall, Moulden, & Serran, 2008). Although there is significant overlap in the presentation of sexual preoccupation and hypersexuality, the authors argue they are separate from one another, distinguishable by the fact that preoccupation is the 'thought' and hypersexuality is the (possible) resulting 'behaviour'.

Guay's (2009) review of clinical trials and literature on the use of medication to treat paraphilic and non-paraphilic sexual disorders indicates a promising role for medication with sexual offenders. Alongside cognitive-behavioural therapies, the medication has been shown to reduce sexual urges or behaviours in those with paraphilias and other sexual disorders, such as sexual obsession, sexual preoccupation and sexual compulsivity. Pharmacological treatment may be particularly useful where individuals have come to feel that their hypersexuality is a burden to them; this may be an extrinsic burden (such as loss of personal freedom through incarceration) or intrinsically (see Lievesley, Elliott, Winder, Norman & Kaul, under review), associated with distress, anxiety and/or depression. SSRIs work to increase serotonin and it has been evidenced that serotonin inhibits physiological arousal/erection, physiological orgasm, sexual desire and psychological arousal (Jordan, Fromberger, Stolpmann, & Müller, 2011; Meston & Frohlich, 2000). Thus, SSRIs can have a direct role in the mentioned effects and this has been demonstrated within research with sexual offenders. In their systematic review, Adi et al. (2002) conclude that there is preliminary evidence for the use of SSRIs in treating sexual offenders, although further, more robust control group research is a priority for this to become conclusive. Similarly, Thibaut et al. (2010) provide an overview of the research on the use of SSRIs with sexual offenders and based on this, recommend this treatment for those who have a high level of arousal that

cannot be addressed in standard Cognitive Behavioural Therapy (CBT). Another point of interest is the role of serotonin (and therefore for SSRIs) that has been proposed and to some extent evidenced in various psychological factors that might relate to sexual offending. These include (dis)inhibition of sexual behaviour, completing habitual behaviours and sexual satiety which may relate to impulsivity and compulsivity problems theorised to explain some sex offending; as well as in attachment which may relate to the emotional loneliness and lack of intimacy reported in sex offenders (see Beech & Mitchell, 2005, for review).

Anti-androgens, specifically Cyproterone Acetate (CPA; the medication used in this study) have their anti-libidinal effect by directly reducing testosterone levels to a point where sexual arousal is substantially reduced (approximately 30-40% reduction, Bancroft, 1989). There have been several studies to investigate the use of CPA with sexual offenders. For example, in a double-blind crossover study, Bradford and Pawlak (1993) demonstrate a reduction in arousal levels, sexual desire and sexual behaviour in sex offenders and paraphilic patients. In an overview of 10 open and controlled studies with paedophiles, sex offenders and/or patients with paraphilias, Thibaut et al. (2010) report significant declines in self-reported sexual activity, sexual fantasy, frequency of masturbation and deviant sexual behaviour in 80-90% of cases treated with CPA. Overall, they advise careful administration of CPA (only following SSRI treatment first), due to the associated side effects and the methodological limitations of the evidence base to date (not controlled, small samples, short follow up duration, retrospective etc.).

The study outlines a preliminary stage to evaluating the effectiveness of the use of pharmacological treatment to reduce hypersexual arousal, sexual preoccupation and sexual compulsivity (as relating to the dynamic measure of ‘obsession with sex’ utilised in, for example, the Structured Assessment of Risk and Need for Sex Offenders (SARN-SO;

Webster et al., 2006). The paper also allows a description of the population in question, namely adult male individuals who have been convicted of a sexual offence and who have been referred for medication given their inability to manage high levels of sexual preoccupation.

Research Aims

The present study aimed to ascertain if there were reductions in hypersexuality, sexual compulsivity and sexual preoccupation in sexual offender participants taking (i) SSRI and (ii) anti-androgen medication over time.

Method

Participants

Participants comprised 64 male convicted sexual offenders housed in a Category C UK prison establishment who had been referred for medication between 2010[1] and 2012. The criteria for referral, as outlined by HMPS, includes evidence of one or more of:

> 'a. hyper-arousal (e.g., frequent sexual rumination, sexual preoccupation, difficulties in controlling sexual arousal, high levels of sexual behaviour),
>
> b. intrusive sexual fantasies or urges,
>
> c. subjective reports of experiencing urges that are difficult to control,
>
> d. sexual sadism or other dangerous paraphilias such as necrophilia. Highly repetitive paraphilic offending such as voyeurism or exhibitionism' (HMPS, 2008, pg. 3).

[1] Three individuals had been referred in 2009, but this was prior to the evaluation research; the majority of referrals were between 2010 and 2012

Of the 64 men referred for the treatment, 36 received SSRIs (Fluoxetine), five received anti-androgen medication (Cyproterone acetate, CPA), seven received a combination of SSRIs and anti-androgen medication, one received a GnRH agonist (Triptorelin), 10 did not receive any medication (refused/not suitable) and five were on hold or under assessment for the medication.

Medication

Two main types of medication were available: Selective Serotonin Reuptake Inhibitors (SSRIs, Fluoxetine) and anti-androgens (Cyproterone Acetate, CPA). Individuals were typically started on 20mg Fluoxetine, taken daily as a tablet, with dosage increased to 40/60mg where the consulting psychiatrist deemed it was necessary. Where SSRIs did not appear to be working for individuals, anti-androgens were prescribed. Starting and typical dosage for anti-androgens was 50mg, daily by tablet, which was increased to 100mg for cases in which individuals self-reported challenging sexual fantasies, hypersexuality and/or sexual preoccupation. This is in line with practical guidelines for the treatment of paraphilias as outlined by Bradford (2000; 2001) and Thibaut et al. (2010) and the clinical judgment of the consulting psychiatrist. In addition, because it is a voluntary service, participants themselves also prefer to try less intrusive methods first, with the SSRIs. GnRHs are available but have only been used in one case due to the imminent release of an individual and their concern about their risk management.

Measures

Data collated included: referral information, demographic and offending information, sentence information, and data relating to medication type and dosage. Static and dynamic risk data was also captured: static risk was reported from Risk Matrix 2000 (RM2000;

Thornton et al., 2003) sexual scores (RM2000/S; scored as 1 [low], 2 [medium], 3 [high] or 4 [very high]). Dynamic risk was reported from the SARN-SO (scored as 0 [not present], 1 [present] and 2 [strongly characteristic]). This is a dynamic risk tool used to identify offenders' dynamic risk factors and to understand offenders' treatment needs at this establishment. The tool comprises 16 dynamic risk factors that are separated into four domains; Sexual Interests, Distorted Attitudes, Socio-Affective Functioning and Self-Management. Each risk factor assesses risk within the offenders' offence chain, and in life generally.

Data relating to a number of clinical measures (discussed below) taken by the psychiatrist was also collated. Additional psychometric data, such as the Sexual Compulsivity Scale (SCS; Kalichman et al., 1994a), were also collected from August 2011.

Sexual Compulsivity Scale (SC)

The sexual compulsivity scale was developed by Kalichman et al. (1994a) to measure hypersexuality and sexual addiction; it is a ten item scale where participants rate the extent to which they agree with a series of statements with a 4-point response scale ranging from 1 (not like me at all) to 4 (very much like me). Indicative items are 'my sexual thoughts and behaviours are causing problems in my life' and 'my desires to have sex have disrupted my daily life'. Scale items were derived from self-descriptive statements contained in a brochure advertising a sexual addiction support group (CompCare, 1987). The scale was reliable within a HIV positive group of individuals who reported engaging in risky sexual practices, such as high numbers of sexual partners and/or unprotected sex (Kalichman et al., 1994b). Cronbach alpha for the SC scale was .89 with a male sample and .92 with a female sample (Kalichman & Rompa, 2001). For the current sample, the Cronbach alpha coefficient was .83.

Self-reported measures of sexual thoughts, feelings and behaviours.

The measures reported below are those utilised by Grubin and others (see acknowledgements).

Hypersexuality. This was assessed by asking participants how many days in the last week they had masturbated to orgasm (0-7).

Sexual Preoccupation (SP). Sexual preoccupation was assessed by the item 'how much time do you spend thinking about sex?' Responses were collated on a seven point scale (1: Low; 7: High). Additional items relating to SP were 'what is the strength of your sexual urges and fantasies?' (1: Low; 7: High) and 'what is your ability to distract yourself from sexual thoughts?' (1: Easy; 7: Difficult).

Procedure

A working system was established where individuals who were considered appropriate for referral due to problems managing their sexual thoughts and behaviours were referred by any member of prison staff through completion of a referral form – consent from the prisoner was required for a referral. Individuals were subsequently assessed for suitability by the psychiatrist and, where appropriate and the individual wished to take the medication, were prescribed anti-libidinal medication. Individuals continued to meet with the psychiatrist on a regular basis, and, at each meeting measures of hypersexuality and sexual preoccupation were collated as part of the patient-doctor consultation.

Participants were also invited to complete dynamic psychometric measures prior to taking the medication (to establish baseline data) and every three months thereafter. Static

psychometric measures, additional medical and offence related information were collated on a one-off basis for each participant.

Ethical approval for the study was obtained from a UK University and Her Majesty's Prison Service (HMPS). Standard ethical guidelines (such as gaining informed consent, giving debrief and support to participants, facilitating withdrawal of data, and protection of confidential data) were followed. Since the data were not anonymised, it remained at all times within HMPS establishment, securely maintained as per prison policies PSOs 9020, 9015 and 1100.

Statistical process and procedure

Data from the various sources was initially inputted into Excel, and subsequently imported into SPSS v19 for analysis. A one-way Repeated Measures ANOVA was conducted to explore changes in sexual compulsivity data. A series of Mixed design ANOVAs were performed to explore, by type of medication (SSRIs vs anti-androgens) potential changes (i) pre medication, (ii) one month post medication and (iii) three months post medication across the clinical measures.

Results

Sample Characteristics

The mean IQ of the sample (assessed by Wechsler Abbreviated Scale of Intelligence-Second Edition [WASI-II; Wechsler, 2011] or, where available Wechsler Adult Intelligence Scale-Fourth Edition [WAIS-IV; Wechsler, 2008]) = 84.72 (SD = 14.92; 63-114). Approximately half of the referral sample were intellectually disabled (46% IQ < 80). In terms of ethnicity, 56 participants were White British, one was White Other, with data still being sought for seven participants. The mean age was 42.96 (SD = 14.65; 24-73). In terms of previous

offences, over 90% had child sexual offences with an average of five previous contact offences and two previous non-contact offences per offender. The participants had a range of recall, determinate, life and Indeterminate Sentence for Public Protection (ISPP) sentences.

Static risk was reported from RM2000/S scores. The mean risk matrix score was high with a mean of 3.03 and a mode of 3. Dynamic risk was reported from the SARN-SO which contains 16 dynamic risk factors that are separated into four domains; Sexual Interests, Distorted Attitudes, Socio-Affective Functioning and Self-Management.

The highest scoring dynamic risk factor was sexual preoccupation (offence chain) with a mean of 1.90 (sd = .31) and a mode of 2. A score of 2 indicates the risk factor is strongly characteristic and thus, for this population, sexual preoccupation is a very strong risk factor. This is closely followed by poor problem solving generally (mean = 1.86, sd = .47), mode = 2), sexual preoccupation generally (mean = 1.72, sd = .69, mode = 2), lack of emotional intimacy generally (mean = 1.69, sd = .67, mode = 2) and inadequacy generally (mean = 1.62, sd = .68, mode = 2). The lowest scoring dynamic risk factor was sexualised violence in the offence chain (mean = 0.17, sd = .47, mode = 0). The second lowest factor was adversarial sexual attitudes in the offence chain (mean = 0.21, sd = .49, mode = 0), followed by adversarial sexual attitudes generally and women are deceitful (offence chain), both with means of 0.28 (sd = .58; .45) and modes of 0. The overall means for the four domains were all over 1 apart from Distorted Attitudes, (0.61). Self-Management had the highest overall mean (1.20), followed by Sexual Interests (1.15) and then very closely by Socio-Affective Functioning (1.14).

Sexual compulsivity

A one-way repeated measures ANOVA was conducted to compare scores of sexual compulsivity at T0 (pre-medication) and T3 (three months post medication). There was a

significant effect for time, Wilks' Lambda = .44, F (1,11) = 13.79, p = .003, multivariate partial eta squared = .56. This indicates significantly lower levels of sexual compulsivity after three months. Figure 1 below presents this graphically for participants taking SSRIs and anti-androgens (A-As).

INSERT FIGURE 1

Findings from clinical measures used to establish levels of sexual preoccupation and hypersexuality

Analyses and graphs for participants scores on the clinical measures over three time periods are presented below. T0 represents the time before participants started taking the medication; T1 equates to approximately one month after participants started taking medication; and T3 equates to approximately 3-4 months after participants started taking medication. For the purposes of analysis, two groups are reported: (i) those taking SSRIs and (ii) those taking anti-androgens (either alone or in addition to SSRIs). The four ANOVAs were conducted using Bonferroni adjusted alpha levels of .05/4 = .0125 per test to control for the familywise Type I error rate.

Clinical measure: Hypersexuality; Assessed as number of days masturbated leading to orgasm

A mixed 2 X 3 ANOVA indicated a significant main effect of time (T0, T1, T3) on hypersexuality, F(2, 74) = 16.34, p = .001. Partial eta squared = .306. Contrasts revealed that there was a significant decrease in hypersexuality between T0 (pre-medication) and T3 (three months post-medication), F(1, 37) = 30.41, p = .001. Partial eta squared = .451.

There was no significant effect of medication type (SSRI, anti-androgen), F (1,37) = 2.01, NS. There was no interaction between medication type and time on hypersexuality, F(2, 74) = 0.85, NS. Figure 2 demonstrates the decrease in number of days masturbated with both SSRIs and anti-androgens (A-As) over the three time points in graphical form.

INSERT FIGURE 2

Clinical measure: Sexual Preoccupation; Time spent thinking about sex

A mixed 2 X 3 ANOVA indicated a significant main effect of time (T0, T1, T3) on sexual preoccupation, F(2, 74) = 25.92, p = .001. Partial eta squared = .412. Contrasts revealed that there was a significant decrease in sexual preoccupation between T0 (pre-medication) and T3 (three months post-medication), F(1, 37) = 45.77, p = .001. Partial eta squared = .553.

There was a significant effect of medication type (SSRI, anti-androgen) on sexual preoccupation, F(1, 37) = 8.817, p = .005. Partial eta squared = .192. There was no interaction between medication type and time on sexual preoccupation, F(2, 74) = 0.42, NS. Figure 3 demonstrates the decrease in time spent thinking about sex with both SSRIs and anti-androgens (A-As) from T0 to T3 in graphical form.

INSERT FIGURE 3

Clinical measure: Sexual Preoccupation; Strength of sexual urges and fantasies

A mixed 2 X 3 ANOVA indicated a significant main effect of time (T0, T1, T3) on strength of sexual urges, F(2, 74) = 28.91, p = .001. Partial eta squared = .439. Contrasts revealed that there was a significant decrease in strength of sexual urges between T0 (pre-medication) and

T3 (three months post-medication), F(1, 37) = 49.90, p = .001. Partial eta squared = .574.

There was a significant effect of medication type (SSRI, anti-androgen) on strength of sexual urges, F (1,37) = 10.50, p = .003. Partial eta squared = .221. There was no interaction between medication type and time on strength of sexual urges, F(2, 74) = 0.70, NS. Figure 4 demonstrates the reduction in strength of sexual urges and fantasies with SSRIs and anti-androgens (A-As) from T0 to T3 in graphical form.

INSERT FIGURE 4

Clinical measure: Sexual Preoccupation; Ability to distract from sexual thoughts

A mixed 2 X 3 ANOVA indicated a significant main effect of time (T0, T1, T3) on ability to distract from sexual thoughts, F(2, 74) = 25.09, p = .001. Partial eta squared = .404. Contrasts revealed that there was a significant decrease in ability to distract from sexual thoughts between T0 (pre-medication) and T3 (three months post-medication), F(1, 37) = 47.65, p = .001. Partial eta squared = .563.

There was a significant effect of medication type (SSRI, anti-androgen) on ability to distract from sexual thoughts, F (1,37) = 9.14, p = .005. Partial eta squared = .198. There was no interaction between medication type and time on ability to distract from sexual thoughts, F(2, 74) = 1.84, NS. Figure 5 demonstrates the improved ability to distract from sexual thoughts for SSRIs and anti-androgens (A-As) in graphical form.

INSERT FIGURE 5

Discussion

The main findings of this preliminary evaluation are that, for both types of medication offered (SSRIs and anti-androgens), pharmacological treatment significantly reduces i) sexual preoccupation, demonstrated through reductions in strength of sexual fantasies, inability to distract from sexual thoughts, and time spent thinking about sex and ii) hypersexuality, demonstrated through reduced days masturbated to orgasm. These reductions commence as soon as individuals start taking the medication, with clear declines continuing for three to four months after medication. This mirrors the results of Kafka and Prentky (1992) who reported marked reductions in Total Sexual Outlets for paraphilic patients in the first four weeks after medication.

The results indicate that the SSRIs are leading to a similar reduction in sexual preoccupation and hypersexuality as the anti-androgens. The authors would argue, based on this data, together with qualitative data from the offenders presented in Lievesley et al. (2012), that the SSRIs could also be termed anti-libidinal. Certainly, a well evidenced side effect of SSRIs is the direct role serotonin has in inhibiting ejaculation and erection and increasing sexual satiety (Lorrain, Matuszewich, Friedman & Hull, 1997; Pfaus, 2009;). When SSRIs are prescribed for the above effects, we would argue that they become the targeted effects, bringing SSRIs under the umbrella term anti-libidinal, along with anti-androgens.

The encouraging preliminary findings of reduction in clinical measures of hypersexuality and sexual preoccupation were replicated in the psychometric analysis of sexual compulsivity, pre and post medication for participants. In fact, the sexual compulsivity scores three months post medication for the sample were less than those reported for generic sex offenders elsewhere (Winder et al., 2013) indicating that the sexual compulsivity scores of our sample of medicated offenders had dropped to below that of ‘typical’ sex offenders.

Whilst this is ostensibly an indication that the medication is effective at reducing sexual compulsivity, it also raises questions as to how long individuals should take the medication for, and where should we 'leave' individuals in terms of their sexual preoccupation, sexual compulsivity and hypersexuality? Should this be at an age-mediated 'normal' level so that individuals can have appropriate sexual relationships (thereby managing the dynamic risk factor of lack of emotionally intimate relationship)? Certainly this would be fitting with the Good Lives Model (Ward & Brown, 2004), whereby healthy sexual expression is recognised as a primary human good, and is likely to reduce recidivism.

The study also allowed a description of the participants. Data collected indicates that the referrals for anti-libidinal medication comprise a particularly high risk, sexually preoccupied group, as reflected in high static risk scores (in comparison with other offenders in the same prison establishment, see Winder et al., 2013) and the greater prevalence of dynamic risk factors being 'strongly characteristic' in these individuals (in comparison with convicted sexual offenders in the UK generally – see Winder et al., 2013). The results also indicated that in particular, the dynamic treatment needs of sexual preoccupation (both in the offence chain and generally), poor problem solving, lack of an emotionally intimate relationship and feelings of inadequacy were more prevalent in the referrals for anti-libidinal medication.

All but one of our referrals were convicted of child contact sexual offences (which is proportionally more compared to the remainder of the population at this prison (K. Hocken, personal communication, February 13, 2014). This may indicate a population that was simply paedophilic in nature; although it may also represent a group of individuals who are indiscriminate in their victim preferences, and/or take any opportunities to offend, with children featuring as an 'easy' target.

Another factor that needs further exploration is the high proportion of intellectually disabled sexual offenders (assessed though the WASI and/or WAIS, but not including a measure of adaptive functioning) that were referred for anti-libidinal medication. Approximately half of the referrals were intellectually disabled (ID), in comparison with approximately one in six of the offenders at this sex offender treatment prison (K. Hocken, personal communication, February 13, 2014). The research and project team are reflecting on the reasons for this and whether this is because these offenders have increased difficulty managing their hypersexuality, or are seen to find this more difficult. Alternatively, these individuals could be more conformable to suggestions for referral, as acquiescence is strongly associated with ID (Gudjonsson, 1990).

Limitations of the research

A primary limitation that should be considered is the nature of self-report data, and questions about its validity and reliability. The data utilised in this study is collated on different dates and within different contexts. The clinical measures were collected within the context of a therapeutic relationship by a forensic psychiatrist (Kaul). The psychometric measures were collected by the research team, on different dates to the clinical data, and participants are not reminded of their previous responses (collated 4-12 weeks previously). The clinical data and psychometric data showed good triangulation, and the robustness of the data has been underpinned by a qualitative study comprising interviews with participants (see Lievesley et al., 2012).

Limitations of the study as an evaluation include the relatively modest sample sizes at this stage (although data collection is ongoing), and the lack of a matched control group. The findings of this study will facilitate thinking around the matched control study as a next step in the evaluation process.

Future Directions

Certainly, when assessing the effectiveness of pharmacological treatment with sexual offenders, there are three outcomes of interest: (i) indications of reductions in hypersexuality, sexual obsession and sexual compulsivity (as relating to the dynamic measure of sexual preoccupation utilised in, for example, the SARN-SO; (ii) offence-paralleling behaviours or behaviours that indicate high sexual preoccupation, such as correctional infractions, may also give useful interim information relating to the utility of the medication; (iii) and finally the reduction in recidivism and, to paraphrase the words of Beech, Fisher and Beckett (1999) 'the ultimate test of the effectiveness of [medication] is the extent to which it reduces further sexual offending' (p. 94).

This paper presents preliminary findings relating to the first outcome (measures of sexual preoccupation and hypersexuality). In terms of correctional infractions and/or offence paralleling behaviours (the second outcome), this data is currently being recorded for future analysis. The evaluation of any reduction in recidivism following pharmacological treatment is a key aim of the overall evaluation, although there are various challenges involved in assessing the reduction in further offending given the low base rate of sexual offending (Friendship & Thornton, 2001), and the currently modest sample size of individuals volunteering to take anti-libidinal treatment. However, this remains a long-term aim of this programme of the research.

The gold standard of measuring the effectiveness of interventions is undoubtedly the randomised control trial; however, this is a difficult ideal to achieve in the early years of an intervention. A matched control group would provide a less stringent but useful base for the assessment of the effect of an intervention, but choosing the correct variables for the control

group is also problematic. The present study allows us to make sensible decisions about key matching variables.

Further research will include the ongoing analysis of current data as sample size increases, and an analysis of psychometric data (sexual compulsivity, anxiety and depression, personality characteristics, and psychosexual characteristics) being collected to examine underlying features of hypersexuality and any inter-relationship with these and the medication. A follow up of individuals who have been released will also be conducted, as well as exploring the understanding of offender managers/supervisors and general practitioners to identify the needs of sexual offenders in the community and their access to medication. In addition, the treatment sequencing of the participants needs to be mapped out and case studies following individuals' journeys through the Criminal Justice System and out into the community would be beneficial.

The data still merits more fine-grained analysis, such as an analysis of those referred but who do not take medication, a splitting between the three medication groups (SSRIs only, anti-androgens only and a combination group taking both types of medication) and connections made to additional static and dynamic psychometric measures which are being collated by the research teams.

Clinical issues

A number of clinical challenges arose during this research; for example, the research team noted that some participants stopped taking the medication. A small number of individuals have described discontinuing their medication (A. Kaul, personal communication, November 27, 2012), retrospectively asserting that they did so because they believed they were 'cured'; however, they noticed their sexual preoccupation returning and consequently asked to re-start the medication. A second group stopped their medication, either temporarily or permanently.

Compliance and engagement with the pharmacological treatment is an important clinical challenge for us to consider, and the research team have focused on highlighting diverse treatment 'journeys' that individuals taking the medication have shown, hypothesising reasons for the various journeys (see Winder, Lievesley, Elliott, Norman & Kaul, 2014 in press).

Another clinical challenge is concerned with considering the optimal relationship between pharmacological treatment and psychological treatment. Recommendations by Guay (2009) state that psychological interventions should be conducted at the same time as medication, since the combination is associated with better results compared with either individually. This fits with anecdotal findings from participants that the medication 'turns down the volume' so that psychological treatments can be 'heard'. It is more straightforward to understand why the two types of treatment would work together when the psychological treatment is one of the standard group sex offender treatment programmes. However, the case is more complex where individuals are simultaneously undertaking the Healthy Sex Programme (HSP), since individuals may find that the medication makes it difficult for them to masturbate, even to appropriate fantasies. They may either resort to more deviant fantasies (as was reported by one individual in this study) or not be sufficiently 'rewarded' through their failure to ejaculate, potentially undermining some of the treatment effects of the programme. Moreover, in the rare instances where the offender reports previous attraction only to children, and has no repertoire of appropriate fantasies to draw from, difficulties in gaining or maintaining an erection, or ejaculating, may also undermine the programme as such individuals need to learn to masturbate appropriately to the 'reward' of ejaculation to healthy sexual fantasies. Within the prison establishment, clinicians are working together with the consulting psychiatrist to progress cases such as these on an individual basis (K. Hocken, personal communication, February 7, 2014).

Conclusions

Both types of pharmacological treatment (SSRIs and anti-androgens) significantly reduced hypersexuality, sexual preoccupation, ability to distract from sexual thoughts and the strength of sexual urges in participants. The same significant reduction was demonstrated pre and post pharmacological treatment in levels of sexual compulsivity for participants in this study. These are encouraging preliminary findings, indicating that both SSRIs and anti-androgens can work effectively as anti-libidinals on sexually preoccupied adult male individuals. The consistency of the findings across both clinical measures and psychometric measures help to underpin the robustness of the measures in terms of validity.

This work is ongoing: referrals for pharmacological treatment are continuing, allowing a more robust analysis with a larger dataset. Additional psychometric measures are also being collated and their relationship with sexual preoccupation and hypersexuality can be examined. Moreover, the strength of the evaluation needs to be improved assessing any impact of the anti-libidinal treatment with interim outcome data, such as correctional infractions. In the long term, the anti-libidinals need to be evaluated in terms of any impact on reoffending, and if possible the latter should be in the context of a matched control design, or, if feasible and ethical, a randomised control trial.

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Figure Captions

Figure 1: Mean Sexual Compulsivity Scores for participants taking (i) SSRIs and (ii) A-As to reduce sexual preoccupation pre-medication and three months post-medication.

Figure 2: Number of days masturbated in previous week for participants taking (i) SSRIs and (ii) A-As

Figure 3: Amount of time currently spent thinking about sex for participants taking (i) SSRIs and (ii) A-As

Figure 4: Strength of sexual urges and fantasies for participants taking (i) SSRIs and (ii) A-As

Figure 5: Ability to distract from sexual thoughts for participants taking (i) SSRIs and (ii) A-As