PSYCHOSOCIAL INTERVENTIONS IN STIMULANT USE DISORDERS: A FOCUS ON WOMEN

Riccardo De Giorgi [a*], *Gian Loreto D'Alo* [b], *Franco De Crescenzo* [a, c]

[a] Department of Psychiatry, University of Oxford, Warneford Lane, Oxford, OX3 7JX, UK

[b] School of Hygiene and Preventive Medicine, University 'Tor Vergata', Rome, Italy

[c] Institute of Psychiatry and Psychology, Catholic University of Sacred Heart, Rome, Italy

[*] Author of correspondence: Riccardo De Giorgi; Department of Psychiatry, University of Oxford, Warneford Lane, Oxford, OX3 7JX, UK; +44 (0) 1865 901 000; Riccardo.DeGiorgi@psych.ox.ac.uk

Abstract

Purpose of review:

Stimulant use disorders are significant contributors to the global burden of disease, with a growing impact on women. Psychosocial interventions are the gold-standard for treating this condition, but several barriers may prevent women from accessing appropriate treatment. Therefore, we systematically reviewed the most recent findings about psychosocial interventions for stimulant use disorders, focussing on results relevant to women.

Recent findings:

Twenty-two eligible studies were identified. Psychosocial interventions in stimulant use disorders were examined in 17 recent studies, but no analyses for sex-related differences were performed. These aspects were investigated in further 5 studies, either through secondary analyses on the female subgroup, or specifically examining a female-only sample. Contingency management (CM), either alone or in combination with other interventions, provided the most positive results on several outcome measures. Only one pilot study showed good potential for an alternative approach of systemic family therapy, warranting further research in this direction.

Summary:

Research in stimulant use disorders shows an increasing interest in exploring interventions capable of addressing gender-specific issues. Combined therapy including CM plus other treatments appears the most promising option, but larger secondary studies are needed to rank the efficacy of different psychosocial interventions while considering their feasibility and acceptability in specific subpopulations, including women.

Keywords

Stimulant use disorders, psychosocial interventions, women, sex characteristics

Abbreviations

ASSIST: Alcohol, Smoking and Substance Involvement Screening Test

ATS: amphetamine-type substances

CBT: cognitive behavioural therapy

CI: confidence interval

CM: contingency management

CRA: community reinforcement approach

MD: mean difference

ROC: regulation of craving

RR: relative risk

SMD: standardised mean difference

TAU: treatment as usual

Introduction

Stimulant use disorders are characterised by continuous use of cocaine, amphetamine-type substances (ATS; including amphetamines, methamphetamines, and "ecstasy"), or other psychostimulants leading to substantial functional impairment and distress [1]. Cocaine and ATS are the most commonly abused stimulants worldwide, with an annual prevalence of 0.38% and 1.20% respectively in those aged 15-64 years [2]. A growing number of new amphetamine-like psychoactive substances adds to the burden of disease [3]. Moreover, the illegal sharing and trading of prescription stimulants for non-medical use is an emerging phenomenon amongst younger populations [4,5]. Men are more likely than women to use cocaine or ATS, although the gender divide is narrower among young people than among adults [2].

The burden of disease is large [6] and special consideration is warranted for women using stimulants. Firstly, these women have unmet needs for contraception, especially for the most effective methods [7]. This can lead to unintended pregnancies with consequent poor physical and psychosocial outcomes [8], with only a few studies for addressing the needs of this specific subpopulation [9]. Then, prenatal substance use has the potential to cause foetal harm, calling into question their maternal fitness and often leading to punitive responses [10]. The social costs are further inflated by the association between stimulants use and high-risk

behaviour, crime, violence, and sexual abuse [11,12], with a growing number of girls and women arrested for drug-related felonies such as drug-selling of illicit [2,13] and prescribed stimulants [14], an emergent association between cocaine female-users and offending [15], and an elevated likelihood of received aggression [16]. The odds of violence rise as social isolation and drug use increase [17], with a recent study showing that almost half of homeless and unstably-housed women use stimulants at baseline, and those who are not using at baseline being at high-risk to start using in a short time period [18]. Moreover, there is evidence of very strong correlations between involvement in sex trading and crack cocaine use, with these women also reporting higher frequency and intensity of cocaine use [19]. Overall, some authors argued that female addicts have not been studied more systematically because they are perceived as being "doubly stigmatised", not only for the stigma attached to drug use, but also because they are felt to have failed their role as spouses and mothers; as a result, even when they seek help, addicted women can be denigrated as more pathological than their male counterpart [20].

Importantly, people affected by stimulant use disorders are increasingly seeking out treatment [2], but there is no clear consensus about the use of specific treatments. Gender differences in treatment response are well-known from old to recent studies, where women seem to show a more stable response to treatment long-term [21–23]. However, access to treatment has historically highlighted practical barriers for women such as male-only services, services that are unable to accommodate women with children, or women with children fearing that children could be removed from their custody if they presented for treatment [24]. Currently, psychosocial interventions remain the gold-standard for the treatment of stimulant use disorders as endorsed by international clinical guidelines [25–27]. However, these recommendations do not account for the latest updates from research and lack information about the specific issues faced by women who use stimulant drugs. The

prominence of being attentive to gender differences goes beyond routine clinical practice; indeed, the United Nations Office on Drugs and Crime states that "drug use undermines the aspect of sustainable development related to gender equality and the empowerment of women and girls" [2].

In this article, we aim to review the most recent evidence published in the literature about psychosocial interventions trialled in stimulant use disorders. Because clinicians are increasingly encouraged to pursue a gender-specific approach, we will focus on results relevant to the needs and goals of women.

Literature search

A comprehensive computer literature search of Cochrane Drugs and Alcohol Group Register of Trials, Medline, Embase, CINAHL, ISI Web of Science, and PsycINFO was conducted according to a previously validated search strategy [28]. A hand search of the reference list of retrieved articles was also performed. All study typologies were included provided they were relevant for the purpose of this narrative review. The search was restricted to a 2-year review period as per journal policy.

Findings

We identified 22 eligible studies: 17 discussed psychosocial interventions in stimulant use disorders but did not include analyses for gender differences [28-44], whereas 5 had a focus on women [21,45-48]. A brief overview of the most recent studies on psychosocial interventions in stimulant use disorders is provided in the next paragraph, followed by a detailed discussion of the papers specific to women. The results are summarised in Table 1.

Psychosocial interventions in stimulant use disorders

A recent Cochrane review assessed the efficacy and acceptability of several psychosocial interventions: contingency management (CM), cognitive behavioural interventions - including cognitive behavioural therapy (CBT), coping skills training/relapse prevention, and community reinforcement approach (CRA) -, motivational interviewing, interpersonal therapy, psychodynamic therapies, and 12-step programmes. When compared to no treatment, any psychosocial intervention reduced the dropout rate (risk ratio [RR]: 0.83, 95% confidence interval [CI]: 0.76 to 0.91, moderate quality evidence), increased the continuous abstinence at the end of treatment (RR: 2.14, 95% CI: 1.27 to 3.59, low quality evidence), and increased the longest period of abstinence (standardised mean difference [SMD]: 0.48, 95% CI: 0.34 to 0.63, high quality evidence), but did not significantly increase continuous abstinence at the longest follow-up (RR: 2.12, 95% CI 0.77 to 5.86, low quality evidence). When compared to treatment as usual (TAU), any psychosocial intervention reduced the dropout rate (RR: 0.72, 95% CI 0.59 to 0.89, moderate quality evidence), but did not increase either the continuous abstinence at the end of treatment (RR: 1.27, 95% CI 0.94 to 1.72, low quality evidence) or the longest period of abstinence (mean difference [MD]: −3.15 days, 95% CI −10.35 to 4.05, low quality evidence) [28]. This study could not produce hierarchies for evidence-based treatment, and no sensitivity analysis for exploring sex differences in response to treatment was performed.

Several clinical trials were published in the review period: most studies focussed on CM either alone or in addition to other manualised therapies [31, 37-39], others on cognitive behavioural interventions [35,43], counselling [36,42], motivational interviewing [34], combined treatments [30,32], and ancillary treatments [29,33,40,41,44], see Table 1, upper part.

Psychosocial interventions in stimulant use disorders: a focus on women

An increasing number of researchers have been attentive to gender-specific issues; with regards to psychosocial interventions in stimulant use disorders, there were 5 studies published in the review period that did either secondary analyses for sex-related differences or specifically focussed on a female population. These results are summarised in Table 1, lower part.

A key study investigated the impact of sex on the longest duration of abstinence and the percentage of negative urine samples in a large sample of 323 cocaine-using methadone patients from four prior randomised clinical trials comparing CM plus TAU (i.e. methadone) to TAU alone. Firstly, CM was confirmed as a highly effective intervention regardless of sex: the longest duration of abstinence was more than doubled for patients randomised to the CM condition compared to TAU (means and standard errors: 4.4 ± 0.3 weeks versus 1.9 ± 0.4 weeks, p=0.001), and the percentage of negative samples was also higher with CM (means and standard errors: 52.6% ± 3.1 versus 36.8 ± 3.6, p<0.001). Secondly, despite displaying several worse prognostic factors (i.e. lower income, more severe problems in medical, employment, family/social, and psychological domains on the Addiction Severity Index subscales), women had a greater longest duration of abstinence than men by approximately 1 week (respectively, means and standard errors: 3.8 ± 0.3 weeks versus 2.6 ± 0.4 weeks, p<0.001), and they also submitted a greater percentage of negative samples relative to men (respectively, means and standard errors: 48.3% ± 3.1 versus 41.2% ± 3.8, p=0.001). Hence, the authors inferred that such improved outcomes may reflect that methadone maintained women who use cocaine may be more motivated to achieve abstinence than their male counterparts [21]. A conceptually similar trial examined a large sample of 920 men and women with substance use disorders, of whom 376 were male and 407 were female cocaine users. Participants were randomised to either CM or TAU (i.e. outpatient group therapy

sessions): again, CM proved better than TAU, with participants assigned to CM staying in treatment for 1 week longer (means and standard errors: 6.45 ± 0.17 weeks versus 5.13 ± 0.20), achieving approximately 2 additional weeks of abstinence (means and standard errors: 5.47 ± 0.16 versus 3.44 ± 0.19), and submitting higher percentages of negative samples (means and standard errors: 82.20% ± 1.00 versus 77.66% ± 1.19). In this study, females performed similarly to males and no sex differences were elicited for any outcomes. However, the authors noticed that equivalent results were achieved in men and women despite the latter presenting with more predictors of poor outcomes at the beginning of treatment (i.e. lower educational achievement, more unemployment, younger age, increased likelihood of submitting a positive urine sample at intake) [46].

Two further studies concentrated on an especially high-risk subgroup of women trading sex for drugs or money. A secondary analysis of several previous trials included 493 women with cocaine use disorder and compared CM to TAU. As per other studies, patients assigned to CM did better than those under TAU ($p<0.05$) as they were retained in treatment for longer (means and standard errors: 6.8 ± 0.3 weeks versus 5.7 ± 0.3 weeks), achieved longer continuous duration of abstinence (means and standard errors: 5.4 ± 0.3 weeks versus 3.0 ± 0.3 weeks), and submitted more negative samples (means and standard errors: 78.4% ± 1.9 versus 72.5% ± 2.6). Importantly, this study also revealed that a history of sex trading was associated with further episodes of sex trading, less education, unemployment, and HIV infection ($p<0.05$); however, these women responded to treatment equally well in terms of retention and abstinence ($p>0.71$). Conversely, shorter duration of abstinence during treatment was linked to continued involvement in sex trading (OR: 0.84 95% CI: 0.74 to 0.95, $p=0.005$), with each additional week of abstinence during treatment associated with a 16% reduction in the likelihood of trading sex over a 9-month follow-up. Based on these data, the authors advocated the importance of intensive and directed approaches for

addressing this high-risk behaviour, especially because this subpopulation responded to treatment similarly to their non sex-trade counterparts, with the advantage that the duration of abstinence obtained during treatment was significantly inversely associated with the likelihood of continued involvement in sex trading, yielding long-term personal and societal benefits such as decreasing HIV and other disease risks [47]. Another preliminary study did not report data on effectiveness, but is worth mentioning because it showed moderate feasibility (31% of eligible women completed the treatment course) for an innovative approach combining conditional cash transfer (i.e. a type of CM) and CBT in a high-risk population of Cambodian female sex workers using ATS, who live in a resource-limited area; further studies will need to evaluate the potential of this strategy for reducing ATS use and optimise HIV prevention [45].

Finally, a single study assessed the effectiveness of ecologically-based family therapy (i.e. a 12-session family systems therapy that targets specific dysfunctional interactions linked to the development of problem behaviour) against TAU (i.e. women's health education, a 12-session manualised educational intervention) in mothers of 8- to 16-year-old children. A separate regression analysis for cocaine showed that mothers receiving the intervention exhibited a faster rate of decrease in cocaine use ($p<0.05$); therefore, the authors suggested that family systems therapy should undergo further research since its implementation has prospective benefits on both mothers using substances and their children [48].

Conclusion

In summary, stimulant use disorders have a large epidemiological relevance in women. Females using stimulants show greater vulnerability to physical and mental illness and face many other challenges including the potential of motherhood, the experience of violence and homelessness, and the exposure to high levels of stigma. These factors may hinder the

pathway of recovery as direct barriers to a continuous access to care. Despite these predictors of poorer prognosis, women respond to treatment at least as well as their male counterparts, and therefore we advocate for all these additional hurdles to be seen in fact as potential avenues for increasing engagement with treatment and improving longer-term outcomes.

Psychosocial interventions are the only evidence-based treatment for stimulant use disorders. In the last few years, several studies in this area either examined gender differences or expressly focussed on women. Behavioural approaches, and especially CM either alone or in add-on, showed the most promising results in terms of feasibility (both in low- and high-income countries), acceptability, and efficacy. Such interventions, based on positive reinforcement from operant conditioning models, seem to apply particularly well to people affected by stimulant use disorders, and their value can be further augmented in women when other psychological therapies and social support are used for addressing those specific issues described above. Interestingly, these findings appear confirmed by a prior study highlighting the benefits of those interventions with an emphasis on the enhancement of goal-directed behaviour and the application of more desirable habits to replace habitual drugs use; on the contrary, punitive approaches are ineffective at best [49], if not liable of increasing distress and stigma.

Overall, most recent trials supported the use of combined approaches that include CM, but secondary research and updated guidelines need to pool such evidence, benchmark different interventions, and consider sex differences for evaluating outcomes appropriately. On this basis, we will be able to endorse the implementation by clinicians and healthcare systems of integrated therapies for stimulant use disorders that include CM in combination with other psychosocial interventions, tailored to gender-specific needs and aspirations.

Key points

- Stimulant use disorders affect a growing number of women, with dire repercussions on their life and on society.
- Current research is increasingly accounting for gender-related differences when studying psychosocial interventions for stimulant use disorders.
- Most recent trials on people with stimulant use disorders seem to favour combined psychosocial interventions involving CM.
- Further secondary studies are required to confirm the validity of these findings and promote the implementation of integrated bespoken treatments for men and women with stimulant use disorders.

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Conflicts of interest

None.

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Papers of particular interest, published within the annual period of review, have been highlighted as:

* of special interest

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