

A pilot RCT of an online mindfulness-based cognitive intervention for chemsex

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Abstract

Objectives: Chemsex is a term used to describe sex acts using psychoactive substances to enhance the sexual experience/arousal and predominates among men who have sex with men (MSM). Chemsex drugs predominantly include γ -hydroxybutyric acid (GHB) and analogues, methamphetamine, mephedrone and erectile dysfunction agents (e.g., Sildenafil). *Mindfulness-based cognitive therapy* (MBCT) combines *cognitive therapy* and *mindfulness* and has been shown to help support both sexual functioning and methamphetamine use. However, limited clinical trials have evaluated the use of cognitive mindfulness for chemsex in MSM. The present study assessed the effectiveness of an online mindfulness-based cognitive intervention (MBCI) among 29 MSM aged 18–30 years engaged in chemsex.

Design and Setting: A mixed methods approach consisted of a randomised waitlist-controlled trial and a content analysis reviewing participants' feedback on MBCI. The design of the intervention was based on a behavioural taxonomy mapped to selected behaviour change techniques (BCTs) to support the reliability of MBCI in its delivery.

Main Outcome Measures: Participants completed assessments measuring levels of chemsex, mindfulness, sexual self-efficacy and well-being, taken at Weeks 0, 8 and 12 (follow-up).

Results: Participants reported lower levels of chemsex and higher levels of cognitive mindfulness, sexual self-efficacy and well-being postintervention and at the 12-week follow-up. The content analysis feedback responses yielded favourable outcomes, suggesting that participants developed a sense of self-compassion, confidence and positive identity.

Conclusions: The MBCI effectively reduced chemsex; however, this study warrants replication with a larger, more diverse group of participants.

KEYWORDS

behavioural taxonomy, Chemsex, harm minimisation, mindfulness, MSM

1 | INTRODUCTION

Chemsex, sometimes coined as chem fun or chems, is a term used to describe sex acts with the use of psychoactive substances

to enhance or facilitate the sexual experience/arousal and predominates among men who have sex with men (MSM; Giorgetti et al., 2017). Chemsex drugs tend to include, though not exclusively, γ -hydroxybutyric acid (GHB) and associated analogues,

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methamphetamine, mephedrone, erectile dysfunction agents and alkyl nitrites (Bracchi et al., 2015), often in combination (Sewell et al., 2017). In an online survey consisting of 3933 men, 1 in every 10 MSM in the UK have engaged in chemsex, including two or more substances such as methamphetamine, mephedrone, GHB/GBL and ketamine (Blomquist et al., 2020).

Polydrug chemsex can facilitate sexual arousal, excitement and experimentation (Kurtz, 2005). Richardson et al. (2023) state that MSM with human immunodeficiency virus (HIV) are more likely to use these substances simultaneously than MSM without HIV. Risk-taking can be promoted and facilitated with dating apps such as Grindr, which might result in condomless sex and sharing injecting drug paraphernalia among injecting users, thus potentiating the risk of HIV/hepatitis C transmission (e.g., Maxwell et al., 2019). Whilst pre-exposure prophylaxis (PrEP) protects by eliminating or reducing the risk of onward transmission, this depends on medication adherence (e.g., Maxwell et al., 2019), which may be compromised in chemsex users. In the UK, it has been estimated that more than half of all new HIV infections are among MSM (Rostosky et al., 2008). According to Tomkins et al. (2019), chemsex might also be associated with higher incidents of nonconsensual sex compared with the non-chemsex group, which may be due to changes in inhibitory control.

Self-efficacy has also been applied to sexual behaviour, where sexual self-efficacy refers to a person's belief in their ability to handle different sexual contexts (Rostosky et al., 2008). Briefly, self-efficacy is part of a social cognitive theory that reflects a person's belief in their competence to complete a task (Bandura, 1997). According to Vaziri and Lotfi (2013), increasing levels of sexual efficacy can lead to higher levels of sexual functioning and well-being and has been associated with safe sexual practices (Banbury et al., 2023).

A growing body of research has suggested that mindfulness supports minimising drug-using behaviours in drug users, including cocaine, ketamine (e.g., Dakwar et al., 2019) and methamphetamine (e.g., Carrico et al., 2018). Mindfulness involves paying attention to the present moment and can create a nonjudgemental balance between helpful and unhelpful thoughts (Shorey et al., 2016). Mindfulness has also been used in different healthcare contexts and for various presenting issues, such as HIV, stress and medication adherence (Hecht et al., 2019), risky sexual behaviours (e.g., Shorey et al., 2016) and sexual dysfunction (e.g., Banbury et al., 2023). The overwhelming consensus suggests that mindfulness can mitigate negative self-thoughts and shame and increase well-being and efficacy, supporting behavioural change (Bowen & Enkema, 2014).

Recently, there has been increased attention on mindfulness in those who engage in risky sexual behaviours and who experience substance use disorders. Dispositional mindfulness appears lower among these individuals than among those who do not engage in risky sex (e.g., Shorey et al., 2016). However, there seems to be no current mindfulness intervention evidenced for chemsex. Significantly few evidence-based online interventions have

Implications for Practice and Policy

- Outcomes in this study suggested that MBCI helped reduce levels of chemsex and increased well-being. This cultivated a stronger understanding of self-identity in terms of participants' needs and wants, with a greater awareness.
- Research exploring sexual self-efficacy and sober sex, along with MSM sexuality, is limited where the focus is on public health. It is essential to consider sober sex in such studies; otherwise, MSM's sexual behaviour appears to have a negative connotation, which might further compound feelings of, for example, shame.
- Examining sexual self-efficacy, sexual satisfaction, sexual functioning and relationship/couple quality in MSM may provide a better understanding of the role sexual self-efficacy has in supporting sober sex among chemsex users.

addressed chemsex among MSM. Different modality-based interventions must be developed, preferably based on a Behavioural Change Technique Taxonomy version 1 (BCTTv1; Michie & Abraham, 2004), to support the reliability of delivering these interventions. The BCTTv1 comprises 93 behaviour change techniques (BCTs) categorised into 16 groups. These BCTs are the active ingredients of behaviour change, and each BCT has its individual number within each of the 16 groups. Each of the grouped BCTs is replicable, irreducible and observable (Michie & Abraham, 2004). Indeed, this study has set out to identify and describe the key components and BCTs as part of this online mindfulness intervention (Michie et al., 2014). These have been mapped to the BCTTv1 taxonomy to support standardisation for future trial implementation (Michie & Abraham, 2004). Based on the literature review, the effectiveness of this online MBCI intervention, guided by the BCTTv1, for MSM who engage in chemsex was based on four self-report measures looking at cognitive mindfulness, chemsex engagement, sexual self-efficacy and well-being. In Study 1, participants were randomised to either the active experimental group (Group 1) or the waitlist (delayed) control group (Group 2). In Study 2, a series of feedback questions aimed to elicit participant experiences of MBCI.

In Study 1, it was predicted that those who engage in MBCI would report higher levels of cognitive mindfulness, well-being and sexual self-efficacy and lower levels of chemsex activity. Differences between these measures would be identified between Groups 1 and 2 at Group 2's commencement with MBCI.

In Study 2, a follow-up focus group based on a series of feedback questions also established participants' experiences of MBCI. The focus centred on a content analysis of participants' experiences of MBCI concerning their sexual behaviour, well-being and drug-using behaviours.

2 | METHODOLOGY

2.1 | Design

An online mixed methods approach was used, including a randomised waitlist-controlled study (Study 1) and a content analysis (Study 2). We used a mixed methods design to improve the clinical trial quality by incorporating participant feedback on their intervention experiences. Since this is a pilot study, the intervention is developmental, and we were keen to embed participant feedback into further developing this intervention. Value and impact were key contributors to our decision to pursue a mixed methods approach. Participant feedback placed the statistical outcomes into context and participants were key co-collaborators in improving this clinical trial. A content analysis was selected simply as a means of evaluating the intervention and developing it further for a future clinical trial on a larger scale. A waitlist-controlled study was used as we wanted all the participants to experience MBCI. It was important to establish whether MBCI had a positive impact on chemsex, well-being and sexual self-efficacy when comparing the active and delayed experimental groups.

2.1.1 | Study 1

Group 1 was the experimental group receiving MBCI and Group 2 was the delayed control group. Group 2 received MBCI at Week 8. The two groups were compared for differences (between-subjects designs) in MBCI effectiveness on chemsex use, well-being and self-efficacy across 0, 8 and 12 weeks (within-subjects design).

2.1.2 | Study 2

Seven feedback questions based on participants' experiences of MBCI were obtained online at Week 12 (follow-up).

2.2 | Participants

A Microsoft Form including a link to the study content accessible via Facebook, LinkedIn, Reddit and Twitter was used to recruit participants. Participants included 29 MSM engaged in chemsex, aged 18 years and above. Of the sample, 15 had been randomly allocated to Group 1, and 14 had been randomly allocated to Group 2. As part of the inclusion criteria, participants were MSM, could read and write English, had access to a password-protected laptop/computer and engaged in chemsex. Furthermore, participants not registered with a general practitioner (GP) or involved in a substance use programme were excluded from this study.

Most of the sample were aged between 18 and 30 years (16, 55.2%), White (25, 86.2%), British (26, 89.7%) and single (21, 72.4%). Most chemsex use started between ages 18 and 30 years (24,

82.8%), which involved weekly (18, 62.1%) poly-chemsex use, including methamphetamine, GHB, poppers (15, 51.7%) and cocaine (14, 48.1%), which impacted prescription medication use (16, 53.3%), including antiviral medications (6, 20.7%).

Concerning the participant CONSORT diagram shown in Figure 1, of the 45 participants assessed for eligibility, 16 were excluded by the inclusion and exclusion criteria. Twenty-nine participants remained with us throughout this study at Week 8. However, late attendance to mindfulness groups was a frequent problem. Whilst participants remained with the study at Week 12, 18 did not attend Study 2 (the focus group qualitative follow-up), leaving 11 participants.

2.3 | Materials

The development of the MBCI has been based on a behavioural taxonomy using the BCTTv1 (Michie et al., 2014). The BCTTv1 has been rigorously tested to establish its effectiveness in supporting interventions associated with change behaviour. The 93 BCTs are the active ingredients of behaviour change, where each intervention is likely to consist of more than one BCT and serve more than one function (BCTTv1; Michie et al., 2014). The intervention in this study included 15 domains, in which 35 out of the 93 BCTs listed in the BCTv1 taxonomy were identified. The selection of these domains, as outlined in Table 1, used a triangulation process to ensure consistency in mapping the BCTs to the intervention. The authors of this study independently mapped the BCTs in developing the MBCI before collectively reviewing the intervention for consistency.

The main target of this study was to engage participants with mindfulness exercises and improve well-being and mindfulness whilst reducing chemsex use (Bandura, 1997). The main activities included mindfulness, breathing, relaxation techniques, mindfulness of the senses and the body and understanding the self (adapted from Bossio et al., 2018). Concerning Table 2, this online MBCI contains cognitive, behavioural and mindfulness factors and each session included substance use and sexual behaviour, working with the inner critic and high-risk situations, sex without drugs and sexual identity and psychosexual well-being, substance use and self-compassion. Homework exercises were encouraged, which consisted of education, training, modelling and enablement (Cane et al., 2012). To expand, education included psychoeducational information on chemsex, substance use, triggers associated with chemsex, sexual well-being and mindfulness, along with additional resources. Training provided instructions on how to go about engaging in these online activities (adapted from Hucker & McCabe, 2015). Modelling provides examples in action, such as MSM discussing their experiences of chemsex, including verbal persuasion and challenging negative self-talk, and how to go about doing the exercises, and enablement is aimed at increasing participants' capability of engaging in these activities towards well-being (Bandura, 1997). Charts, self-monitors, diaries and journaling would further support this. Furthermore,

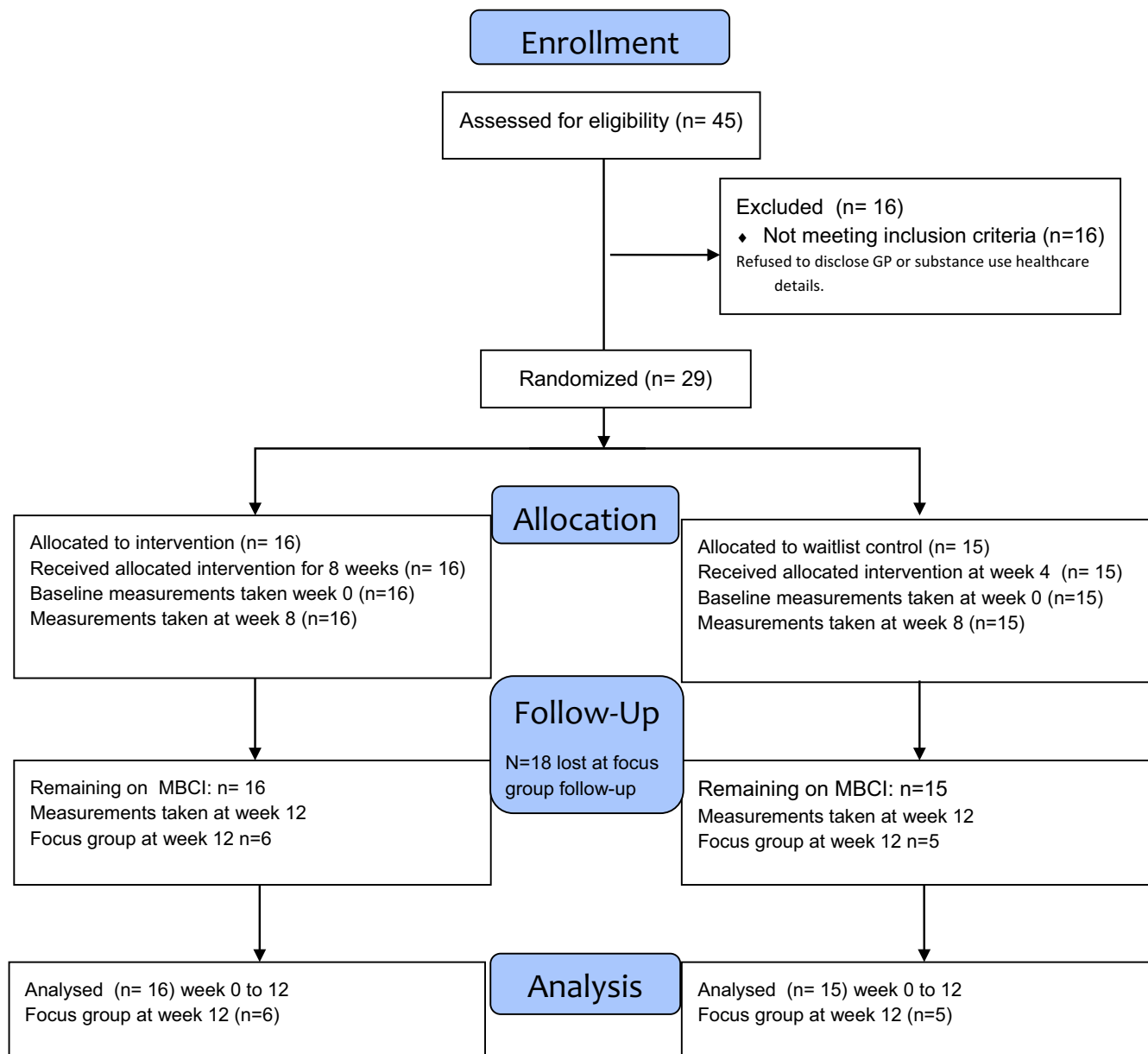


FIGURE 1 CONSORT 2010 flow diagram for chemsex recruitment.

prompts, action plans and cues were supportive intervention components (Cadogan et al., 2016). Feedback and support, along with discussing the educational components, training, modelling and enablement, had been addressed throughout this study (Hucker & McCabe, 2015).

2.4 | Materials: Evaluating the MBCI intervention (assessment tools)

Demographic information included living location, ethnicity, religious preference, partnered status, sexuality, age, employment status, children, self-disclosed health problems, sexual difficulties, prescription medications and substance use, including alcohol consumption.

2.4.1 | Study 1

The following assessment tools were utilised to assess levels of cognitive mindfulness, sexual self-efficacy, well-being and chemsex use.

The Cognitive and Affective Mindfulness Scale—Revised (CAMS-R; Feldman et al., 2007) is a 10-item measure with four response categories (1=rarely/not at all to 4=almost always). Higher scores indicate higher levels of mindfulness (range 4–40). Cronbach's alphas ranged between .82 and .84. Cronbach's alpha for this study was .724.

The Sexual Self-Efficacy Scale (John Snow International Research and Training Institute, Inc., 2000) is a six-item questionnaire comprising four response categories (1=not at all to 4=very much). Cronbach's alpha ranges between .58 and .74. Questions centre on self-efficacy for healthy sexual behaviours, including condom use

TABLE 1 Behaviour change techniques in each component of the online MBCI.

1 Goals and planning
1.1 Goal setting (behaviour)
1.2 Problem-solving
1.3 Goal setting (outcome)
1.4 Action planning
1.9 Commitment
2 Feedback and monitoring
2.2 Feedback on behaviour
2.3 Self-monitoring of behaviour
2.7 Feedback on outcomes of behaviour
3 Social support
3.1 Social support (intangible)
4 Sharing knowledge
4.1 Instructions on how to perform the behaviour
4.2 Information on antecedents
4.3 Reattribution
5 Natural consequences
5.1 Information about health consequences
5.3 Information about social and environmental consequences
5.5 Anticipated regret
5.6 Information about emotional consequences
6 Comparison of behaviour
6.1 Demonstration of behaviour
8 Repetition and substitution
8.1 Behavioural practice/rehearsal
8.2 Behaviour substitution
10 Repetition and substitution
10.7 Self-incentive
10.10 Reward outcome
11 Regulation
11.2 Reduce negative emotions
12 Antecedents
12.4 Distraction
12.5 Adding objects to the environment
12.6 Body change
13 Identity
13.2 Framing/reframing
13.3 Incompatible beliefs
13.4 Valued self-identity
13.5 Identity associated with changed behaviour
14 Scheduled consequences
14.4 Reward approximation
15 Self-belief
15.2 Mental rehearsal of successful performance
15.3 Focus on past success
15.4 Self-talk
16 Covert learning
16.2 Imaginary reward

TABLE 2 Target BCT taxonomies of techniques within this intervention.

Cognition
<i>Psychoeducation</i>
Understanding chemsex (4.2, 5.1, 5.3, 5.5, 5.6 and 9.2)
<i>Sexual self-efficacy</i>
The belief in having enjoyable sex (1.2, 1.4, 1.9, 2.3, 11.2 and 15.3) without chemsex (16.2)
<i>Cognitive reframe/self-talk</i>
Challenging thoughts associated (4.3, 11.2, 13.2 and 15.4) with chemsex
Behavioural
<i>Reward and reinforcement</i>
Encourage new behaviour coupled (1.2, 1.4, 4.1, 8.1 and 8.2) with positive feedback (10.7, 10.10, 11.2, 14.4 and 15.2)
<i>Harm minimisation</i>
Exhibiting less risky sexual and drug-using behaviour (5.1, 5.3, 5.5, 8.3 and 8.4)
<i>Self-care behaviours that promote physical, mental and emotional well-being</i> (10.7 and 10.10)
<i>Self-monitoring</i>
Monitor behaviour towards goals (1.1, 1.2, 1.3, 1.4, 1.9, 2.2, 2.3 and 2.7)
MBCI
<i>Understanding emotions</i>
Recognising and developing emotions (1.2, 3.1, 5.6, 8.1 and 11.2) and coping strategies (12.4)
<i>Goal setting</i>
For example, SMART goals for chemsex (1.1, 1.2, 1.3, 1.4, 1.9, 2.2, 2.3 and 2.7)
<i>Self-directed meditation</i>
Creating better awareness of body, mind and breathing (working with craving) (1.9, 4.1, 6.1, 8.1, 11.2 and 15.2)
<i>Body scan</i>
Bringing attention and awareness to different areas of the body. Top to toe (4.1, 6.1, 8.1, 11.2 and 15.2)
<i>Mindfulness practices</i>
Being aware of the present moment (4.1, 6.1, 8.1, 11.2, 12.6, 15.2 and 16.2)
<i>Mindfulness stretching</i>
Mind and body connection (4.1, 6.1, 8.1, 11.2, 12.6, 15.2 and 16.2)
<i>Self-compassion</i>
Encouraging a positive self-identity (11.2, 13.1, 13.2, 13.4, 13.5, 15.3 and 15.4)

and sexual consent. There is no reverse scoring. Scores range from 6 (little to no self-efficacy) to 24 (high self-efficacy). Cronbach's alpha for this study was .752.

The Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS; Tennant et al., 2007) is a positively worded 7-item questionnaire with five response categories looking at functioning and aspects of well-being. The response categories range from

1=none of the time to 5=all of the time. Cronbach's alpha was .89 to .91. Scores range from 7 to 35, where the latter indicates the highest level of well-being. Cronbach's alpha for this study was .730.

There is currently no standardised chemsex scale. Therefore, we developed a scale for this study. This is a 19-item questionnaire with four response categories (1=never to 4=always). Scores ranged between 19 (low chemsex engagement) and 76 (very high chemsex engagement). Scores were categorised as follows: 19, no chemsex; 20–34, low chemsex; 35–50, moderate chemsex; 51–66, high chemsex; and 67+, very high chemsex. Questions 1–4 focus on drug use, 5–7 self-care and self-compassion, 8–10 lifestyle, 11–14 risk behaviour, and 15–19 well-being/mental health. Cronbach's alpha for this study was .708.

2.4.2 | Study 2

Additionally, an interview schedule with seven key questions was developed for the focus group carried out at Week 12 (please see content analysis outcomes for questions and responses).

2.5 | Procedure

Under the British Psychological Society (BPS) code of ethics and conduct for internet-mediated research (British Psychological Society, 2017) and following ethics approval from the University Research Ethics Review Panel, this clinical trial was registered with www.clinicaltrials.gov (NCT05929040). Details of the study became available online via social media sites: LinkedIn, Reddit, Twitter and Facebook. Those interested in participating consented to authorise the principal researcher to contact their GP and healthcare service supporting their substance use. The information sheet and consent form had been attached to a password-encrypted email. Once this had been received, participants had access to all the materials. All participants were provided with a pseudonym for the study. The team had access to participants' identities so that the intervention could be monitored in its delivery. Both study groups completed self-report questionnaires throughout the programme at Weeks 0 (baseline), 8 and 12. Group 2 did not access the materials until Week 8 when they commenced the programme. Assessments took approximately 20 min to complete. Online group mindfulness sessions were held for 2–3 h once every fortnight, and homework activities were encouraged between these meetings. A focus group was also held during Week 12 as it was essential to establish participants' overall views and experiences of the programme and their suggestions for improving it (Ekman et al., 2011). Focus groups lasted approximately 1 h, with approximately five participants per group (Group 1, $n=6$; and Group 2, $n=5$). Throughout the study, participants were ensured confidentiality concerning their engagement.

Participants were reminded that they could withdraw from the study at any point and did not have to answer all the assessment questions. All responses generated from the participants in this

study remain stored on a password-protected computer and in accordance with the General Data Protection Regulations (2018) and Data Protection Act (2018).

3 | RESULTS

3.1 | Study 1

Table 3 includes the overall means and standard deviations for Groups 1 and 2 (within the study design) for chemsex, mindfulness and cognition, sexual self-efficacy and well-being at Weeks 0, 8 and 12.

A repeated measures ANOVA was conducted to analyse the effect of time on chemsex, mindfulness and cognition, sexual self-efficacy and well-being. For Group 1, Mauchly's test of sphericity for chemsex, mindfulness and cognition, sexual self-efficacy and well-being had violated the assumption, $p < .001$. Therefore, reference to Wilks' Lambda for all variables was made for Groups 1 and 2. There was a significant effect of time on chemsex, $F(2, 13) = 13.125$, $p < .001$, $\eta_p^2 = .669$, where the fixed effect was strong, with narrow confidence intervals (CI 95%) ranging between 26.714 and 29.198. Time significantly affected mindfulness and cognition, $F(2, 13) = 3.433$, $p = .064$, $\eta_p^2 = .346$. The fixed effect was strong, with narrow confidence intervals (CI 95%) between 16.674 and 19.973. For sexual self-efficacy, $F(2, 13) = 54.383$, $p < .001$, $\eta_p^2 = .893$, with narrow confidence intervals (CI 95%) between 12.361 and 15.727. There was a significant effect of time on well-being, $F(2, 13) = 17.844$, $p < .001$, $\eta_p^2 = .733$, with narrow confidence intervals (CI 95%) between 16.782 and 19.973.

TABLE 3 Means and standard deviations for Groups 1 and 2 for chemsex, cognitive mindfulness, sexual self-efficacy and well-being.

Measure	Group 1 ($n=15$)		Group 2 ($n=14$)	
	M	SD	M	SD
Chemsex				
Week 0	41.53	4.90	51.13	7.78
Week 8	32.40	7.44	42.07	5.56
Week 12	31.20	7.74	38.08	4.54
CAMS-R				
Week 0	24.47	6.19	20.14	3.92
Week 8	29.87	3.48	30.29	3.02
Week 12	29.53	3.34	29.86	2.93
SSE				
Week 0	8.51	2.65	8.90	0.46
Week 8	14.87	4.46	15.43	1.10
Week 12	18.47	3.58	17.50	1.01
SWEMWBS				
Week 0	12.73	3.45	11.29	2.20
Week 8	21.13	3.83	20.88	3.88
Week 12	21.27	4.83	22.14	3.13

Concerning the interaction effect between chemsex, mindfulness, sexual self-efficacy and well-being, Mauchly's test of sphericity for chemsex and mindfulness and cognition, sexual self-efficacy and well-being was $p < .001$. Therefore, a Greenhouse–Geisser correction was used. Concerning Wilks' Lambda, there was a significant interaction effect between chemsex, mindfulness, sexual self-efficacy and well-being, $F(6, 8) = 7.153$, $p = .014$, $\eta_p^2 = .905$.

For Group 2, there was a significant effect of time on chemsex, $F(2, 12) = 18.186$, $p < .001$, $\eta_p^2 = .752$, where the fixed effect was strong, with narrow confidence intervals (CI 95%) ranging between 41.852 and 45.624. Time significantly affected mindfulness and cognition, $F(2, 12) = 37.357$, $p < .001$, $\eta_p^2 = .882$. The fixed effect was strong, with narrow confidence intervals (CI 95%) between 25.451 and 28.073. For sexual self-efficacy, $F(2, 12) = 36.157$, $p < .001$, $\eta_p^2 = .858$, with narrow confidence intervals (CI 95%) between 12.449 and 15.408. There was a significant effect of time on well-being, $F(2, 12) = 151.103$, $p < .001$, $\eta_p^2 = .962$, with narrow confidence intervals (CI 95%) between 12.449 and 15.408.

Concerning the interaction effect between chemsex, mindfulness, sexual self-efficacy and well-being, Mauchly's test of sphericity for chemsex, mindfulness and cognition, sexual self-efficacy and well-being was $p < .001$. Therefore, a Greenhouse–Geisser correction was used. There was a significant interaction effect between chemsex, mindfulness and cognition, sexual self-efficacy and well-being, $F(6, 8) = 28.988$, $p < .005$, $\eta_p^2 = .975$.

T-test comparisons were made between Groups 1 and 2 at Weeks 0, 8 and 12 and between Group 1 at Week 8 and Group 2 at Week 0. There were significant differences in chemsex engagement between Groups 1 and 2 at Week 0 ($t(13) = 10.071$, $p < .001$), Week 8 ($t(13) = 11.071$, $p < .001$) and Week 12 ($t(13) = 8.288$, $p < .001$) and between Group 2 at Week 0 and Group 1 at Week 8 ($t(13) = 20.143$, $p < .001$). There was no statistical difference between Groups 1 and 2 at Week 8 with levels of mindfulness and cognition, $p \geq .05$. However, there were significant differences in mindfulness and cognition between Groups 1 and 2 at Week 0 ($t(13) = 4.500$, $p < .001$) and Week 12 ($t(13) = 8.714$, $p < .001$) and between Group 2 at Week 0 and Group 1 at Week 8 ($t(13) = 9.500$, $p < .001$). Levels of sexual self-efficacy at Weeks 8 and 12 were nonsignificant, $p > .05$. However, there were significant differences in sexual self-efficacy between Week 0 ($t(13) = 0.571$, $p = .026$) and between Group 2 at Week 0 and Group 1 at Week 8 ($t(13) = 5.857$, $p < .001$). Levels of well-being at Week 8 between Groups 1 and 2 were nonsignificant, $p > .05$. However, there were significant differences in well-being between Groups 1 and 2 at Week 0 ($t(13) = 1.071$, $p = .040$) and Week 12 ($t(13) = 1.143$, $p = .026$) and between Group 2 at Week 0 and Group 1 at Week 8 ($t(13) = 9.857$, $p < .001$).

3.2 | Study 2

A content analysis at Week 12 was conducted on the outcomes using nonparametric analysis based on 11 participants. The following is

based on the frequency of responses from 11 participants using mentimeter.

The following responses remain in the original written format as stated by participants. In some instances, an interpretation has been included.

- In what ways have you found the MBCT helpful?

Out of 23 participant responses (11 participants sometimes responded more than once), six (26.1%) reported feeling supported; six (26.1%), helped a lot; five (21.7%), feeling better; three (13.0%), more confident; and three (13.0%), stress-free reduction (chemsex).
- In what ways have you found this intervention less helpful or needing improvement?

Out of 11 responses, seven (63.6%) reported needing longer-term support and four (36.4%) required a longer follow-up.
- What was your overall experience of using MBCT?

Out of 22 responses, seven (31.8%) reported the overall experience as being supportive; seven (31.8%), understanding me and my use; five (22.7%), fun; and three (13.6%), helped me reduce drugs.
- In what ways did the MBCT support your chems use?

Out of 25 responses, eight (32.0%) reported safer use (of drugs); seven (28.0%), being more careful; five (20.0%), respecting myself; and five (20.0%), using chems differently.
- In what ways did this intervention (MBCT) support your sexual well-being (e.g., enjoying sex without drugs)?

Out of 15 responses, four (26.7%) reported feeling more sexual (without chems); four (26.7%), understanding my sexual needs more; four (26.7%), erections are getting better (reduced drugs); and three (20.0%), more aware during sober sex.
- In what ways did this intervention (MBCT) support your overall well-being?

Out of 52 responses, 14 (26.9%) stated working with (internal) shame; 12 (23.1%), being more self-compassionate; 7 (13.5%), I understand myself/my needs more; 7 (13.5%), still use but feel more in control; and 6 (11.5%), started to understand my emotions/feelings.
- Is there anything else you would like to add to your experiences/ views of using MBCT as an intervention for chemsex?

Out of 36 responses, 14 (38.9%) liked how it helped my problems, not just drugs (reported that they liked how it [the intervention] addressed all problems rather than just drugs); 5 (13.9%), learning to love who I am; 5 (13.9%), wish we could continue this; 5 (13.9%), needed to be longer; 4 (11.1%), we need continuous support; and 3 (8.3%), surprised it (the intervention) had such a positive effect.

4 | DISCUSSION

This preliminary study examined how an online MBCI might support chemsex and harm reduction via sexual self-efficacy, mindfulness and well-being in MSM. This intervention had been mapped with selected BCTs via a behavioural taxonomy in its development to support its reliability in its delivery (Michie et al., 2014). Levels of self-reported chemsex had decreased, and levels of mindfulness, sexual self-efficacy and well-being had increased for both groups pre- and post-MBCI and continued at follow-up. Furthermore, there was an interaction effect between chemsex, well-being, sexual self-efficacy and mindfulness.

Mindfulness supported the reduction in chemsex in this study, including postintervention and at follow-up. Mindfulness promotes awareness of drug use by identifying the triggers. Mindfulness can create a means of stepping back, pausing and questioning a decision based on a trigger rather than working on autopilot, which is characteristically associated with relapse (Hsu et al., 2015). The content analysis in this study revealed that participants developed a sense of self-love and compassion throughout. This was mainly anecdotal, as reported by participants. However, a component of the chemsex questionnaire incorporated self-care and compassion, where levels had increased throughout the delivery of MBCI. Since participants have voiced self-compassion, using a standardised mindful compassion assessment tool (e.g., Neff, 2003) might better capture the self-compassion participants experienced. Whilst speculative, increased self-compassion suggested by participants in this study, in turn, might have regulated participants' emotions, such as shame, which supported the reduction in chemsex. Indeed, mindfulness-based therapies can reduce shame-proneness (Proeve et al., 2018). According to Woods and Proeve (2014), in a cross-sectional study, self-criticism predicted shame-proneness. Since self-criticism and shame are highly correlated, interventions such as MBCI help regulate the emotions associated with chemsex (González-Baeza et al., 2023).

Furthermore, participants in this study highlighted the nonjudgemental approach associated with the delivery of the MBCI. Research suggests that negative self-judgement is implicated in shame. Therapies focussing on developing a nonjudgemental attitude towards beliefs, thoughts and feelings are vital in regulating shame. Indeed, nonjudgement is a predictor of shame, and those prone to feelings of shame might benefit from mindfulness-based interventions, which target nonjudgemental beliefs towards thoughts and feelings (Sedighimornani et al., 2019). Outcomes in this study suggested that MBCI had helped cultivate a stronger understanding of self-identity in terms of participants' needs and wants with a greater awareness. Jaspal (2022) conducted a narrative analysis which drew on social psychological tenants of the identity process to create a theoretical framework on chemsex in MSM. Based on the literature, Jaspal (2022) suggested that MSM may experience sexuality-related stressors, which can generate issues with self-esteem and self-efficacy. Threats to identity form part of identity process theory triggered by these stressors. A reaction to identity threat is chemsex

as a coping mechanism, and the more chemsex is perceived as a masking/supporting identity process, the more it is engaged with to deflect from, for example, compromised self-esteem (Jaspal, 2022). Based on participant feedback in this study, the MBCI appeared to work with efficacy and a sense of identity, further associated with well-being.

Associated with compromised self-identity and shame is internalised homonegativity. Cassim (2019) explored how chemsex and internalised homonegativity may be connected. A thematic analysis using the minority stress model, based on social constructivism, was used to elicit the main narratives associated with chemsex. Participants suggested that experiences of coming out and life circumstances had contributed to internalised homonegativity. Cassim (2019) suggested an important way forward in helping LGBTQIA+ communities might include breaking down prejudice and stigma at a systemic level if the chemsex phenomenon is to be addressed.

The outcomes of this study accord with a mindfulness intervention delivered by Spectra Charity (Hoff et al., 2020). This government-funded Mindfulness-Based Chemsex Recovery (MBCR) project consisted of three complete MBCR courses, including a body scan, sober breathing, awareness, triggers, cravings, urge surfing and high-risk situations. A further three follow-up refresher sessions and three follow-up aftercare sessions were provided. Outcomes suggested that MBCR was effective, with participants maintaining practice at a 3-month follow-up. Chem use was lower, along with sexually risky behaviour. Similarly, in the outcomes of this study, participants reported an elevated level of satisfaction with the programme, with 79% reporting that the MBCR intervention was essential for managing sex-based drug use.

Based on participant feedback, the authors recognise that the intervention did not target psychosexual elements of chemsex which went beyond HIV (Hoff et al., 2020). Indeed, sober sex and how this affects sexual functioning were highlighted as a future recommendation to consider. As part of the inclusion criteria for the current study, participants were part of a drug treatment programme. Outcomes in Hoff et al.'s (2020) research found that those in drug programmes such as SMART or 12-step programmes had better outcomes with mindfulness than those not in drug treatment. Whilst speculative, this might account for the current study's low attrition rate and the regular feedback throughout the delivery of the MBCI. Future RCTs might compare treatment groups, including an adjunct mindfulness intervention, with standard drug treatments in working with chemsex users.

Sexual self-efficacy in this study referred to the confidence associated with initiating a sexual act and engaging in healthy sexual behaviours, such as condom use and consent (Bandura, 1997). We felt that it was essential to explore sexuality beyond HIV in MSM. The intervention included sexual exploration and fantasy outside the use of chemsex. Outcomes in this study suggested increased sexual self-efficacy and lower levels of chemsex use at MBCI post and follow-up measurements. Participants began better understanding

their sexual preferences and behaviours and experienced improved sexual functioning during sober sex.

Similar to the outcomes of this study, sexual self-efficacy has been associated with safer sexual practices in the literature. For example, in a cross-sectional study of 1648 participants, MSM were grouped into chemsex users, those who did not engage, and those who engaged in other drugs such as cocaine, cannabis and so forth within the last 12 months. Outcomes suggested that engagement in safe sexual practices (including the use of PrEP, condoms and sharing paraphernalia) was lower in the chemsex group than in the other groups. Furthermore, lower levels of sexual self-efficacy and life satisfaction were reported in the chemsex group. Sexual self-efficacy became intertwined with sexual consent and harm minimisation, supporting the importance of promoting sexual self-efficacy in this population.

Research exploring sexual self-efficacy and sober sex, along with MSM sexuality, is limited where the focus is on public health. It is essential to consider sober sex in such studies; otherwise, MSM's sexual behaviours appear to have a negative connotation, which might further compound feelings of, for example, shame. Whilst the authors of this study appreciate the importance of addressing chemsex from a public health perspective, it was also felt essential to understand participants' consensual sexual needs and behaviours (Banbury et al., 2022, 2023).

Additionally, a relationship between sexual satisfaction and sexual self-efficacy has been reported. For example, in a systematic review including 25 studies, sexual self-efficacy and mindfulness were associated with sexual consent, relationship duration and quality (Assarzadeh et al., 2019). Indeed, higher confidence and satisfaction in relationships have been associated with higher sexual self-efficacy. Higher levels of sexual self-efficacy have also been associated with higher levels of positive self-concept and lower levels of sexual risk, including consent and violence (e.g., Assarzadeh et al., 2019; Hsu et al., 2015; Klein, 2014; Malonzo & Felix, 2013). Research on sexual self-efficacy has predominated among female populations (e.g., Assarzadeh et al., 2019). Perhaps examining sexual self-efficacy, sexual satisfaction, sexual functioning and relationship/couple quality in MSM would provide a better understanding of the role sexual self-efficacy has in supporting sober sex among chemsex users.

The delivery of the MBCI in this study also increased levels of well-being (Tomkins et al., 2019). Participants reported being more self-compassionate and mindful of their needs, emotions and feelings. A momentum of research has looked at the relationship between mindfulness and well-being. Glasner-Edwards et al. (2017) conducted an RCT looking at the effectiveness of mindfulness for methamphetamine use. This RCT lasted 12 weeks and consisted of participants in rehabilitation for methamphetamine being allocated to either an MBRP (mindfulness-based relapse prevention) group or a health education (HE) control group. Measurements included urinalysis, negative affect/well-being and substance use/addiction severity. Higher levels of well-being and lower levels of addiction

severity in the MBRP than in the HE group were reported. Similar to the outcomes in this study, mindfulness improved well-being and reduced methamphetamine and GHB use.

This study is not without limitations. Recruitment was challenging, suggesting that targeting certain groups might require re-evaluating how technology is being used. Since the intervention was digitally delivered and reliance on technology is increasing in healthcare, it is essential to identify novel ways of targeting specific populations to ensure inclusivity. A qualitative research study examining this would be instrumental in guiding how technology can encourage marginalised groups to participate in research. The current sample size was sufficient for a pilot study; however, findings cannot be generalised to the broader MSM population engaged in chemsex. Participants in this study appeared to enjoy MBCI, reporting that they liked how it (the intervention) addressed problems beyond drugs and supported them to 'love who they are'. However, participants felt that the duration of the intervention needed to be longer, with additional support being provided at follow-up. Indeed, brief interventions have demonstrated efficacy in supporting well-being. However, brief healthcare interventions delivered digitally are less effective for complex psychopathologies (e.g., Banbury et al., 2023).

Further research needs to develop a standardised questionnaire for chemsex. The assessment tool used in this study was created for this study's purpose, and whilst Cronbach's alpha was satisfactory, the small sample size highlighted potential reliability issues. Furthermore, the sample needed to be greater to establish the scale's validity. Outcomes with Group 2 initially appeared markedly higher than with Group 1; it is difficult to establish whether this was an anticipatory effect commonly associated with waitlist-controlled studies. Furthermore, both groups might have experienced a placebo effect as the intervention progressed. Whilst speculative, the level of participant intoxication (e.g., methamphetamine) might have overinflated feelings of euphoria, which resulted in positively biased well-being outcomes (e.g., Tomkins et al., 2019). Urinalysis was not part of this study. Nonetheless, in terms of outcomes, Groups 1 and 2 stabilised throughout the delivery of the MBCI.

In conclusion, the design of this online MBCI was based on a behavioural taxonomy mapped to selected BCTs to support the reliability of its delivery. This intervention looks promising in assisting in the reduction in chemsex. Participants began to explore their sexual needs and desires outside of chem use. In fact, an interaction effect was reported between chemsex, mindfulness, sexual self-efficacy and well-being. Overall feedback for this intervention was highly positive; however, participants reported needing additional support, for which the delivery of the MBCI would require a longer duration. Research examining a suitable duration of digital healthcare delivery for complex psychopathologies is warranted. This research should be repeated on a larger scale to better understand how mindfulness may support standard drug programme interventions. Additionally, an alternate qualitative approach, such as a thematic analysis or interpretative phenomenological approach, might elicit a richer source of MBCI experiences, providing further insight into chemsex use and behaviour.

We also need to further understand how to use technology efficiently for recruitment and include marginalised groups to ensure that clinical trials represent diverse groups. We hope that this initial study prompts further research in supporting those engaged in chemsex.

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CONFLICT OF INTEREST STATEMENT

There is no conflict of interest.

REFERENCES

- Assarzadeh, R., Khalesi, Z. B., & Jafarzadeh-Kenarsari, F. (2019). Sexual self-efficacy and associated factors: A review. *Shiraz E-medical Journal*, 20(11), article 11. <https://doi.org/10.5812/semj.87537>
- Banbury, S., Moneta, G., & Chandler, C. (2023). An exploratory study examining the relationship between sexual self-efficacy and premature ejaculation mediated by depression, anxiety and sexual fantasy among a British cohort. *Sexual and Relationship Therapy*, 38(4), 796–812. <https://doi.org/10.1080/14681994.2021.1932796>
- Banbury, S., Moneta, G. B., Chandler, C., & Hutchison, P. (2022). The relationship between erectile dysfunction, sexual self-efficacy and the dark triad. *International Journal of Scientific Research in Science and Technology*, 9(6), Article 6.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W.H. Freeman.
- Blomquist, P. B., Mohammed, H., Mikhail, A., Weatherburn, P., Reid, D., Wayal, S., Hughes, G., & Mercer, C. H. (2020). Characteristics and sexual health service use of MSM engaging in chemsex: Results from a large online survey in England. *Sexually Transmitted Infections*, 96(8), 590–595. <https://doi.org/10.1136/sextrans-2019-054345>
- Bossio, J. A., Basson, R., Driscoll, M., Correia, S., & Brotto, L. A. (2018). Mindfulness-based group therapy for men with situational erectile dysfunction: A mixed-methods feasibility analysis and pilot study. *The Journal of Sexual Medicine*, 15(10), 1478–1490. <https://doi.org/10.1016/j.jsxm.2018.08.013>
- Bowen, S., & Enkema, M. C. (2014). Relationship between dispositional mindfulness and substance use: Findings from a clinical sample. *Addictive Behaviors*, 39(3), 532–537. <https://doi.org/10.1016/j.addbeh.2013.10.026>
- Bracchi, M., Stuart, D., Castles, R., Khoo, S., Back, D., & Boffito, M. (2015). Increasing use of 'party drugs' in people living with HIV on antiretrovirals: A concern for patient safety. *AIDS (London, England)*, 29(13), 1585–1592. <https://doi.org/10.1097/qad.0000000000000786>
- British Psychological Society. (2017). *Ethics guidelines for internet-mediated research*. <https://www.bps.org.uk/guideline/ethics-guidelines-internet-mediated-research>
- Cadogan, C. A., Ryan, C., Francis, J. J., Gormley, G. J., Passmore, P., Kerse, N., & Hughes, C. M. (2016). Development of an intervention to improve appropriate polypharmacy in older people in primary care using a theory-based method. *BMC Health Services Research*, 16(1), 661. <https://doi.org/10.1186/s12913-016-1907-3>
- Cane, J., O'Connor, D., & Michie, S. (2012). Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implementation Science*, 7(1), 37. <https://doi.org/10.1186/1748-5908-7-37>
- Carrico, A. W., Gómez, W., Jain, J., Shoptaw, S., Discepola, M. V., Olem, D., Lagana-Jackson, J., Andrews, R., Neilands, T. B., Dilworth, S. E., Evans, J. L., Woods, W. J., & Moskowitz, J. T. (2018). Randomized controlled trial of a positive affect intervention for methamphetamine users. *Drug and Alcohol Dependence*, 192, 8–15. <https://doi.org/10.1016/j.drugalcdep.2018.07.029>
- Cassim, N. (2019). Exploring a possible relationship between chemsex and internalised homophobia among gay men in South Africa. <https://uir.unisa.ac.za/handle/10500/27612>
- Dakwar, E., Nunes, E. V., Hart, C. L., Foltin, R. W., Mathew, S. J., Carpenter, K. M., Choi, C. J., Basaraba, C. N., Pavlicova, M., & Levin, F. R. (2019). A single ketamine infusion combined with mindfulness-based behavioral modification to treat cocaine dependence: A randomized clinical trial. *American Journal of Psychiatry*, 176(11), 923–930. <https://doi.org/10.1176/appi.ajp.2019.18101123>
- Data Protection Act. (2018). *Data Protection Act 2018*. Data Protection Act 2018; Statute Law Database. <https://www.legislation.gov.uk/ukpga/2018/12/section/1>
- Ekman, I., Swedberg, K., Taft, C., Lindseth, A., Norberg, A., Brink, E., Carlsson, J., Dahlin-Ivanoff, S., Johansson, I.-L., Kjellgren, K., Lidén, E., Öhlén, J., Olsson, L.-E., Rosén, H., Rydmark, M., & Sunnerhagen, K. S. (2011). Person-centered care—Ready for prime time. *European Journal of Cardiovascular Nursing*, 10(4), 248–251. <https://doi.org/10.1016/j.ejcnurse.2011.06.008>
- Feldman, G., Hayes, A., Kumar, S., Greeson, J., & Laurenceau, J.-P. (2007). Mindfulness and emotion regulation: The development and initial validation of the cognitive and affective mindfulness scale-revised (CAMS-R). *Journal of Psychopathology and Behavioral Assessment*, 29(3), 177–190. <https://doi.org/10.1007/s10862-006-9035-8>
- General Data Protection Regulations. (2018). <https://gdpr-info.eu/>
- Giorgetti, R., Tagliabracchi, A., Schifano, F., Zaami, S., Marinelli, E., & Busardò, F. P. (2017). When "Chems" meet sex: A rising phenomenon called "ChemSex". *Current Neuropharmacology*, 15(5), 762–770. <https://doi.org/10.2174/1570159X15666161117151148>
- Glasner-Edwards, S., Mooney, L. J., Ang, A., Garneau, H. C., Hartwell, E., Brecht, M.-L., & Rawson, R. A. (2017). Mindfulness based relapse prevention for stimulant dependent adults: A pilot randomized clinical trial. *Mindfulness*, 8(1), 126–135. <https://doi.org/10.1007/s12671-016-0586-9>
- González-Baeza, A., Barrio-Fernández, P., Curto-Ramos, J., Ibarra, L., Dolengevich-Segal, H., Cano-Smith, J., Rúa-Cebrián, G., García-Carrillo de Albornoz, A., & Kessel, D. (2023). Understanding attachment, emotional regulation, and childhood adversity and their link to Chemsex. *Substance Use & Misuse*, 58(1), 94–102. <https://doi.org/10.1080/10826084.2022.2148482>
- Hecht, C. A., Priniski, S. J., & Harackiewicz, J. M. (2019). Understanding long-term effects of motivation interventions in a changing world. *Motivation in education at a time of global change* (Vol. 20, pp. 81–98). Emerald Publishing Limited. <https://doi.org/10.1108/S0749-742320190000020005>
- Hoff, B., Freeman, D., & Wang, D. (2020). *Mindfulness-based Chemsex recovery [Annual Report]*. Spectra.
- Hsu, H.-Y., Yu, H.-Y., Lou, J.-H., & Eng, C.-J. (2015). Relationships among sexual self-concept and sexual risk cognition toward sexual self-efficacy in adolescents: Cause-and-effect model testing. *Japan Journal of Nursing Science*, 12(2), 124–134. <https://doi.org/10.1111/jjns.12056>
- Hucker, A., & McCabe, M. P. (2015). Incorporating mindfulness and chat groups into an online cognitive behavioral therapy for mixed female sexual problems. *The Journal of Sex Research*, 52(6), 627–639. <https://doi.org/10.1080/00224499.2014.888388>
- Jaspal, R. (2022). Chemsex, identity and sexual health among gay and bisexual men. *International Journal of Environmental Research and Public Health*, 19(19), 12124. <https://doi.org/10.3390/ijerph191912124>
- John Snow International Research and Training Institute, Inc. (2000). *Health promotion in our communities: Multi-site baseline assessment adult form*. JSI Org.

- Klein, H. (2014). Condom use self-efficacy and HIV risk practices among men who use the internet to find male partners for unprotected sex. *American Journal of Men's Health*, 8(3), 190–204. <https://doi.org/10.1177/1557988313492172>
- Kurtz, S. P. (2005). Post-circuit blues: Motivations and consequences of crystal meth use among gay men in Miami. *AIDS and Behavior*, 9(1), 63–72. <https://doi.org/10.1007/s10461-005-1682-3>
- Malonzo, E. M., & Felix, J. C. (2013). Self-esteem, sexual self efficacy and sexual risk. Cognitions of men who have sex with men (MSM) in Davao City.
- Maxwell, S., Shahmanesh, M., & Gafos, M. (2019). Chemsex behaviours among men who have sex with men: A systematic review of the literature. *The International Journal on Drug Policy*, 63, 74–89. <https://doi.org/10.1016/j.drugpo.2018.11.014>
- Michie, S., & Abraham, C. (2004). Interventions to change health behaviours: Evidence-based or evidence-inspired? *Psychology & Health*, 19(1), 29–49. <https://doi.org/10.1080/0887044031000141199>
- Michie, S., Atkins, L., & West, R. (2014). *The behaviour change wheel: A guide to designing interventions*. Silverback Publishing.
- Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity*, 2(3), 223–250. <https://doi.org/10.1080/15298860309027>
- Proeve, M., Anton, R., & Kenny, M. (2018). Effects of mindfulness-based cognitive therapy on shame, self-compassion and psychological distress in anxious and depressed patients: A pilot study. *Psychology and Psychotherapy: Theory, Research and Practice*, 91(4), 434–449. <https://doi.org/10.1111/papt.12170>
- Richardson, D., Pakianathan, M., Ewens, M., Mitchell, H., Mohammed, H., Wiseman, E., Tweed, M., Nichols, K., Rawdah, W., Cooper, R., Macrowan, R., Irish, M., Evans, A., & Godbole, G. (2023). British Association of Sexual Health and HIV (BASHH) United Kingdom national guideline for the management of sexually transmitted enteric infections 2023. *International Journal of STD & AIDS*, 34(9), 588–602. <https://doi.org/10.1177/09564624231168217>
- Rostovsky, S. S., Dekhtyar, O., Cupp, P. K., & Anderman, E. M. (2008). Sexual self-concept and sexual self-efficacy in adolescents: A possible clue to promoting sexual health? *Journal of Sex Research*, 45(3), 277–286. <https://doi.org/10.1080/00224490802204480>
- Sedghimornani, N., Rimes, K. A., & Verplanken, B. (2019). Exploring the relationships between mindfulness, self-compassion, and shame. *SAGE Open*, 9(3), 2158244019866294. <https://doi.org/10.1177/2158244019866294>
- Sewell, J., Miltz, A., Lampe, F. C., Cambiano, V., Speakman, A., Phillips, A. N., Stuart, D., Gilson, R., Asboe, D., Nwokolo, N., Clarke, A., Collins, S., Hart, G., Elford, J., & Rodger, A. J. (2017). Poly drug use, chemsex drug use, and associations with sexual risk behaviour in HIV-negative men who have sex with men attending sexual health clinics. *International Journal of Drug Policy*, 43, 33–43. <https://doi.org/10.1016/j.drugpo.2017.01.001>
- Shorey, R. C., Elmquist, J., Gawrysiak, M. J., Anderson, S., & Stuart, G. L. (2016). The relationship between mindfulness and compulsive sexual behavior in a sample of men in treatment for substance use disorders. *Mindfulness*, 7(4), 866–873. <https://doi.org/10.1007/s12671-016-0525-9>
- Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): Development and UK validation. *Health and Quality of Life Outcomes*, 5(1), 63. <https://doi.org/10.1186/1477-7525-5-63>
- Tomkins, A., George, R., & Kliner, M. (2019). Sexualised drug taking among men who have sex with men: A systematic review. *Perspectives in Public Health*, 139(1), 23–33. <https://doi.org/10.1177/1757913918778872>
- Vaziri, S., & Lotfi, F. (2013). Study of factor structure, reliability and validity of the sexual self-efficacy questionnaire. *Thoughts and Behavior in Clinical Psychology*, 8(29), 47–56.
- Woods, H., & Proeve, M. (2014). Relationships of mindfulness, self-compassion, and meditation experience with shame-proneness. *Journal of Cognitive Psychotherapy*, 28(1), 20–33. <https://doi.org/10.1891/0889-8391.28.1.20>

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