Clinical outcomes for sexual and gender minority adolescents in a dialectical behaviour therapy programme

J. Camp[1,2] , G. Durante[3], A. Cooper[3], P. Smith[2] and K. A. Rimes[2]

[1]National & Specialist CAMHS, DBT Service, South London & Maudsley NHS Foundation Trust, Micheal Rutter Centre, Maudsley Hospital, London, UK, [2]Department of Psychology, Institute of Psychiatry, Psychology & Neuroscience, King's College London, De Crespigny Park, London, UK and [3]Department of Psychology, Goldsmiths University of London, Lewisham Way, London, UK
Corresponding author: Jake Camp; Emails: Jake.camp@slam.nhs.uk; Jake.camp@kcl.ac.uk

Abstract

Background: Sexuality and gender minoritised (SGM) adolescents are at increased risk of self-injury and suicide, and experience barriers to accessing mental health support. Dialectical behaviour therapy (DBT) is an effective treatment for self-injury and emotion dysregulation in adolescent populations, but few studies have published outcomes of DBT for SGM young people.
Aims: This study aimed to investigate treatment outcomes and completion for SGM adolescents and their cisgender and heterosexual peers, in the National & Specialist CAMHS, DBT service (UK).
Method: Treatment completion, and opting out before and during treatment were examined for sexual and gender identity groups, as well as changes by the end of treatment in emotion dysregulation, self-injury, in-patient bed-days, emergency department attendances, and borderline personality disorder, depression and anxiety symptoms.
Results: SGM adolescents were over-represented in this service, even after considering their increased risk for self-injury. No statistically significant differences were found for treatment completion between the sexual orientation and gender identity groups, although there were patterns indicating possible lower treatment uptake and completion that warrant further investigation. Clinical outcomes for treatment-completers showed improvement by the end of DBT for each group, with few exceptions.
Discussion: These results are from relatively small subsamples, and it was not possible to separate by sex assigned at birth. Findings should be treated tentatively and as early indications of effect sizes to inform future studies. This study suggests that DBT could be a useful treatment for SGM adolescents in a highly specialist treatment setting.

Keywords: Adolescents; DBT; Emotion dysregulation; LGBTQ+; Self-injury

Introduction

Suicidal and non-suicidal self-injury (NSSI) in adolescent populations is a growing issue and is significantly associated with death by suicide (Bould *et al.*, 2019; Cheung *et al.*, 2020; Geulayov *et al.*, 2018; Hawton *et al.*, 2020; Heron, 2018; McManus *et al.*, 2019). Sexuality and gender minoritised (SGM) adolescents are three times more likely to engage in self-injurious behaviours and 1.5 to 7 times more likely to experience suicidal thoughts and attempt suicide compared with cisgender and heterosexual young people (Butler *et al.*, 2019; Haas *et al.*, 2011; Kapatais *et al.*, 2022; King *et al.*, 2008;

Liu *et al.*, 2019; Raifman *et al.*, 2020). Sexual minorities are broadly defined as those who experience sexual and/or romantic attractions congruent with, or identify as, lesbian, gay, bisexual, pansexual, asexual, queer, and other minoritised orientations. Gender minorities are defined as those whose gender identity is different from their sex assigned at birth (transgender), is outside of the traditional gender binary (non-binary), and other gender-diverse groups.

The higher prevalence of suicidal and NSSI in SGM adolescents is congruent with a higher prevalence of associated mental health difficulties, including emerging symptoms of borderline personality disorder (BPD), depression, and anxiety disorders (Liu *et al.*, 2019; Rodriguez-Seijas *et al.*, 2021; Ross *et al.*, 2018; Russell and Fish, 2016). Mental health disparities in SGM populations are thought to be explained by exposure to prejudice, discrimination, and victimisation associated with their minoritised identity in societies that privilege cisgender (i.e. gender is broadly the same as sex assigned at birth) and heterosexual norms, and that invalidate SGM culture (i.e. cis-heteronormativity and cis-heterosexism; Batchmann and Gooch, 2017; Hendricks and Testa, 2012; Hubbard, 2021; Meyer, 2003). Minority stress theory suggests that the additional minority-related stressors, alongside everyday stressors, cause an accumulation of stress such that it overwhelms typical resilience and coping mechanisms for individuals (Hendricks and Testa, 2012; Meyer, 2003). Building on minority stress theory, the psychological mediation framework suggests that the mechanisms by which these stressors mediate mental health outcomes include increased likelihood of psychological processes typically implicated in mental health difficulties, such as emotion dysregulation (Hatzenbuehler, 2009), which are also shown to be elevated in SGM populations (Kapatais *et al.*, 2022).

Despite the increased mental health needs of SGM youth, these groups are shown to experience significant barriers to accessing health care (Dunbar *et al.*, 2017; McDermott, 2016; McDermott *et al.*, 2018; Williams and Chapman, 2011). Moreover, certain SGM groups report poor experiences in services (Beard *et al.*, 2017; Hubbard, 2021; Rimes *et al.*, 2019; Williams and Chapman, 2011). Reviews of the literature suggest that SGM youth may experience poor quality of care due to clinician-held stigma and lack of awareness of the unique needs of this population, as well as from a fear of being judged or accidently 'outed' to others (Hafeez *et al.*, 2017; Pattinson *et al.*, 2021). This may also be impacted by the lack of SGM-specific mental health service provision and the over-reliance on the charitable sector to provide this support, which may be more vulnerable to volatility in funding and resource (Pattinson *et al.*, 2021). Very few effectiveness and efficacy studies collect data or stratify samples by sexual orientation and gender identity, and routine clinical services rarely report such comparative outcomes, therefore little is currently known about the effectiveness of interventions for SGM groups (Harned *et al.*, 2022; Pachankis, 2018).

Dialectical behaviour therapy (DBT) is a third-wave cognitive behavioural therapy developed for individuals experiencing high levels of self-injury, suicidal ideation, and emotion dysregulation (Linehan, 1993). DBT is an effective intervention for suicidal and NSSI behaviours in young people (Johnstone *et al.*, 2022; Kothgassner *et al.*, 2021) and is recommended by the National Institute for Health and Care Excellence (2022) in the UK, and National Institute of Mental Health (2022) in the USA, for the treatment of self-injury and emotion dysregulation in adolescent populations.

The DBT model is thought to have useful applications for distress associated with SGM experiences (Camp, 2023; Camp *et al.*, 2023b; Cohen *et al.*, 2021; Penta *et al.*, 2022; Skerven *et al.*, 2019; Sloan *et al.*, 2017). One reason for this is that DBT is principle-driven, which allows flexibility to integrate SGM-specific issues into the treatment as needed. In addition, Linehan's (1993) transactional biosocial model, which underpins the understanding of how difficulties develop, is thought to be complementary to minority stress theories. The 'biological' aspect of this model suggests that a person may have a societally minoritised (e.g. gender diversity from a young age; Grove and Crowell, 2019) or temperamental (e.g. emotion sensitivity) difference, which makes it more likely that developmentally important others and society will invalidate their

experiences. An invalidating developmental environment (the 'social' part of the model) subtly and explicitly teaches the person that their experiences related to their differences and internal world are invalid and/or that complex problems are easily solved (Grove and Crowell, 2019; Linehan, 1993). Transactions between potential vulnerabilities and invalidating environments amplify and change dynamically over time, resulting in an individual not learning how to understand and label their emotions, thus learning to mistrust their experiences; internalising invalidating messages (self-invalidation); and under-estimating the complexity of solving life problems. This often leads to a lack of problem-solving skills, difficulties tolerating distress, and impairment in setting reasonable goals and expectation. This is thought to cause a skills deficit or breakdown in the context of managing complex life stressors (such as those experienced by SGM individuals), contributing to the development of emotion dysregulation (Grove and Crowell, 2019; Linehan, 1993). Difficulties regulating emotions likely leads to dysregulation in other aspects of life (e.g. identity confusion, relationship difficulties, and impulsive behaviours; Linehan, 1993). Congruent with the minority stress and psychological mediation models, the biosocial model may be a useful way to explain how SGM's experiences and the internalisation of invalidation may result in the development of emotion dysregulation, which may contribute to psychological distress and 'behavioural dysregulation', such as self-injury (Cohen *et al.*, 2021; Sloan *et al.*, 2017).

Another aspect of DBT thought to be applicable to SGM groups is the focus on the transdiagnostic construct of emotion dysregulation as the core treatment target, which is considered an important mediating factor between minority stress and mental health outcomes in the psychological mediation framework (Hatzenbuehler, 2009). Finally, the use of validation, a dialectical world view, and teaching skills that are generalisable to varied life problems, makes DBT a potentially ideal candidate for supporting SGM young people experiencing psychological distress and discrimination (Cohen *et al.*, 2021; Penta *et al.*, 2022; Skerven *et al.*, 2019; Sloan *et al.*, 2017). This should not be seen to imply that it is incumbent on minoritised individuals to take responsibility for managing societal oppression. However, while such oppression exists, it is considered that DBT may offer an effective way to support SGM youth to understand how difficulties develop in relation to their minoritised identity and support them to cope and thrive, given that societal change is slow. It should also be balanced with empowering minoritised individuals to advocate for their needs and societal change.

Some authors have considered how to adapt the DBT model for SGM-specific needs in adult samples. Cohen *et al.* (2021) and Skerven *et al.* (2021) have both developed an adaptation to DBT skills training to include skills specific to SGM minority stressors and tailored SGM-specific teaching examples. These adaptations have been piloted with a small number of SGM adult veterans in the USA with promising outcomes. In a similar vein, a number of authors also suggest ways that the DBT model and principles, more generally, can be applied to SGM populations (Camp, 2023; Camp *et al.*, 2023b; Pantalone *et al.*, 2019; Skerven *et al.*, 2019; Sloan *et al.*, 2017; Tilley *et al.*, 2022). However, these recommendations have generally not been empirically tested, nor has consideration been given to specific application of DBT for SGM adolescent populations. One study has investigated outcomes of a DBT-informed intervention (interpersonal effectiveness skills), embedded within a wider cognitive behavioural intervention, in an adult partial-hospital setting where the sample was stratified by those who identified as heterosexual and sexual minorities (Beard *et al.*, 2017). The study found no significant differences between groups in anxiety and depression symptoms, and substance use at the end of the intervention. However, they found that the bisexual group, compared with the heterosexual and gay/lesbian group, had higher self-injury and suicidal thoughts, and worse perceptions of care at the end of treatment. This finding is similar to that observed in outcome research for adult CBT services in the UK, where bisexual (but not gay) men had worse outcomes compared with heterosexual men; for women, both lesbian and bisexual patients had poorer outcomes than heterosexual women (Rimes *et al.*, 2019b).

Only one known study has investigated equality of outcomes between sexuality minoritised and heterosexual adolescents within a non-adapted 18-week DBT programme for adolescents (Poon *et al*., 2022). No significant differences were found in changes in depression, anxiety, BPD symptoms, emotion dysregulation, and adaptive and maladaptive coping between the sexuality minoritised and heterosexual groups. However, this study employed a small sample, did not include gender minorities, and grouped sexual minorities together despite potential differences in outcomes within minority groupings (Beard *et al*., 2017; Rimes *et al*., 2019b). No known adult or adolescent study has investigated outcomes in non-adapted DBT for gender minorities (for a review, see Harned *et al*., 2022).

The current study, therefore, investigated clinical outcomes for SGM adolescents in a comprehensive DBT programme implemented in the UK National Health Service (NHS). This exploratory study presents data for specific sexual minority groups, rather than grouping all sexual minorities together, and for gender minority groups. Retrospective data were used from routine clinical practice. The aim is to provide practice-based outcome data for SGM adolescents, with the hope of stimulating and informing future studies. The exploratory research questions included:

(1) What are the rates of treatment completion and non-completion for the different sexuality and gender groups within this DBT service ?
(2) Are there changes in clinical outcomes by the end of DBT for the different sexuality and gender groups within this service?
(3) Does sexual orientation and gender identity group membership have an effect on clinical outcomes within this DBT service?

Method

Design

This is a mixed independent and repeated measures design, with a sample stratified by sexual and gender identity (independent variables). The initial research question investigated the proportions who completed treatment (dependent variable) between sexual and gender identity groups in this service context (independent measures design). The second and third questions explored changes in clinical outcomes (dependent variables; suicidal and NSSI behaviours, in-patient bed-days, Accident and Emergency department (A&E) attendances, emotion dysregulation, reasons for living, and BPD, depression and anxiety disorder symptoms) from a baseline time point compared with an end- or during-treatment time point (time points varied for some variables) for the sexual and gender identity groups within this service context (repeated measures design).

Participants

The study inclusion criteria included being assessed as suitable for DBT pre-treatment for question 1 ($n = 167$), and starting and completing DBT treatment for question 2 ($n = 112$), over five years of service delivery. The inclusion criteria for the service included: (1) that participants were between 13 years and 17 years and 4 months (at referral; upper age limit varied depending on service capacity), (2) had engaged in at least one episode of self-injury in the past 6 months, and (3) had presented with symptoms in at least a further four domains of BPD as assessed according to the BPD subscale within the Structured Clinical Interview for DSM-V (SCID; First *et al*., 1997). While the young people needed only one episode of self-injury in the past 6 months to access the service, because this is a Tier-4 setting most young people had high levels of suicidal behaviours and NSSI, which had typically not responded to lower-tiered interventions. The exclusion criteria for the service included a primary diagnosis of schizophrenia/psychosis, substance-use

dependency, or another psychiatric disorder(s) that required more urgent assessment or treatment, or where the individual had opted out of the programme in the past 3 months.

Treatment context

The National & Specialist CAMHS, DBT Service is a highly-specialist Tier-4 community DBT programme for adolescents (see Camp *et al.*, 2023a and Smith *et al.*, 2023, for further details on the programme). Tier-4 child and adolescent mental health services (CAMHS) in the UK are intensive and highly specialist interventions, which include specialist intensive out-patient treatment programmes, in-patient services, day programmes, and home intervention (NHS England, 2018). Tier-4 services are often only utilised when attempts to meet needs in lower-tiered services are unsuccessful. If young people met the service inclusion criteria, they were offered pre-treatment, consisting of four to six sessions to learn about DBT, develop goals, and decide if this was the right time and treatment. If young people signed up to the DBT programme, they were offered 8–12 months of treatment. Treatment included the four core modes of DBT (Camp *et al.*, 2023a), informed the DBT model for adults (Linehan, 1993) and adolescents (Rathus *et al.*, 2018). Parents/carers were offered individual and family sessions as needed, alongside telephone coaching/support and a separate 6-month-long parent/carer skills group informed by the DBT model for families (Fruzzetti, 2019).

All therapists attended weekly DBT consultation meetings (Linehan, 1993) and completed, as a minimum, foundation training in DBT via a licensed provider. Model adherence was supported by regular supervision, weekly team consultation meetings, and quarterly team consultation with an expert in DBT. As a principle-based treatment, some reasonable adaptations were made to treatment components to integrate identity- and stigma-related issues into participants' treatment hierarchies and goals where relevant. Over the five years of service delivery covered within this evaluation, therapists experienced increasing training and awareness of SGM-associated difficulties. This included at least an annual teaching session on working with SGM young people and the contemporary published research in this area (e.g. Skerven *et al.*, 2019). Exposure to these topics and an awareness of the high prevalence of SGM young people in the service resulted in increased use of sexuality- and gender-diverse examples in teaching, the disclosure of pronouns by therapists in skills groups, and the inclusion of socio-political invalidating environments within the teaching of the biosocial model. Additionally, therapists supported their clients with SGM-associated difficulties where they came up as links in chain analyses and where they were included in treatment goals. However, no fundamental adaptations were made to the skills modules or programme delivery with regard to SGM-related difficulties.

Procedures

All data were collected via routine service delivery, with informed consent sought for treatment and questionnaire completion at intake from young people and their parents/carers. Demographic information was collected via a self-report questionnaire at assessment. Each question (with the exception of age, which offered a free text response option) was multiple choice, with an option for 'prefer not to say' and 'prefer to self-describe'. The question inquiring about sexual orientation was added 6 months into this service delivery period after clinical observations of the high prevalence of sexuality diverse adolescents accessing the service prompted the need for improved monitoring. Thus, there is higher missing data for this variable. Routine outcome measures (i.e. emotion dysregulation, BPD, depression, and anxiety symptoms, and reasons for living) were collected via Qualtrics^{TM} (Monash University, 2022) at assessment and at the end of treatment. Counts of NSSI and suicidal behaviours were collected for the first 8 weeks of DBT (including pre-treatment) and the final 8 weeks of DBT using self-reports on diary cards corroborated with reports from parents/carers and allocated professionals. Counts of A&E attendances and occupied in-patient

bed-days from the matched period before and during DBT were collected from NHS records and corroborated with reports from the young people, parents/carers, and professionals in their system.

Measures

The McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD)

The MSI-BPD is a widely used screening instrument with good sensitivity and specificity for predicting the presence of BPD in adolescent populations (Zanarini *et al.*, 2003). The 10 items are rated as 'no' (0) or 'yes' (1). Higher scores indicate higher presence of BPD symptoms and a score of 7 or above is the clinical cut-off (Zanarini *et al.*, 2003). This measure's validity and reliability have been demonstrated among adolescents (Noblin *et al.*, 2013; Zanarini *et al.*, 2003).

Difficulties in Emotion Regulation Scale (DERS)

The DERS (Gratz and Roemer, 2004) is a self-report measure assessing multiple aspects of emotion dysregulation. The 36 items are measured on a 5-point Likert scale from 'almost never' (1) to 'almost always' (5). Higher scores indicate more difficulty with emotion regulation and scores above 129 are suggested as a clinical cut-off (Camp *et al.*, 2023a). The DERS has good psychometric properties in adolescent populations (Gratz and Roemer, 2004; Neumann *et al.*, 2010; Weinberg and Klonsky, 2009).

The Reasons for Living Inventory, Adolescent Version (RFL)

The RFL (Osman *et al.*, 1998) is a 32-item self-report measure of multiple protective factors against suicide. Items are rated on a scale from 'not at all important' (1) to 'extremely important' (6) and all items are averaged. Higher average scores indicate more protective factors for preventing suicidal behaviours. The RFL has good psychometric properties (Osman *et al.*, 1998).

The Moods and Feelings Questionnaire for Adolescents (MFQ)

The MFQ (Angold and Costello, 1987) is a self-report screening tool for depression in adolescents. The 33 items assess how young people have been feeling or acting recently, rated from 'not true' (0) to 'true' (2). Higher scores indicate higher severity of depression symptoms and scores above 28 are suggested as a clinical cut-off (Daviss *et al.*, 2006). The MFQ has established psychometric properties (Angold and Costello, 1987; Daviss *et al.*, 2006).

Screen for Child Anxiety-related Emotional Disorders for Adolescents (SCARED)

The SCARED (Birmaher *et al.*, 1999) is a self-report measure assessing anxiety disorders in children and young people. The 41 items use a 3-point Likert scale from 'not true or hardly ever true' (0) to 'very true or often true' (2). A total score of 25 or above is suggested as the clinical cut-off (Birmaher *et al.*, 1999). The SCARED has established psychometric properties (Birmaher *et al.*, 1997; Birmaher *et al.*, 1999).

Occupied in-patient bed-days

This is a count of days, including an overnight stay, during which a young person is admitted as an in-patient due to concerns around mental health and risk.

A&E attendances

This is the count of attendances to the A&E department due to mental health crises, including, but not limited to, NSSI and suicidal behaviours.

Self-injury

This is the count frequency of NSSI and suicidal behaviours/incidents. Self-injury incidents are counted irrespective of motivation due to the difficulties differentiating based on motivation and intention (Bernegger *et al.*, 2018; King, Cabarkapa, & Leow, 2019). Self-injury is defined as any intentional self-injury, such as cutting or burning skin, ingestion of harmful objects, or other methods to cause trauma to body tissue, irrespective of suicidal motivation (Bernegger *et al.*, 2018; King *et al.*, 2019).

Data analysis

Data were analysed in SPSS version 28 (IBM Corporation; https://www.ibm.com/support/pages/downloading-ibm-spss-statistics-28). Missing data across clinical outcomes was 5.15% and missing at random (Little's MCAR test: $\chi^2 = 328.49$, d.f. = 327, $p = .47$). Missing outcome data were computed using expectation maximisation (Enders, 2001; Scheffer, 2002). In the overall sample there was no missing data for gender identity. Three per cent in the overall sample endorsed the 'prefer not to say' option for sexual orientation, which was treated as missing data. In the overall sample, after transforming 'prefer not to say' into missing data, 13% had missing sexual orientation data (mostly due to this question being added to the questionnaire at a later date). Sexual orientations were grouped as bisexual/pansexual, gay/lesbian, and heterosexual to retain group size for statistical power while balancing not over generalising findings between sexuality minoritised groups. The gender identity groups were split into: (1) those whose gender identity was different from their sex assigned at birth (transgender) and (2) those whose gender identity and sex assigned at birth were the same (cisgender). Further disaggregated descriptive statistics are available in the Supplementary material.

Appropriate assumptions for each statistic test were checked. For question 1, Fisher's exact tests were used to explore proportions of treatment completion, as there were less than five counts within at least one group. For question 2, paired samples *t*-tests or Wilcoxon signed rank test (WSRT; if *t*-test assumptions were not met) were used to investigate changes in outcomes from Time 1 to Time 2 for each group. Cohen's (1988) *d* effect sizes for *t*-tests and Rosenthal's (1994) *r* effect sizes for WSRTs were reported. For question 3, ANCOVA was used as a preliminary analysis investigating whether sexual orientation or gender identity group membership had an effect on end of treatment (or similar) outcomes, while controlling for baseline scores on the same measure. Partial eta-squared effect sizes were reported. Where the appropriate assumptions for the ANCOVA were not met, the Quade non-parametric ANCOVA (Rae, 1985) was used instead.

Results

Descriptive statistics

Sociodemographic data for the sample are presented in Tables 1 and 2. In the overall sample, 65% identified as sexual minorities and 17% as gender minorities. These were not mutually exclusive and thus many sexual minorities identified as gender minorities and vice versa.

Question 1: Treatment completion and non-completion

For the disaggregated sexual orientation groups: 33 (62%) of the bisexual group completed DBT, 12 (23%) opted out during DBT before completion, and eight (15%) opted out in pre-treatment

Table 1. Sociodemographic characteristics and treatment length by sexual orientation groups

	Opted out in pre-treatment			Opted out in treatment			Treatment completers		
	Bisexual/ pansexual (n = 10)	Gay/lesbian (n = 6)	Heterosexual (n = 6)	Bisexual/ pansexual (n = 13)	Gay/lesbian (n = 2)	Heterosexual (n = 7)	Bisexual/ pansexual (n = 46)	Gay/lesbian (n = 15)	Heterosexual (n = 36)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Age	16.88 (0.94)	16.68 (1.09)	16.43 (0.76)	16.48 (0.97)	14.22 (0.14)	16.26 (0.79)	16.52 (1.02)	16.24 (1.00)	16.27 (1.00)
Treatment length	—	—	—	4.83 (2.64)	7.00 (1.41)	4.83 (2.64)	10.46 (1.94)	10.73 (1.67)	10.77 (1.96)
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
Sex assigned at birth									
Female	10 (100%)	6 (100%)	6 (100%)	13 (100%)	2 (100%)	7 (100%)	46 (100%)	14 (93%)	35 (97%)
Male	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (7%)	1 (3%)
Gender identity									
Binary transgender	2 (20%)	0 (0|%)	1 (17%)	2 (15%)	0 (0%)	0 (0%)	1 (2%)	1 (7%)	1 (3%)
Non-binary	2 (20%)	0 (0%)	0 (0%)	0 (0%)	2 (100%)	0 (0%)	12 (26%)	3 (20%)	0 (0%)
Cisgender female	6 (60%)	6 (100%)	5 (83%)	11 (85%)	0 (0%)	7 (100%)	33 (72%)	10 (66%)	34 (94%)
Cisgender male	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (7%)	1 (3%)
Sexual orientation									
Bisexual	8 (80%)	0 (0%)	0 (0%)	12 (92%)	0 (0%)	0 (0%)	32 (70%)	0 (0%)	0 (0%)
Pansexual	2 (20%)	0 (0%)	0 (0%)	1 (8%)	0 (0%)	0 (0%)	14 (31%)	0 (0%)	0 (0%)
Gay/lesbian	0 (0%)	6 (100%)	0 (0%)	0 (0%)	2 (100%)	0 (0%)	0 (0%)	15 (100%)	0 (0%)
Heterosexual	0 (0%)	0 (0%)	6 (100%)	0 (0%)	0 (0%)	7 (100%)	0 (0%)	0 (0%)	36 (100%)
Ethnicity									
White British	4 (40%)	2 (33%)	5 (83%)	12 (92%)	2 (100%)	6 (86%)	30 (65%)	10 (67%)	26 (72%)
White other	0 (0%)	2 (33%)	0 (0%)	0 (0%)	0 (0%)	1 (14%)	4 (9%)	2 (13%)	2 (6%)
Black/Black British	2 (20%)	2 (33%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (4%)	1 (7%)	1 (3%)
Asian/Asian British	1 (10%)	0 (0%)	0 (0%)	1 (8%)	0 (0%)	0 (0%)	1 (3%)	0 (0%)	1 (3%)
Mixed Black/White	2 (20%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (9%)	0 (0%)	1 (3%)
Mixed Asian/White	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (6%)	0 (0%)	2 (6%)
Other	1 (10%)	0 (0%)	1 (7%)	0 (0%)	0 (0%)	0 (0%)	2 (4%)	2 (13%)	3 (8%)

n, sample size; M, mean; SD, standard deviation. Due to missing data on sexual orientation, sample size for sexual orientation treatment completers is smaller than for gender identity.

Table 2. Sociodemographic characteristics and treatment length by gender identity groups

	Opted out in pre-treatment		Opted out in treatment		Treatment completers	
	Transgender[a] (n = 5)	Cisgender (n = 24)	Transgender[a] (n = 4)	Cisgender (n = 22)	Transgender[a] (n = 19)	Cisgender (n = 93)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Age	16.38 (1.17)	16.68 (0.82)	14.98 (1.24)	16.24 (1.08)	16.47 (1.01)	16.34 (0.99)
Treatment length	—	—	5.00 (3.61)	4.53 (2.20)	10.89 (2.00)	10.66 (1.87)
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
Sex assigned at birth						
Female	5 (100%)	24 (100%)	4 (100%)	22 (100%)	19 (100%)	89 (96%)
Male	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (4%)
Gender identity						
Binary transgender	3 (60%)	0 (0%)	2 (50%)	0 (0%)	4 (21%)	0 (0%)
Non-binary	2 (7%)	0 (0%)	2 (50%)	0 (0%)	15 (79%)	0 (0%)
Cisgender female	0 (0%)	24 (100%)	0 (0%)	22 (100%)	0 (0%)	89 (96%)
Cisgender male	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (4%)
Sexual orientation						
Bisexual	2 (40%)	6 (35%)	1 (25%)	11 (61%)	8 (44%)	25 (32%)
Pansexual	2 (40%)	0 (0%)	1 (25%)	0 (0%)	5 (28%)	8 (10%)
Gay/lesbian	0 (0%)	6 (35%)	2 (50%)	0 (0%)	4 (22%)	11 (14%)
Heterosexual	1 (20%)	5 (30%)	0 (0%)	7 (39%)	1 (6%)	35 (45%)
Ethnicity						
White British	3 (60%)	9 (41%)	4 (100%)	19 (90%)	16 (85%)	60 (65%)
White other	0 (0%)	5 (23%)	0 (0%)	1 (5%)	1 (5%)	8 (9%)
Black/Black British	0 (0%)	4 (18%)	0 (0%)	0 (0%)	0 (0%)	4 (4%)
Asian/Asian British	1 (20%)	0 (0%)	0 (0%)	1 (5%)	1 (5%)	1 (1%)
Mixed Black/White	1 (20%)	1 (4%)	0 (0%)	0 (0%)	0 (0%)	8 (9%)
Mixed Asian/White	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (6%)
Other	0 (0%)	3 (14%)	0 (0%)	0 (0%)	1 (5%)	6 (6%)

n, sample size; M, mean; SD, standard deviation. [a]Inclusive of binary and non-binary transgender identities. Not all proportions total the same as the sample total due to missing data.

Table 3. Treatment completion and non-completion by sexual orientation and gender identity

	Opted out in pre-treatment	Opted out in treatment	Completed treatment	
	Frequency (%)	Frequency (%)	Frequency (%)	Fisher's exact test
Sexual orientation				
Bisexual/pansexual	10 (15%)	13 (19%)	46 (67%)	5.19 (n.s.)
Gay/lesbian	6 (26%)	2 (9%)	15 (65%)	
Heterosexual	6 (12%)	7 (14%)	36 (74%)	
Gender identity				
Transgender[a]	5 (17%)	4 (14%)	19 (68%)	0.09 (n.s.)
Cisgender	24 (17%)	22 (16%)	93 (67%)	

n.s., not statistically significant at $p = <.05$. [a]Inclusive of binary and non-binary transgender identities.

before signing up to DBT; 13 (81%) of the pansexual group completed DBT, one (6%) opted out during DBT, and two (13%) opted out during pre-treatment; 15 (65%) of the gay/lesbian group completed treatment, two (9%) opted out in treatment, and six (26%) opted out during pre-treatment; and 36 (74%) of the heterosexual group completed DBT, seven (14%) opted out during treatment, and six (12%) opted out during pre-treatment. For the disaggregated gender identity groups: four (44%) of the binary transgender participants completed DBT, two (23%) opted out during treatment before completion, and three (33%) opted out in pre-treatment before signing up to the DBT programme; 15 (79%) of the non-binary participants completed DBT, two (10.50%) opted out in treatment, and two (10.50%) opted out in pre-treatment; and 93 (67%) of the cisgender participants completed treatment, 22 (16%) opted out during DBT, and 24 (17%) opted out during pre-treatment. The Fisher's exact test found no significant differences in the proportion of young people who completed treatment and those who did not across the aggregated sexual orientation and gender identity groups (see Table 3).

Question 2: Changes in clinical outcomes by the end of DBT

The paired samples *t*-tests and WSRT found a significant improvement in the majority of clinical outcomes from the start to the end of DBT for each group, with medium to large effect sizes (see Tables 4 and 5). This was with the exception of the SCARED for heterosexual participants and self-injury for gay/lesbian participants, which were not significantly different by the end of treatment and had small effect sizes.

Question 3: Differences in clinical outcomes by sexual orientation or gender identity

According to the ANCOVA models, after adjusting for baseline scores on the corresponding measures, there was no significant differences between sexual orientation groups at the end of DBT for scores on the MSI-BPD ($F_{2,93} = 0.28$, $p = .76$, partial $\eta^2 = <.01$), the DERS ($F_{2,93} = 0.40$, $p = .67$, partial $\eta^2 = <.01$), the MFQ ($F_{2,93} = 0.19$, $p = .83$, partial $\eta^2 = <.01$), and the SCARED ($F_{2,93} = 0.69$, $p = .51$, partial $\eta^2 = .02$). After adjusting for baselined RFL scores, there was an overall significant difference in end-treatment RFL scores between sexual orientation groups ($F_{2,93} = 3.31$, $p = .04$, partial $\eta^2 = .07$). However, *post-hoc* comparisons, with a Bonferroni correction, found no significant differences in RFL scores between the separate sexual orientation groups. There were emerging (non-significant) lower adjusted scores on the RFL for heterosexual participants compared with bisexual/pansexual (mean difference of –0.52, $p = .10$) and for the gay/lesbian group compared with the bisexual/pansexual group (mean difference of –0.67, $p = .13$). There was no emerging difference between the heterosexual and gay/lesbian group (mean difference of –0.15, $p = 1.00$).

Table 4. Inferential statistics comparing pre- and post-treatment clinical outcomes for sexual orientation groups

Variable	Bisexual/pansexual (n = 46)					Gay/lesbian (n = 15)					Heterosexual (n = 36)				
	Ax M (SD)	End M (SD)	t	d	95% CI	Ax M (SD)	End M (SD)	t	d	95% CI	Ax M (SD)	End M (SD)	t	d	95% CI
MSI-BPD	8.63 (1.42)	5.37 (3.33)	6.62**	0.98	0.62–1.35	8.93 (1.42)	5.60 (3.09)	4.71**	1.22	0.53–1.88	7.75 (2.10)	5.28 (3.49)	4.68**	0.78	0.40–1.15
DERS	138.26 (16.82)	107.76 (33.90)	5.92**	0.87	0.53–1.21	138.40 (22.10)	114.20 (31.07)	3.46**	0.89	0.28–1.49	137.68 (21.41)	113.04 (32.08)	4.26**	0.71	0.34–1.07
RFL	2.72 (0.89)	3.61 (1.08)	−4.56**	−0.67	−0.99–0.35	2.25 (0.72)	2.80 (0.60)	−2.35*	−0.61	−1.15–0.05	2.54 (1.09)	3.04 (1.29)	−2.35*	−0.39	−0.73–0.05
MFQ	45.67 (11.14)	34.77 (18.33)	3.83**	0.56	0.25–0.87	47.73 (8.89)	37.87 (15.29)	2.51*	0.65	0.08–1.20	45.33 (10.88)	36.72 (17.83)	3.49**	0.58	0.23–0.93
SCARED	49.24 (12.87)	42.38 (19.72)	2.84**	0.42	0.12–0.72	52.07 (17.34)	44.93 (19.25)	3.34**	0.86	0.56–1.45	50.18 (14.53)	46.85 (19.29)	1.39	0.23	−0.10–0.56
	Pre-Mdn (R)	Post-Mdn (R)	Z	r		Pre-Mdn (R)	Post-Mdn (R)	Z	r		Pre-Mdn (R)	Post-Mdn (R)	Z	r	
Self-injury	3.00 (0–43)	0.00 (0–71)	−3.86**	−0.57		2.00 (0–33)	0.00 (0–42)	−1.50	−0.39		5.00 (0–56)	1.00 (0–11)	−4.07**	−0.68	
A&E	1.00 (0–20)	0.00 (0–10)	−3.93**	−0.58		2.00 (0–10)	0.00 (0–2)	−2.72**	−0.70		2.00 (0–15)	0.00 (0–5)	−3.22**	−0.54	
In-patient days	2.00 (0–341)	0.00 (0–2)	−4.31**	−0.64		0.00 (0–335)	0.00 (0–5)	−2.37*	−0.61		10.50 (0–180)	0.00 (0–14)	−4.06**	−0.68	

*p = <.05, **p = <.01. n, sample size; Ax, assessment; End, end of DBT; M, mean; SD, standard deviation. Cohen's d small effect = ≥0.20, medium effect = ≥0.50, large effect = ≥0.80 (Cohen, 1988). Rosenthal's r small effect = ≥0.10, medium effect = ≥0.30, large effect = ≥0.50 (Cohen, 1988). t, paired samples t-test; Mdn, median; R, range; Z, Wilcoxon signed rank test Z-statistic; MSI-BPD, MacLean Screening Instrument for BPD, clinical cut-off = ≥7; DERS, Difficulties with Emotion Regulation Scale, clinical cut-off = ≥128; RFL, Reasons for Living Inventory; MFQ, Moods and Feelings Questionnaire, clinical cut-off = ≥29; SCARED, Screen for Child Anxiety-Related Emotional Disorders, clinical cut-off = ≥25; Self-injury is count of suicidal and non-suicidal self-harm in the first 8 weeks (Pre) and last 8 weeks (Post) of DBT. A&E, count of Accident and Emergency department visits in the matched period before DBT (Pre) and during DBT (Post). In-patient days, occupied in-patient bed-days in the matched period before DBT (Pre) and during DBT (Post).

Table 5. Inferential statistics comparing pre- and post-treatment clinical outcomes for gender groups

Variable	Transgender ($n = 19$)					Cisgender ($n = 93$)				
	Ax *M (SD)*	End *M (SD)*	*t*	*d*	95% CI	Ax *M (SD)*	End *M (SD)*	*t*	*d*	95% CI
MSI-BPD	7.79 (2.02)	4.89 (3.21)	**3.73****	**0.86**	0.32–1.38	8.54 (1.56)	5.70 (3.34)	**8.82****	**0.92**	0.67–1.16
DERS	139.16 (22.50)	105.48 (31.26)	**4.32****	**0.99**	0.43–1.53	136.47 (18.59)	110.81 (21.91)	**7.58****	**0.79**	0.55–1.02
RFL	2.55 (0.94)	3.49 (1.12)	**−2.89***	**−0.66**	−1.16–0.16	2.51 (1.01)	3.33 (1.16)	**−6.11****	**−0.63**	−0.86–0.41
MFQ	46.89 (9.65)	32.52 (16.71)	**3.33****	**0.76**	0.24–1.27	46.44 (10.47)	36.32 (17.52)	**5.83****	**0.60**	0.38–0.82
SCARED	52.11 (14.12)	43.47 (18.88)	**3.39****	**0.78**	0.25–1.29	49.80 (14.56)	43.75 (19.46)	**3.85****	**0.40**	0.19–0.61
	Pre-Mdn (R)	Post-Mdn (R)	*Z*	*r*		Pre-Mdn (R)	Post-Mdn (R)	*Z*	*r*	
Self-injury	4.00 (0–12)	0.00 (0–9)	**−2.88****	**−0.66**		3.00 (0–56)	0.00 (0–71)	**−5.48****	**−0.57**	
A&E	2.00 (1–15)	0.00 (0–10)	**−2.42***	**−0.56**		1.00 (0–20)	0.00 (0–5)	**−6.02****	**−0.62**	
In-patient days	2.00 (0–150)	0.00 (0–2)	**−2.86****	**−0.66**		2.00 (0–341)	0.00 (0–17)	**−6.10****	**−0.63**	

*p = <.05, **p = <.01. *n*, sample size; Ax, assessment; End, end of DBT; *M*, mean; *SD*, standard deviation. Cohen's *d* small effect = ≥0.20, medium effect = ≥0.50, large effect = ≥0.80 (Cohen, 1988). Rosenthal's *r* small effect = ≥0.10, medium effect = ≥0.30, large effect = ≥0.50 (Cohen, 1988). *t*, paired samples *t*-test; *Z*, Wilcoxon signed rank test *Z*-statistic; MSI-BPD, MacLean Screening Instrument for BPD, clinical cut-off = ≥7; DERS, Difficulties with Emotion Regulation Scale, clinical cut-off = ≥128; RFL, Reasons for Living Inventory; MFQ, Moods and Feelings Questionnaire, clinical cut-off = ≥29; SCARED, Screen for Child Anxiety-Related Emotional Disorders, clinical cut-off = ≥25; Self-injuryl, count of suicidal and non-suicidal self-harm in the first 8 weeks (Pre) and last 8 weeks (Post) of DBT; A&E, count of Accident and Emergency department visits in the matched period before DBT (Pre) and during DBT (Post). In-patient days, occupied in-patient bed-days in the matched period before DBT (Pre) and during DBT (Post).

According to the Quade non-parametric analysis of covariance models, after adjusting for baseline rates of the corresponding variables, there were no significant differences between sexual orientation groups on the counts of self-injury incidents in the final 8 weeks of DBT ($F_{2,94} = 1.37$, $p = .25$) or A&E attendances during DBT ($F_{2,94} = 1.38$, $p = .26$). After adjusting for before-DBT occupied in-patient bed-days, there was a significant difference between sexual orientation groups in occupied in-patient bed-days during DBT ($F_{2,94} = 4.86$, $p = .01$). *Post-hoc* comparisons suggested that adjusted rates of in-patient bed-days were higher for heterosexual participants compared with bisexual/pansexual participants ($t_{94} = 3.02$, $p = <.01$). There was a (non-significant) trend towards the heterosexual participants having higher adjusted bed-days in DBT compared with the gay/lesbian participants ($t_{94} = 1.95$, $p = .05$). The comparison between the bisexual/pansexual and gay/lesbian groups was not statistically significant ($t_{94} = -0.24$, $p = .81$).

According to the ANCOVA models, after adjusting for baseline scores on the corresponding measures, there was no significant difference between gender identity groups at the end of DBT for scores on the MSI-BPD ($F_{1,109} = 0.12$, $p = .73$, partial $\eta^2 = <.01$), the DERS ($F_{1,109} = 0.68$, $p = .41$, partial $\eta^2 = <.01$), the RFL ($F_{1,109} = 0.27$, $p = .60$, partial $\eta^2 = <.01$), the MFQ ($F_{1,109} = 0.95$, $p = .33$, partial $\eta^2 = <.01$), and the SCARED ($F_{1,109} = 0.40$, $p = .53$, partial $\eta^2 = <.01$). According to the Quade non-parametric analysis of covariance model, after adjusting for baseline rates of the corresponding variables, there were no significant differences between gender identity groups on the count of self-injury incidents in the final 8 weeks of DBT ($F_{1,110} = 0.01$, $p = .91$), A&E attendances during DBT ($F_{1,110} = 0.02$, $p = .96$), or occupied in-patient bed-days during DBT ($F_{1,110} = 0.13$, $p = .72$).

Discussion

This study investigated clinical outcomes for adolescents with different sexual and gender identities in a highly-specialist CAMHS DBT programme. The overall number of young people completing the DBT programme after starting is similar to other evaluations of DBT for adolescents (42–88%; Johnstone *et al.*, 2022). No significant differences between groups were observed in the proportions completing DBT. However, it is possible that any differences may not have been sufficiently powered in this small sample once stratified. This study opted to not collapse groups further where possible due to the variability in outcomes found between minoritised groups in other studies (e.g. Beard *et al.*, 2017; Rimes *et al.*, 2019b). Nonetheless, it is of note that the completion rate for bisexual/pansexual and gay/lesbian groups were around 10% lower compared with the heterosexual group, and disaggregated data suggests this was even lower for bisexual groups. Additionally, while the differences between gender groups were minimal, the disaggregated binary transgender group, albeit small, had a completion rate of 44% compared with 67% and 79% for the cisgender and non-binary groups, respectively. As these findings were not statistically significant, inferences about any potential differences cannot be made. However, completion rates require investigation in future research with larger sample sizes as this may suggest that there are aspects of DBT pre-treatment and treatment that are less acceptable to these groups, resulting in potentially higher treatment attrition. Barriers to the acceptability of DBT and similar interventions for SGM groups include worries about therapist-held judgements and stigma, concerns regarding confidentiality, a lack of therapist awareness of SGM-associated difficulties, and being unable to integrate SGM topics into therapy (Camp *et al.*, 2023b; Hafeez *et al.*, 2017; Pattinson *et al.*, 2021).

SGM adolescents in this service, alongside their heterosexual and cisgender peers, appeared to experience reductions in self-injury, A&E attendance, in-patient service use, emotion dysregulation, and BPD, depression, and anxiety symptoms, as well as improvements in reasons for living. Sexual orientation and gender identity group membership did not appear to impact most clinical outcomes in this service after controlling for baseline symptoms.

However, adjusted rates of occupied in-patient bed-days during DBT were significantly higher for heterosexual participants compared with bisexual/pansexual groups. This is largely consistent with the findings of Poon *et al.* (2022), that sexuality minoritised adolescents had reductions in clinical outcomes in their DBT programme. It is of note that the pre-to-post effect sizes for the bisexual/pansexual and gay/lesbian groups were larger compared with the heterosexual group, as well as for the transgender group compared with the cisgender group. However, no significant change was detected in self-harm for the gay/lesbian group or anxiety symptoms for the heterosexual group, with small effect sizes. These findings suggest that there may be improvements by the end of this DBT programme in clinical outcomes for SGM groups, and that these measures may be sensitive to change to inform future studies. However, these findings are based on treatment-completers and need to be considered in the context the possible above-mentioned lower DBT completion rates for the SGM groups.

This DBT programme did not fundamentally adapt treatment delivery, beyond reasonable adaptions given to areas of need, for supporting SGM adolescents. However, it may be that increasing therapist awareness and knowledge of SGM-related difficulties increased their skills in supporting this group and integrating diversity into the modes of treatment (e.g. disclosing pronouns and using SGM examples in skills group), which may contribute towards consistent outcomes across groups. Indeed, SGM adolescents in this service have reported that there were strengths in how DBT therapists created safety and integrated SGM topics into therapy (Camp *et al.*, 2023b). This does not seek to diminish the need for treatment adaptations for SGM-associated needs, such as those developed by Skerven *et al.* (2019). These culturally responsive treatment offers represent useful approaches to reduce stigma and oppression in practice, and build in minority-specific needs, to reduce barriers to access and increase satisfaction. This is important given the research suggesting that SGM adolescents experiences barriers accessing and within services (e.g. Williams and Chapman, 2011), and that standard models such as DBT may not sufficiently meet the unique needs of SGM youth (Camp *et al.*, 2023b). Instead, it may mean that standard DBT as delivered in this service context for adolescents is sufficiently flexible to be applied to some needs and distress of SGM young people to support with the reduction of *traditional* clinical outcomes.

An effective treatment targeting high-risk behaviours and emotion dysregulation may be particularly important for SGM adolescents given their higher risk of difficulties in these areas and to reduce the potential mediating effect of emotion dysregulation in their mental distress (Hatzebuehler, 2009; King *et al.*, 2008; Liu *et al.*, 2019). It is also of interest that this cohort of young people, which were assessed as suitable for a highly specialist DBT programme, contain a large representation of SGM individuals; 65% were sexual minorities and 17% gender minorities in the overall sample. This is significantly higher than the number of SGM individuals thought to be in the general population of adolescents in the UK and USA (around 3–15% for sexual minorities and 0.2–2.0% for gender minorities; Gallup, 2022; Office for National Statistics, 2021a, 2021b; UK Government Equalities Office, 2018). A higher representation of SGM adolescents in this service may in part represent the high prevalence of relevant difficulties in SGM young people. However, the proportions of SGM adolescents assessed as suitable for this DBT service (i.e. 7 to 85 times) remain higher than would be expected even when considering the increased prevalence rates of self-injury and suicidal behaviours (e.g. 1.5 to 7 times; Liu *et al.*, 2019). This may suggest that there are particular SGM-associated needs not being met earlier in their treatment pathways and/or that they are experiencing barriers to accessing mental health services (e.g. clinician prejudice and misunderstanding; Hafeez *et al.*, 2017; Pattinson *et al.*, 2021). Thus, it may be that future research and implementation considers how to meet SGM adolescents' needs earlier in their treatment trajectory or generally in mental health services.

This study has a number of limitations. Firstly, this study relies on self-report measures, which may be subject to bias in reporting. Attempts, where possible, to corroborate self-reported frequencies of self-injurious behaviours, and emergency and in-patient service use were made

using national health service records, but due to the varied systems across different UK healthcare providers, it may be possible that count data are an under-representation. Secondly, no validated framework was used to collect self-injury data, which may decrease validity and replicability of this outcome. Thirdly, this study also presents outcome data from a sample of treatment completers, which likely represents the most optimistic version of results. However, an intention-to-treat analysis was not possible, due to difficulties obtaining end-treatment data from those who opted out before completion.

The sample was also recruited from a highly specialist national Tier-4 DBT programme, which local services only refer to once they have exhausted local options to target self-injury and suicidal behaviours. Therefore, this sample may constitute unique characteristics with regard to severity and complexity of need, which may not generalise to similar interventions in other service contexts. While attempts were made to split the sample by appropriate SGM subgroups due to the evidence showing heterogeneity of outcomes and experiences of each group (e.g. Rimes *et al.*, 2019b), it was not possible to split the sample by sex assigned at birth, which has also been shown to be associated with different outcomes for SGM groups (Rimes *et al.*, 2019a), due to the very low representation of male assigned sex at birth participants. The relatively small samples of minoritised groups, where these were able to be stratified, also reduced statistical power. Finally, while DBT therapists are highly trained and supervised, and attend weekly consult meetings to maintain adherence and treatment quality, no formal measure of adherence was used consistently in this clinical setting in order to be included as a reassurance of treatment fidelity. In addition, while it is likely that culturally sensitive changes to treatment delivery were made over time (for examples, see Camp *et al.*, 2023b), these were not systematically monitored. Thus, it is not possible to know to which extent these adaptations impacted outcomes for the minoritised groups.

This study presents exploratory findings from a range of SGM groups within an adolescent population, from a naturalistic clinical setting, which included more SGM groups (i.e. gender minorities) and a larger sample, compared with the one similar evaluation (Poon *et al.*, 2022). Similar studies in different settings, cultural contexts, and with a diverse range of participant characteristics are required. Future studies could also use the control afforded in research settings to conduct more methodologically robust research (e.g. randomised controlled trials) to investigate if DBT, in the current format, is efficacious for SGM adolescents and may benefit from including SGM-specific outcomes (e.g. internalised heterosexism). In addition, it is important to continue the work of culturally responsive intervention adaptations in order to reduce wider health inequalities, barriers to accessing services, and poorer experiences when in services (e.g. Hafeez *et al.*, 2017; Pattinson *et al.*, 2021), alongside supporting existing service contexts to better meet the needs of minoritised populations.

Conclusions

This exploratory study found statistically significant improvements in most clinical outcomes for SGM individuals and their cisgender and heterosexual peers within this DBT programme. There were no statistically significant differences in treatment completion, but emerging differences indicated possible lower completion by sexual orientation and gender minority subgroups that require further investigation. This highly specialist service context included a high representation of SGM youth, even when considering inflated risk of self-injury, which highlights an interesting area for future investigation. Preliminary effect sizes and results intend to inform future research in this area.

References

Angold, A., & Costello, E. J. (1987). *Mood and Feelings Questionnaire (MFQ)*. Durham, NC: Developmental Epidemiology Program, Duke University.

Batchmann, C., & Gooch, B. (2017). *LGBT in Britain: Hate Crime and Discrimination*. London: Stonewall.

Beard, C., Kirakosian, N., Silverman, A. L., Winer, J. P., Wadsworth, L. P., & Björgvinsson, T. (2017). Comparing treatment response between LGBQ and heterosexual individuals attending a CBT- and DBT-skills-based partial hospital. *Journal of Consulting and Clinical Psychology*, *85*, 1171–1181. https://doi.org/10.1037/ccp0000251

Bernegger, A., Kienesberger, K., Carlberg, L., Swoboda, P., Ludwig, B., Koller, R., Inaner, M., Zotter, M., Kapusta, N., Aigner, M., Haslacher, H., Kasper, S., & Schosser, A. (2018). The impact of COMT and childhood maltreatment on suicidal behaviour in affective disorders. *Scientific Reports*, *8*, 692. https://doi.org/10.1038/s41598-017-19040-z

Birmaher, B., Brent, D. A., Chiappetta, L., Bridge, J., Monga, S., & Baugher, M. (1999). Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED): a replication study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *38*, 1230–1236. https://doi.org/10.1097/00004583-199910000-00011

Birmaher, B., Khetarpal, S., Brent, D., Cully, M., Balach, L., Kaufman, J., & Neer, S. M. (1997). The Screen for Child Anxiety Related Emotional Disorders (SCARED): scale construction and psychometric characteristics. *Journal of the American Academy of Child & Adolescent Psychiatry*, *36*, 545–553. https://doi.org/10.1097/00004583-199704000-00018

Bould, H., Mars, B., Moran, P., Biddle, L., & Gunnell, D. (2019). Rising suicide rates among adolescents in England and Wales. *The Lancet*, *394*, 116–117. https://doi.org/10.1016/S0140-6736(19)31102-X

Butler, C., Joiner, R., Bradley, R., Bowles, M., Bowes, A., Russell, C., & Roberts, V. (2019). Self-injury prevalence and ideation in a community sample of cis, trans and other youth. *International Journal of Transgenderism*, *20*, 447–458. https://doi.org/10.1080/15532739.2019.1614130

Camp, J. (2023). Dialectical behaviour therapy for sexual minority populations. In Semlyen, J., & Rohleder, P. (eds), *Sexual Minorities and Mental Health*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-031-37438-8_12

Camp, J., Hunt, K., & Smith, L. (2023a). Implementing dialectical behaviour therapy in routine practice: an evaluation of a national CAMHS DBT service for adolescents. *the Cognitive Behaviour Therapist*, *16*, e29. https://doi.org/10.1017/S1754470X23000211

Camp, J., Morris, A., Wilde, H., Smith, P., & Rimes, K. A. (2023b). Gender- and sexuality-minoritised adolescents in DBT: a reflexive thematic analysis of minority-specific treatment targets and experience. *the Cognitive Behaviour Therapist*, 16, e36. doi: 10.1017/S1754470X23000326

Cheung, R., McKeown, R., Schneider, Z., & Shah, R. (2020). Suicide. RCPCH: State of Child Health. https://stateofchildhealth.rcpch.ac.uk/evidence/mental-health/suicide/#page-section-5

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd edn). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Cohen, J. M., Norona, J. C., Yadavia, J. E., & Borsari, B. (2021). Affirmative dialectical behavior therapy skills training with sexual minority veterans. *Cognitive and Behavioral Practice*, 28, 77–91. https://doi.org/10.1016/j.cbpra.2020.05.008

Daviss, W. B., Birmaher, B., Melhem, N. A., Axelson, D. A., Michaels, S. M., & Brent, D. A. (2006). Criterion validity of the Mood and Feelings Questionnaire for depressive episodes in clinic and non-clinic subjects. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 47, 927–934. https://doi.org/10.1111/j.1469-7610.2006.01646.x

Dunbar, M. S., Sontag-Padilla, L., Ramchand, R., Seelam, R., & Stein, B. D. (2017). Mental Health service utilization among lesbian, gay, bisexual, and questioning or queer college students. *Journal of Adolescent Health*, 61, 294–301. https://doi.org/10.1016/j.jadohealth.2017.03.008

Enders, C. K. (2001). The performance of the full information maximum likelihood estimator in multiple regression models with missing data. *Educational and Psychological Measurement*, 61, 713–740. https://doi.org/10.1177/0013164401615001

First, M. B., Gibbon, M., Spitzer, R. L., Williams, J. B. W., & Smith Benjamin, L. (1997). *Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II): User's Guide*, 1st edn. American Psychiatric Press Incorporated: Washington, DC.

Fruzzetti, A. E. (2019). Dialectical behaviour therapy with parents, couples, and families to augment Stage 1 outcome. In Swales, M. A. (ed), *The Oxford Handbook of Dialectical Behaviour Therapy* (pp. 389–411). Oxford University Press.

Gallup (2022). LGBT identification in U.S. ticks up to 7.1%. Available at: https://news.gallup.com/poll/389792/lgbt-identification-ticks-up.aspx

Geulayov, G., Casey, D., McDonald, K. C., Foster, P., Pritchard, K., Wells, C., Clements, C., Kapur, N., Ness, J., Waters, K., & Hawton, K. (2018). Incidence of suicide, hospital-presenting non-fatal self-injury, and community-occurring non-fatal self-injury in adolescents in England (the iceberg model of self-injury): a retrospective study. *The Lancet Psychiatry*, 5, 167–174. https://doi.org/10.1016/S2215-0366(17)30478-9

Gratz, K., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment*, 26, 41–54. https://doi.org/10.1007/s10862-008-9102-4

Grove, J. L., & Crowell, S. E. (2019). Invalidating environments and the development of borderline personality disorder. Swales, M. A. (ed), *The Oxford Handbook of Dialectical Behaviour Therapy* (pp. 47–68). Oxford University Press.

Haas, A. P., Eliason, M., Mays, V. M., Mathy, R. M., Cochran, S. D., D'Augelli, A. R., Silverman, M. M., Fisher, P. W., Hughes, T., Rosario, M., Russell, S. T., Malley, E., Reed, J., Litts, D. A., Haller, E., Sell, R. L., Remafedi, G., Bradford, J., Beautrais, A. L., . . . & Clayton, P. J. (2011). Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: review and recommendations. *Journal of Homosexuality*, 58, 10–51. https://doi.org/10.1080/00918369.2011.534038

Hafeez, H., Zeshan, M., Tahir, M. A., Jahan, N., & Naveed, S. (2017). Health care disparities among lesbian, gay, bisexual, and transgender youth: a literature review. *Cureus*, 9, e1184. https://doi.org/10.7759/cureus.1184

Harned, M. S., Coyle, T. N., & Garcia, N. M. (2022). The inclusion of ethnoracial, sexual, and gender minority groups in randomized controlled trials of dialectical behavior therapy: a systematic review of the literature. *Clinical Psychology: Science and Practice*, 29, 83–93. https://doi.org/10.1037/cps0000059

Hatzenbuehler, M. L. (2009). How does sexual minority stigma 'get under the skin'? A psychological mediation framework. *Psychological Bulletin*, 135, 707–730. https://doi.org/10.1037/a0016441

Hawton, K., Bale, L., Brand, F., Townsend, E., Ness, J., Waters, K., Clements, C., Kapur, N., & Geulayov, G. (2020). Mortality in children and adolescents following presentation to hospital after non-fatal self-injury in the Multicentre Study of Self-injury: a prospective observational cohort study. *The Lancet Child & Adolescent Health*, 4, 111–120. https://doi.org/10.1016/S2352-4642(19)30373-6

Hendricks, M. L., & Testa, R. J. (2012). A conceptual framework for clinical work with transgender and gender nonconforming clients: an adaptation of the Minority Stress Model. *Professional Psychology: Research and Practice*, 43, 460–467. https://doi.org/10.1037/a0029597

Heron, M. (2018). Deaths: Leading Causes for 2016. National vital statistics reports: from the Centers for Disease Control and Prevention, National Center for Health Statistic. *National Vital Statistics System*, 67, 1–77.

Hubbard, L. (2021). *Hate Crime Report 2021: Supporting LGBT+ Victims of Hate Crime*. London, Galop. Available at: https://galop.org.uk/wp-content/uploads/2021/06/Galop-Hate-Crime-Report-2021-1.pdf

Johnstone, O. K., Marshall, J. J., & McIntosh, L. G. (2022). A review comparing dialectical behavior therapy and mentalization for adolescents with borderline personality traits, suicide and self-injuring behavior. *Adolescent Research Review*, 7, 187–209. https://doi.org/10.1007/s40894-020-00147-w

Kapatais, A., Williams, A. J., & Townsend, E. (2022). The mediating role of emotion regulation on self-injury among gender identity and sexual orientation minority (LGBTQ+) individuals. *Archives of Suicide Research*, 1–14. https://doi.org/10.1080/13811118.2022.2064254

King, J., Cabarkapa, S., & Leow, F. (2019). Adolescent self-injury: think before prescribing. *Australian Prescriber*, *42*, 90–92. https://doi.org/10.18773/austprescr.2019.023

King, M., Semlyen, J., Tai, S. S., Killaspy, H., Osborn, D., Popelyuk, D., & Nazareth, I. (2008). A systematic review of mental disorder, suicide, and deliberate self-injury in lesbian, gay and bisexual people. *BMC Psychiatry*, *8*, 70. https://doi.org/10.1186/1471-244X-8-70

Kothgassner, O. D., Goreis, A., Robinson, K., Huscsava, M. M., Schmahl, C., & Plener, P. L. (2021). Efficacy of dialectical behavior therapy for adolescent self-injury and suicidal ideation: a systematic review and meta-analysis. *Psychological Medicine*, *51*, 1057–1067. https://doi.org/10.1017/S0033291721001355

Linehan, M. (1993). *Cognitive-Behavioral Treatment of Borderline Personality Disorder*. New York, USA: Guilford Press.

Liu, C. H., Stevens, C., Wong, S. H. M., Yasui, M., & Chen, J. A. (2019). The prevalence and predictors of mental health diagnoses and suicide among U.S. college students: implications for addressing disparities in service use. *Depression and Anxiety*, *36*, 8–17. https://doi.org/10.1002/da.22830

McDermott, E. (2016). *Queer Futures Final Report: Understanding Lesbian, Gay, Bisexual and Trans (LGBT) Adolescents' Suicide, Self-Injury and Help-Seeking Behaviour.* Available at: https://doi.org/10.13140/RG.2.1.3652.2487

McDermott, E., Hughes, E., & Rawlings, V. (2018). The social determinants of lesbian, gay, bisexual and transgender youth suicidality in England: a mixed methods study. *Journal of Public Health*, *40*, e244–e251. https://doi.org/10.1093/pubmed/fdx135

McManus, S., Gunnell, D., Cooper, C., Bebbington, P. E., Howard, L. M., Brugha, T., Jenkins, R., Hassiotis, A., Weich, S., & Appleby, L. (2019). Prevalence of non-suicidal self-injury and service contact in England, 2000–14: repeated cross-sectional surveys of the general population. *The Lancet Psychiatry*, *6*, 573–581. https://doi.org/10.1016/S2215-0366(19)30188-9

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological Bulletin*, *129*, 674–697. https://doi.org/10.1037/0033-2909.129.5.674

Monash University (2022). Qualtrics. Psychological Research Portal. https://www.monash.edu/research-portal/vlab/applications/qualtrics

National Institute for Health and Care Excellence (2022). Self-Injury: Assessment, Management, and Preventing Recurrence [NG225]. Available at: https://www.nice.org.uk/guidance/ng225

National Institute of Mental Health (2022). Suicide Prevention. Available at: https://www.nimh.nih.gov/health/topics/suicide-prevention

Neumann, A., van Lier, P. A. C., Gratz, K. L., & Koot, H. M. (2010). Multidimensional assessment of emotion regulation difficulties in adolescents using the Difficulties in Emotion Regulation Scale. *Assessment*, *17*, 138–149. https://doi.org/10.1177/1073191109349579

NHS England (2018). Child and Adolescent Mental Health Services (CAMHS) Tier 4: General Adolescent Services Including Specialist Eating Disorder Services. Available at: https://www.england.nhs.uk/publication/child-and-adolescent-mental-health-services-camhs-tier-4-general-adolescent-services-including-specialist-eating-disorder-services/ (accessed August 2023).

Noblin, J., Venta, A., & Sharp, C. (2013). The validity of the MSI-BPD among inpatient adolescents. *Assessment*, *21*, 210–217. https://doi.org/10.1177/1073191112473177

Office for National Statistics (2021a). Gender identity, England and Wales: Census 2021. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/genderidentity/bulletins/genderidentityenglandandwales/census2021

Office for National Statistics (2021b). Sexual orientation, England and Wales: Census 2021. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/sexuality/bulletins/sexualorientationenglandandwales/census2021

Osman, A., Downs, W. R., Kopper, B. A., Barrios, F. X., Baker, M. T., Osman, J. R., Besett, T. M., & Linehan, M. M. (1998). The Reasons For Living inventory for Adolescents (RFL-A): development and psychometric properties. *Journal of Clinical Psychology*, *54*, 1063–1078. https://doi.org/10.1002/(SICI)1097-4679(199812)54:8<1063::AID-JCLP6>3.0.CO;2-Z

Pachankis, J. E. (2018). The scientific pursuit of sexual and gender minority mental health treatments: toward evidence-based affirmative practice. *American Psychologist*, *73*, 1207–1219. https://doi.org/10.1037/amp0000357

Pantalone, D. W., Sloan, C. A., & Carmel, A. (2019). Dialectical behavior therapy for borderline personality disorder and suicidality among sexual and gender minority individuals. In Pachankis, J. E., & Safren, S. A. (eds), *Handbook of Evidence-Based Mental Health Practice with Sexual and Gender Minorities* (pp. 408–429). Oxford University Press. https://doi.org/10.1093/med-psych/9780190669300.003.0018

Pattinson, E. M., McDermott, E., Eastham, R., Hughes, E., Johnson, K., Davis, S., Pryjmachuk, S., Jenzen, O., & Mateus, C. (2021). Tackling LGBTQ+ youth mental health inequality: mapping mental health support across the UK. *The British Student Doctor Journal*, *5*, 20. https://doi.org/10.18573/bsdj.289

Penta, S., Correia, S., Schneider, M. A., Holshausen, K., Nicholson, A. A., Haefner, S. A., Mutschler, C., Ferdossifard, A., Boylan, K., Hewitt, J., Roth, S. L., Wilson, R., & Hatchard, T. (2022). Sex and gender in treatment response to dialectical

behaviour therapy: current knowledge, gaps, and future directions. *the Cognitive Behaviour Therapist*, *15*, e30. https://doi.org/10.1017/S1754470X22000253

Poon, J., Galione, J. N., Grocott, L. R., Horowitz, K. J., Kudinova, A. Y., & Kim, K. L. (2022). Dialectical behavior therapy for adolescents (DBT-A): outcomes among sexual minorities at high risk for suicide. *Suicide and Life-Threatening Behavior*, sltb.12828. https://doi.org/10.1111/sltb.12828

Rae, G. (1985). Quade's nonparametric analysis of covariance of matching. *Behavior Research Methods, Instruments & Computers*, *17*, 421–422. https://doi.org/10.3758/BF03200959

Raifman, J., Charlton, B. M., Arrington-Sanders, R., Chan, P. A., Rusley, J., Mayer, K. H., Stein, M. D., Austin, S. B., & McConnell, M. (2020). Sexual orientation and suicide attempt disparities among US adolescents: 2009–2017. *Pediatrics*, *145*, e20191658. https://doi.org/10.1542/peds.2019-1658

Rathus, J. H., Miller, A. L., & Bonavitacola, L. (2018). DBT with adolescents. In Swales, M. A. (ed), *The Oxford Handbook of Dialectical Behaviour Therapy* (pp. 546–572). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780198758723.013.18

Rimes, K. A., Goodship, N., Ussher, G., Baker, D., & West, E. (2019). Non-binary and binary transgender youth: comparison of mental health, self-injury, suicidality, substance use, and victimization experiences. *International Journal of Transgenderism*, *20*, 230–240. https://doi.org/10.1080/15532739.2017.1370627

Rimes, K. A., Ion, D., Wingrove, J. & Carter, B. (2019b). Sexual orientation differences in psychological treatment outcomes for depression and anxiety: national cohort study. *Journal of Consulting and Clinical Psychology*, *87*, 577–589. https://doi.org/10.1037/ccp0000416

Rodriguez-Seijas, C., Morgan, T. A., & Zimmerman, M. (2021). Is there a bias in the diagnosis of borderline personality disorder among lesbian, gay, and bisexual patients? *Assessment*, *28*, 724–738. https://doi.org/10.1177/1073191120961833

Rosenthal, R. (1994). Parametric measures of effect size. In Cooper, H., & Hedges, L. V. (eds), *The Handbook of Research Synthesis*. (pp. 231–244). New York, USA: Russell Sage Foundation.

Ross, L. E., Salway, T., Tarasoff, L. A., MacKay, J. M., Hawkins, B. W., & Fehr, C. P. (2018). Prevalence of depression and anxiety among bisexual people compared to gay, lesbian, and heterosexual individuals: a systematic review and meta-analysis. *Journal of Sex Research*, *55*, 435–456. https://doi.org/10.1080/00224499.2017.1387755

Russell, S. T., & Fish, J. N. (2016). Mental health in lesbian, gay, bisexual, and transgender (LGBT) youth. *Annual Review of Clinical Psychology*, *12*, 465–487. https://doi.org/10.1146/annurev-clinpsy-021815-093153

Scheffer, J. (2002), Dealing with missing data. *Research Letters in the Information and Mathematical Sciences*, *3*, 153–160.

Skerven, K., Mirabito, L., Kirkman, M., & Shaw, B. (2021). Dialectical behaviour therapy skills group including stigma management: a pilot with sexual and gender minority veterans. *the Cognitive Behaviour Therapist*, *14*, e33. https://doi.org/10.1017/S1754470X21000295

Skerven, K., Whicker, D. R., & LeMaire, K. L. (2019). Applying dialectical behaviour therapy to structural and internalized stigma with LGBTQ+ clients. *The Cognitive Behaviour Therapist*, *12*, e9. https://doi.org/10.1017/S1754470X18000235

Sloan, C. A., Berke, D. S., & Shipherd, J. C. (2017). Utilizing a dialectical framework to inform conceptualization and treatment of clinical distress in transgender individuals. *Professional Psychology: Research and Practice*, *48*, 301–309. https://doi.org/10.1037/pro0000146

Smith, L., Hunt, K., Parker, S., Camp, J., Stewart, C., & Morris, A. (2023). Parent and carer skills groups in dialectical behaviour therapy for high-risk adolescents with severe emotion dysregulation: a mixed-methods evaluation of participants' outcomes and experiences. *International Journal of Environmental Research and Public Health*, *20*, 6334. https://doi.org/10.3390/ijerph20146334

Tilley, J. L., Molina, L., Luo, X., Natarajan, A., Casolaro, L., Gonzalez, A., & Mahaffey, B. (2022). Dialectical behaviour therapy (DBT) for high-risk transgender and gender diverse (TGD) youth: a qualitative study of youth and mental health providers' perspectives on intervention relevance. *Psychology and Psychotherapy: Theory, Research and Practice*, *95*, 1056–1070. https://doi.org/10.1111/papt.12418

UK Government Equalities Office (2018). Trans people in the UK. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721642/GEO-LGBT-factsheet.pdf

Weinberg, A., & Klonsky, E. D. (2009). Measurement of emotion dysregulation in adolescents. *Psychological Assessment*, *21*, 616–621. https://doi.org/10.1037/a0016669

Williams, K. A., & Chapman, M. V. (2011). Comparing health and mental health needs, service use, and barriers to services among sexual minority youths and their peers. *Health & Social Work*, *36*, 197–206. https://doi.org/10.1093/hsw/36.3.197

Zanarini, M. C., Vujanovic, A. A., Parachini, E. A., Boulanger, J. L., Frankenburg, F. R. & Hennen, J. (2003). A screening measure for BPD: the McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD). *Journal of Personality Disorders*, *17*, 568–573. https://doi.org/10.1521/pedi.17.6.568.25355