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Psychosocial support interventions for children and adolescents experiencing gender dysphoria or incongruence: a systematic review

Claire Heathcote, Jo Taylor, Ruth Hall, Stuart William Jarvis, Trilby Langton, Catherine Elizabeth Hewitt, Lorna Fraser

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Department of Health Sciences, University of York, York, UK

Correspondence to
Dr Jo Taylor, Department of Health Sciences, University of York, York, UK; dohs-gender-research@york.ac.uk

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ABSTRACT

Background National and international guidelines recommend that psychosocial support should be a key component of the care offered to children and adolescents experiencing gender dysphoria/incongruence. However, specific approaches or interventions are not recommended.

Aim To identify and summarise evidence on the outcomes of psychosocial support interventions for children and adolescents (age 0-18) experiencing gender dysphoria/incongruence.

Methods Systematic review and narrative synthesis. Database searches (MEDLINE; EMBASE; CINAHL; PsycINFO; Web of Science) were performed in April 2022, with results assessed independently by two reviewers. Peer-reviewed articles reporting the results of studies measuring outcomes of psychosocial support interventions were included. Quality was assessed using the Mixed Methods Appraisal Tool.

Results Ten studies were included. Half were conducted in the US, with others from Australia, Canada, New Zealand and the UK. Six were pre–post analyses or cohort studies, three were mixed methods, and one was a secondary analysis of intervention data from four trials. Most studies were of low quality. Most analyses of mental health and psychosocial outcomes showed either benefit or no change, with none indicating negative or adverse effects.

Conclusions The small number of low-quality studies limits conclusions about the effectiveness of psychosocial interventions for children/adolescents experiencing gender dysphoria/incongruence. Clarity on the intervention approach as well as the core outcomes would support the future aggregation of evidence. More robust methodology and reporting is required.

PROSPERO registration number CRD42021289659.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ The number of children and adolescents identifying as a gender different from the sex they were registered at birth has increased markedly over the last 10-15 years.
⇒ Children and adolescents experiencing gender dypshoria/incongruence have higher rates of mental health needs compared with their peers.
⇒ National and international guidelines recommend that psychosocial interventions should be a key component of the care offered to children and adolescents experiencing gender dysphoria/incongruence.

WHAT THIS STUDY ADDS

⇒ There is limited evidence on the outcomes of psychosocial interventions for children and adolescents experiencing gender dysphoria/incongruence.
⇒ The evidence base for outcomes of psychosocial interventions for children and adolescents experiencing gender dysphoria/incongruence is of low quality.
⇒ Most analyses of mental health, psychological and/or psychosocial outcomes showed either benefit or no change, with none indicating negative or adverse effects.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Identification of the core approach and outcomes for psychosocial interventions would ensure they are addressing key clinical goals, attending to the needs of children/adolescents and families as well as supporting future aggregation of evidence. More robust methodology and reporting is required.

INTRODUCTION

The number of children and adolescents who are experiencing gender dysphoria/incongruence has risen markedly over the last 10-15 years.[1] A considerably higher proportion of children and adolescents who present to specialised gender services experience mental health difficulties compared with their peers in the general population, with evidence showing higher recorded rates of psychiatric diagnoses,[2–4] including depression,[3–6] anxiety[3 4 7] and eating disorders,[4 8] and higher recorded rates of suicidality[9 10] and self-harm.[10 11]

The causes of mental health concerns and the ways in which well-being issues might contribute to the emergence of distress in this population are not fully understood. Some authors argue that children and adolescents experiencing gender dysphoria/incongruence present with complex and diverse needs so a developmental approach is necessary to understand the multiple factors that might be contributing to social and emotional distress.[12–14] There is also evidence that the experience of being in a minority group can have a negative impact on development and well-being.[15 16] Meyer's minority

stress model proposes that protective or coping factors can help to interrupt or moderate the impact of minority stress.[17 18] Identifying, strengthening or developing coping and psychosocial support factors is reported to help build well-being and improve mental health.[19 20]

National and international guidelines recommend that psychosocial interventions should be a key component of the care offered to children and adolescents experiencing gender dysphoria/incongruence. It is recommended that support should be offered to enhance psychological functioning, improve mood and well-being, and support coping factors, in addition to managing any co-occurring or contributory mental health difficulties.[21–24]

This systematic review aims to identify and summarise the current evidence on the effectiveness of psychosocial support interventions for children and adolescents experiencing gender dysphoria/incongruence.

METHODS

The review forms part of a linked series of systematic reviews examining the epidemiology, care pathways, outcomes and experiences of children and adolescents experiencing gender dysphoria/incongruence and is reported according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.[25] The systematic review protocol was registered on PROSPERO (CRD42021289659).[26]

Search strategy

A single search strategy was used to identify studies comprising two combined concepts: 'children', which included all terms for children and adolescents; and 'gender dysphoria', which included associated terms such as gender-related distress and gender incongruence, and gender identity terms including transgender, gender diverse and non-binary. MEDLINE (see online supplemental table 1), Embase and PsycINFO through OVID, CINAHL Complete through EBSCO and Web of Science (Social Science Citation Index) were searched (13–23 May 2021; updated 27 April 2022). The reference lists of eligible studies and any relevant identified systematic reviews were also checked.[27 28]

Inclusion criteria

Studies were included in relation to the following criteria:

Population: children and adolescents up to 18 years with gender incongruence, gender dysphoria/gender-related distress or referral to a paediatric or adolescent gender service. Studies with a mixed population of adolescents/young adults (up to 25) were included, as were studies of other mixed populations if separate analyses of the groups were undertaken or if most participants (80% or more) were from the population of interest.

Intervention: any psychological or psychosocial intervention provided to children and/or adolescents. Unstructured peer support groups and interventions designed to modify gender behaviours or identity were excluded. Interventions only provided to parents were excluded.

Comparator: any.

Outcomes: any child/adolescent outcome related to the intervention.

Study design: studies published in English in a peer-reviewed journal of any design apart from case series or case reports.

Study selection

The results of the database and other searches were uploaded to Covidence and screened independently by two reviewers.[29] Full texts for potentially relevant articles were retrieved and reviewed against the inclusion criteria by two reviewers independently. Disagreements were resolved through discussion and the inclusion of a third reviewer.

Data extraction

Data was extracted by one reviewer and checked by another using a piloted extraction sheet.

Quality assessment

Quality was assessed using the Mixed Methods Appraisal Tool (MMAT),[30] a tool designed to appraise methodological quality in systematic reviews that include a combination of quantitative, qualitative and/or mixed methods research. Critical appraisal was undertaken by two reviewers independently, with consensus reached through discussion and involvement of a third reviewer where necessary. A score of 0–2 was deemed low quality, 3 medium, and 4–5 high (max score 5).

Synthesis methods

Due to extensive heterogeneity, a narrative approach to synthesising outcome data was adopted. This included any qualitative data pertaining to perceived or experienced effects as well as quantitatively measured outcomes. The Template for Intervention Description and Replication (TIDieR) Checklist[31] was used to describe intervention reporting. For TIDieR items 1–10 (which cover intervention aims, theory, content and delivery), studies were rated as providing 'full', 'partial' or no ('none') information.

RESULTS

Overall, searches yielded 28 147 records, of which 3181 were identified as potentially relevant for the linked series of systematic reviews (see figure 1). From these, nine studies met the inclusion criteria for this review of psychosocial intervention studies. One additional study meeting the inclusion criteria was identified from citation searches.[32] Therefore, 10 studies were included in this review.[32–41]

Study characteristics

There were four cohort studies,[36 39–41] two pre–post studies[32 34] (one of which included analysis of open-ended survey responses in addition to outcome data[34]), three mixed methods,[33 35 37] and one was a secondary analysis of intervention group data from four randomised controlled trials (RCTs)[38] (the individual RCTs were excluded because they presented combined results for those experiencing and not experiencing gender dysphoria/incongruence). Five studies included a comparator group of children and/or adolescents not experiencing gender dysphoria/incongruence[36 38–41] and one included a historical cohort of adolescents with gender dysphoria/incongruence.[33] Half of the studies were conducted in the US (n=5),[32 35 38 40 41] two in the UK[36 37] and single studies from Australia,[33] Canada[34] and New Zealand.[39] Table 1 provides a summary of study characteristics.

Studies were published between 2015 and 2021 with data from 2012 to 2021. In total, studies included analyses of 10 583 individuals (854 who were transgender and gender diverse or experiencing gender dysphoria/incongruence, 2 sexual minority youth from a mixed population study[32] and 9727 who did not identify as transgender or experience gender dysphoria/incongruence). Study sample sizes ranged from 8 to 9079. The age of participants ranged from 7 to 25 years with average age ranging from 10 to 19 years. Three studies included a mixed sample

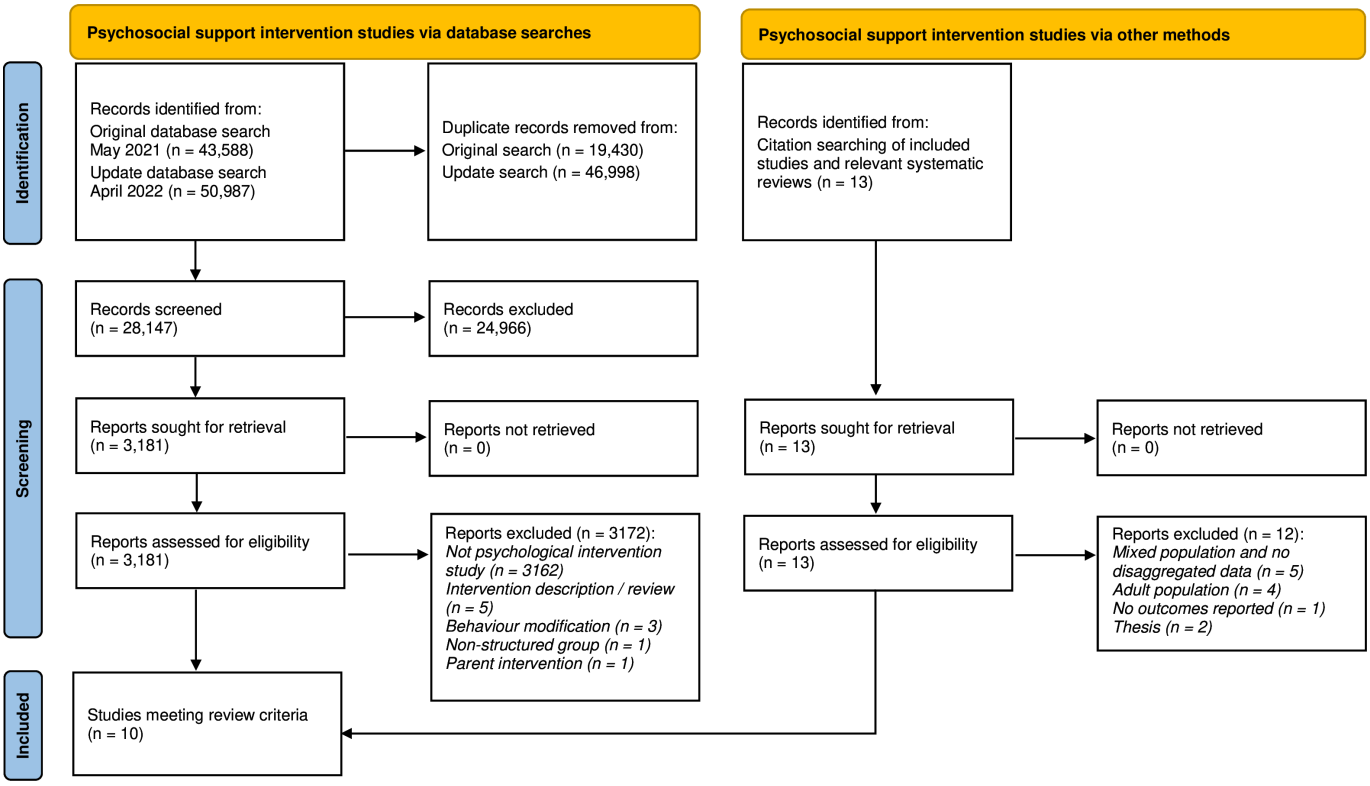

Figure 1 Study flow diagram.

of adolescents and young adults[32 39 41] and only two studies included children under the age of 12 years.[33 38]

The gender identity of participants experiencing gender dysphoria/incongruence and how this was reported varied across the studies. Birth-registered sex was reported in four studies,[33 36–38] with more birth-registered females in three of the four studies.[33 36 37] Four studies reliably reported the ethnicity of participants experiencing gender dysphoria/incongruence, with the percentage from a minority ethnic group ranging from 19.5% to 50%.[32 35 38 39]

Outcomes

Studies employed a range of measures across different mental health and well-being outcomes with little congruence between studies (see table 1). All studies used validated instruments to measure outcomes. One study also devised a measure to determine the level of social support, degree of social transition, medication use and healthcare usage.[33] Most relied on self-report measures and the timing of outcomes varied, with four studies measuring outcomes post-intervention only[32 37 39 41] and others including a later follow-up ranging from 1 to 18 months.

Interventions

Various interventions were used: cognitive behavioural therapy (CBT) (n=2),[34 39] mindfulness and self-compassion (n=1),[35] attachment-based family therapy (n=1),[32] 'a community system of care approach' (n=1),[41] a gender service triage model including psychosocial support (n=1)[33] and interventions using multiple different therapeutic approaches/techniques (n=4).[36–38 40] All studies stated the goal of the intervention, and nine described the modality or theoretical approach.[32 34–41] Table 2 provides a summary of intervention characteristics.

Three interventions were developed for children and/or adolescents with mental health difficulties or diagnoses,[38–40] one for sexual and gender minority adolescents,[34] and two for sexual or gender minority adolescents and young adults with specific needs (clinical levels of suicidal ideation or moderate depression[32]; housing, mental health or substance misuse problems[41]). Three interventions were developed for children and/or adolescents referred to a specialist gender service,[33 36 37] and one was a self-compassion intervention partially modified for adolescents experiencing gender dysphoria/incongruence.[35]

The majority of studies gave an indication of intervention content, activities and/or processes used in the intervention,[33–35 37–39] although this varied from a brief explanation[33 38–40] to more detailed content.[34 35] Eight studies provided information about who delivered the intervention, which included staff (professionals/roles not reported),[36] psychologists[37] and a specialist nurse[33] working in gender services, trained facilitators/instructors[34 35] or therapists,[32 38] and case managers.[41]

Most interventions were delivered face-to-face (n=8)[32–34 36–38 40 41] with two online.[35 39] Interventions were delivered individually (n=3),[33 38 39] in groups (n=3),[34 35 37] in families (n=1)[32] or in combination (n=3).[36 40 41] The setting for face-to-face interventions varied including specialist gender services (n=3),[33 36 37] community settings for sexual and gender minorities (n=2),[32 41] community mental health clinics (n=1),[38] a weekend retreat format[34] and an acute residential treatment programme (n=1)[40] (the specific setting for these last two was not reported).

Intervention duration ranged from a single session[33] to having no fixed duration or number of sessions,[36 38] with some participants receiving psychosocial care for around 18 months from these. The number and/or frequency of sessions varied from a single 90 minute session[33] to three times weekly for 3–6 months.[41] Three interventions had 8–9 sessions[34 35 37] and one had 16,[32] with frequency ranging from daily to weekly. Three studies reported session duration, all were 90 minutes.[33 35 37] The

Table 1 Study characteristics

First author	Study design	Data collection	Intervention population*	Participants with gender dysphoria/ incongruence*	Comparator/control group*	Intervention and setting	Outcome and measurement	Time to follow-up(s)
Allen *et al*,[33] Australia	Pre–post with historical controls Qualitative interviews Mixed methods design	Pre–post: January 2017 to January 2019 Historical controls: mid-2016	Transgender and gender diverse children and young people (aged 8–17) awaiting treatment from The Royal Children's Hospital Gender Service (RCHGS)	*Quantitative study (n=142)* Median age 15 years (IQR 13.7–16.2) Birth-assigned sex, n (%): female 105 (73.9), male 37 (26.1) Gender identity, n (%): Transgender male 80 (56.3) Transgender female 29 (20.4) Non-binary 16 (11.3) Unsure 16 (11.3) Prefer not to answer 1 (0.7) *Qualitative study (n=14, sub-sample of above*) Age range 13–17 years Birth-assigned sex: female (13), male (1) Gender identity: transgender male (12), transgender female (1), unsure (1)	Within group: pre-intervention measures Historical controls (n=120) Children and adolescents who attended RCHGS prior to the start of triage clinic. Median age 14.9 years (IQR 12.4–16.7) Birth-assigned sex, n (%): female 61 (50.8), male 59 (49.2)	First Assessment Single Session Triage (FAAST) clinic led by clinical nurse consultant. Includes information, education and support. Setting: specialist gender clinic for children and adolescents	*Depression and anxiety* Parent-rated Child Behaviour Checklist (CBCL) and self-reported Youth Self-Report (YSR) *Suicidality* Columbia Suicidality Severity Rating Scale (C-SSRS) self-report age≥12 *Quality of Life* Child Health Utility 9D (CHU9D) self-report *Family Functioning* Family Assessment Device (FAD) General Functioning Subscale self-report *Support, social transition, medication and health professional use* Developed by RCHGS; medication and health professional use parent report; support and social transition self-report	Median time pre–post was 259 days (IQR 154–308)
Austin *et al*,[34] Canada	Longitudinal pre–post Open-ended survey questions Pilot study	2014	Young people aged 14–18 years who identify as non-heterosexual and/or non-cisgender Transgender young people attending intervention were recruited to this study	n=8 Age range 16–18 years Gender identity: non-binary (6), queer (5), female (2), transgender (2), male (1), two-spirit (1), gender independent (1), 'figuring things out' (1) (most selected at least two categories)	Comparator: pre-intervention measures	AFFIRM— affirmative CBT skills group intervention Setting: weekend retreat at a community centre for sexual and gender minority communities	*Depression:* The Beck Depression Inventory (BDI) self-report *Coping*: Adolescent Proactive Coping Inventory (PCI-A) self-report	Post-test and 3 months
Bluth *et al*,[35] USA	Longitudinal pre–post End-of-programme qualitative interviews and open-ended survey questions Mixed methods design	Date not reported	Young people aged 13–17 years who identify as transgender or gender expansive	*Quantitative study (n=41*) Median age 14.5 years SD 1.49 Gender identity: transfemale (9), transmale (18), non-binary (12), gender fluid (3), questioning (2), agender (1) *Qualitative study (n=11, sub-sample of above*) Median age 14.5 years SD (1.04) Gender identity: transmale (8), non-binary (2), gender fluid (1)	Comparator: pre-intervention measures	Mindful Self-Compassion for Teens (MSC-T) group intervention Setting: online	All self-report *Self compassion:* Self-compassion Scale Youth (SCS-Y) *Global evaluation of well-being:* Student Life Satisfaction Scale (SLSS) *Anxiety:* Spielberger State-Trait Anxiety Inventory (STAI) - short form *Depression:* Patient Health Questionnaire-9 (PHQ-9) *Suicidality:* Interpersonal Needs Questionnaire (INQ) *Resilience:* Brief Resilience Scale (BRS)	Post-test and 3 months

Continued

Table 1 Continued

First author	Study design	Data collection	Intervention population*	Participants with gender dysphoria/ incongruence*	Comparator/control group*	Intervention and setting	Outcome and measurement	Time to follow-up(s)
Costa *et al*,[36] UK	Longitudinal cohort study	Date not reported	Adolescents referred to the Gender Identity Development Service (GIDS) (age <18) who completed diagnostic procedure (all diagnosed with gender dysphoria)	n=201 Mean age 15.5 years SD 1.4, range 12–17 years Birth-assigned sex, n (%): female 125 (62.2), male 76 (37.8) The sample was divided into groups of immediately eligible for puberty suppression (101) and delayed eligible (100)	Adolescents without observed psychological/ psychiatric symptoms who took part in a cohort study of children and adolescents who attended child and adolescent mental health services (n=169)	Range of psychotherapeutic interventions (individual, family and group) Setting: National gender service for children and young people	*General psychosocial functioning:* Children's Global Assessment Scale (CGAS) clinician rated	Every 6 months for 18 months. Time 1—after 6 months of psychological support Time 2—after 12 months of psychological support for delayed eligible adolescents, and after 12 months of psychological support+6 months of puberty suppression for immediately eligible adolescents Time 3—after 18 months of psychological support for delayed eligible adolescents, and after 18 months of psychological support+12 months of puberty suppression for immediately eligible adolescents
Davidson *et al*,[37] UK	Single pre–post Open-ended survey questions Mixed methods design	2011	Gender diverse young people aged 12–18 who were attending GIDS	n=11 Mean age 16.27±1.1 years, range 15–18 years Birth-assigned sex: female (10), male (1)	None	Facilitated group drawing on variety of therapeutic techniques including CBT Setting: Specialist gender clinic for young people	*Subjective health and well-being:* Kidscreen-52 self report	Post group (after last session)
Hollinsaid *et al*,[38] USA	Secondary analysis of intervention group from 4 randomised controlled trials	2013, 2018, 2018, 2019	Clinically referred children and adolescents (age 7–15) determined to have a primary problem of anxiety, depression, conduct or trauma	Children and adolescents who endorsed a wish to be the opposite sex (n=64) Mean age 10.7 SD 2.3 Birth-assigned sex, n (%): female 31 (48.4), male 33 (51.6)	Children and adolescents who did not endorse a wish to be the opposite sex (n=368) Mean age 10.6 SD 2.2 Female (162), male (206)	Standard and Modular psychotherapy treatments (ESTs) Setting: Community mental health sites for young people	*Internalising and externalising symptoms:* Parent-rated Child Behaviour Checklist (CBCL) and self-reported Youth Self-Report (YSR)	A total of four evaluations over 18 months (at baseline, 6, 12, 18 months)
Lucassen *et al*,[39] New Zealand	Longitudinal cohort	April 2014 onwards for 5 years	Young people aged 12–19 with symptoms of depression (with a New Zealand IP address)	Self-identified transgender adolescents who completed registration (n=207) Age range 12–15 (131), 16–19 (76) Specific gender identity not reported—male, female or transgender-only options for participants	Self-identified male or female adolescents who completed registration (n=8872) Age range 12–15 (5522), 16–19 (3350) Female (5968), male (2904)	SPARX self-help CBT-based e-therapy Setting: online	*Depression:* Patient Health Questionnaire-9 modified for Adolescents (PHQ-A) self-report	Assessed at baseline (post module 1), at mid-point (post module 4) and post-intervention (post module 7)

Continued

Table 1 Continued

First author	Study design	Data collection	Intervention population*	Participants with gender dysphoria/ incongruence*	Comparator/control group*	Intervention and setting	Outcome and measurement	Time to follow-up(s)
Russon *et al*,[32] USA	Longitudinal pre–post analyses Pilot study	Date not reported	Adolescents or young adults who identify as a sexual and/or gender minority and have clinical levels of suicidal ideation and moderate depression	n=10 Mean age 18.2, range 15–25 years (half of sample <18) Majority of sample identified as transgender and gender diverse (8)	None	Attachment-based family therapy (ABFT) Settings: a gender service for children and young people and a community youth centre	*Suicidality:* Suicidal Ideation Questionnaire (SIQ-JR) self-report *Depression:* Beck Depression Inventory-II (BDI-II) self-report	Assessments collected at baseline and at weeks 1, 4, 8 and 16
Silveri *et al*,[40] USA	Longitudinal cohort study	Data analysed October 2019 to March 2021	Adolescents aged 13–17 seeking treatment for a psychiatric disorder	Self-identified transgender and gender diverse adolescents (n=35) Mean age 15.5 SD 1.5 Gender identity: transgender boys (9), transgender girls (2), gender non-conforming or gender queer (22), another gender identity (9) (seven participants endorsed more than one identity)	Self-identified cisgender adolescents receiving the intervention (n=165) Mean age 16.4 SD 1.5 Girls (76), boys (89)	Acute 2-week residential treatment (ART) programme Setting: Psychiatric hospital for young people	*Depression:* Centre for Epidemiologic Studies Depression Scale (CES-D) self-report *Anxiety*: Multidimensional Anxiety Scale for Children (MASC) self-report *Emotional dysregulation:* The Difficulties in Emotion Regulation Scale (DERS) self-report All completed under supervision of hospital staff	Assessment at 48 hours after admission and 48 hours before discharge Voluntary 1-month remote follow-up, added after the study began, so only a portion of participants had opportunity to complete follow-up assessment
Stevens *et al*,[41] USA	Longitudinal cohort	March 2010 to January 2015	Young people aged 15–24 years who self-identify as LGBTQ+ and who are experiencing housing instability, mental health and/or substance abuse treatment needs (non-LGBTQ+ young people with these problems who are allies of the LGBTQ+ population also eligible)	Transgender or gender non-conforming young people (n=17) Mean age 19.6 years (all participants) Gender identity: transgender (12), gender queer (3), poly-gendered (1), intersex (1)	Young people not identifying as transgender (n=153) Mean age 19.6 years (all participants) Female (76), male (77)	iTEAM—Affirming system of care management programme Setting: Community based	*Mental Health status (depression/ anxiety):* The Substance Abuse and Mental Health Services Administration's Client Outcome Measures for Discretionary Programmes Government Performance and Results Act (GPRA) (unclear whether self-report or professional report) *Self-acceptance:* Self- Acceptance Scale self-report	Assessment at 6 months post-intake and at discharge from intervention (up to 12 months later)

*The terminology from included studies to describe the included participants is used for accuracy of reporting.
CBT, cognitive behavioural therapy; LGBTQ+, lesbian, gay, bisexual, transgender, queer or questioning.

Table 2 Intervention characteristics

Study ID, country	Intervention and goals	Intervention content and structure	Mode of delivery	Modifications/adaptations
Allen *et al*,[33] Australia	First Assessment Single-Session Triage (FAAST) individual triage clinic for specialist gender service Aims to decrease wait time into service by providing initial assessment and triage, and to deliver information, education and support to gender questioning young people and their families.	Thirty-minute biopsychosocial assessment with young person using (Home, Education, Activities, Drugs, Sexuality and Suicide (HEADSS) framework. Followed by a joint consultation with the young person and primary caregiver(s) to provide information, education and support. Topics for discussion tailored to individual need. May involve onward referrals to relevant local community support services including mental health services, school support and peer support groups.	Individual format delivered face-to-face in single 90 min consultation session. Delivered by specialist nurse at specialist gender service.	Developed specifically for children and adolescents referred to specialist gender service.
Austin *et al*,[34] Canada	AFFIRM—Affirmative cognitive behavioural coping skills group intervention Aims to improve coping and reduce emotional distress using cognitive behavioural therapy (CBT) techniques that target underlying, problematic cognitions, and by promoting positive change and healthy coping via the creation of a safe, affirming and collaborative therapeutic experience.	Manualised intervention comprising eight modules that covered; 1. Introduction to CBT and understanding minority stress 2. Understanding the effect of anti-transgender attitudes and behaviours on stress 3. Understanding how thoughts affect feelings 4. Using thoughts to change feelings 5. Exploring how activities affect feelings 6. Planning to overcome counterproductive thoughts and negative feelings by building hope 7. Understanding the impact of minority stress and homo/transphobia on social relationships 8. Developing safe, supportive and identity-affirming social networks.	Group format (10 young people and two co-facilitators) delivered face-to-face over eight sessions (duration/frequency not reported). Facilitators had minimum 1 year of experience working with sexual and gender minority youth, with some history of using CBT-based interventions. Facilitators received 5 hours of training. Designed for delivery in a variety of community settings. Pilot delivered as weekend group retreat format.	CBT was adapted for youth with sexual and/or gender-minority identities. Intervention developed in partnership with a transgender-identified intern with expertise in developing identity-affirming and inclusive materials. Feedback from stakeholders also informed adaptations. Examples included using real-world examples relevant to the unique experiences of transgender youth to illustrate CBT strategies, addressing impact of transphobia and cisgenderism, creating affirming environment by using community centre with gender-neutral restrooms, gender-diverse staff, displaying events for gender-diverse people, etc.
Bluth *et al*,[35] USA	Mindful Self-Compassion for Teens (MSC-T) group intervention Aims to improve mental health and psychosocial outcomes using self-compassion training and mindfulness techniques.	Each session began with a brief mindfulness art activity to allow participants to settle in and orient themselves. The intervention included hands-on exercises, videos, games, mindful movement and music meditation. Home practice was encouraged to reinforce techniques. Eight sessions covered; 1. Introduction to concepts of mindfulness and self-compassion. 2. Paying attention on purpose—concept of mindfulness and wandering mind; mindful eating. 3. Loving kindness practice is introduced; adolescent brain development. 4. Self-compassion exercise to encourage young people to challenge the inner critic with a compassionate voice. 5. Self-compassion vs self-esteem—exploring differences between these and perils of social comparison. 6. Living deeply—core values exercise; giving and receiving meditation. 7. Managing difficult emotions—soften, soothe, allow practice introduced; tools to contend with anger and unmet needs are practiced; two developing systems of the adolescent brain explained. 8. Embracing your life with gratitude—gratitude and self-appreciation practices; wrap-up of course via writing an online letter to oneself to be delivered a month later.	Group format delivered online via Zoom over 8 sessions of 90 min in duration. First cohort delivered over 8 days (one session per day) in the summer holiday, second cohort twice weekly in the evenings for 4 weeks. Delivered by two trained MSC-T instructors.	Modifications to MSC-T, which was developed for all teenagers, were made to accommodate needs of transgender adolescents. An example reported was omitting the body scan in case bringing attention to body parts was triggering. No other information was provided.

Continued

Table 2 Continued

Study ID, country	Intervention and goals	Intervention content and structure	Mode of delivery	Modifications/adaptations
Costa *et al*,[36] UK	Psychosocial support is provided within specialist gender services for children and adolescents Aims to improve psychosocial functioning.	Starts with standardised psychological assessment of gender dysphoria and identity, and psychosocial difficulties. Individual needs are met using various psychotherapeutic interventions ranging from individual to family and group therapy. Social and educational interventions are also provided if necessary.	Individual, family or group format delivered face-to-face depending on need. Carried out regularly (at least once a month). Provided for duration of study (up to 18 months). No other details provided. Delivered by staff working in specialist gender service (no other details provided).	Developed specifically for children and adolescents referred to specialist gender service.
Davidson *et al*,[37] UK	Structured therapeutic peer-support group for young people attending specialist gender service Aims to explore young people's difficulties in the context of their social systems and to provide concrete strategies to help them in their interpersonal relationships, prepare them for gender transitions, sustain hope and manage challenging emotions.	Multiple therapeutic techniques were used—CBT and systemic therapy were predominant approaches. Nine didactic and interactive sessions covered; 1. Establishing safety and a connection. 2. Managing worry and anxiety. 3. Managing low mood (including managing self-harm and suicidal feelings). 4. Dealing with frustration and anger. 5. Considering peer relationships (including responding to bullying). 6. Considering family relationships. 7. Considering intimate relationships and sexual health. 8. Considering different identities: perspectives from a transman, a transwoman and someone identified as non-binary/gender fluid. 9. Consolidating the learning. Each theme was problem oriented, with members encouraged to provide real-life examples from their own experiences in pairs, before feeding back to the larger group, where connections between experiences were made. Later in the session emphasis shifted to participants sharing solution focused strategies they found useful in addressing the issues.	Group format delivered face-to-face over 9 weekly sessions of 90 min in duration. Co-facilitated by three staff from the gender service (consultant clinical psychologist, trainee clinical psychologist, research psychologist). Specialist gender service setting—details not reported.	Developed specifically for young people referred to specialist gender service.
Hollinsaid *et al*,[38] USA	Standard and modular empirically supported psychotherapy treatments (ESTs) Aims to treat depression, anxiety, trauma or conduct problems using a range of therapeutic approaches matched to a child's primary problems.	Modular ESTs utilised a multidiagnostic framework—The Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, or Conduct Problems (MATCH) that included treatment procedures from various ESTs, including CBT and behavioural parent training to individualised treatment for a young person's main problems over time. MATCH therapists chose and sequenced intervention components from 33 modules grouped across protocols for anxiety, depression, trauma and conduct problems. Examples include psychoeducation for anxiety or behavioural activation for depression. Standard ESTs used the same content but intervention components were delivered sequentially based on the young person's primary problems.	Individual format delivered face-to-face. Intervention duration and session numbers varied depending on treatment modules offered. Duration ranged from 8 to 589 days. Number of sessions ranged from 1 to 87. Delivered by trained therapists in community-based mental health clinics.	No modifications for gender diverse/incongruent participants.
Lucassen *et al*,[39] New Zealand	SPARX—Video game-based e-therapy Aims to provide a computerised cognitive behavioural therapy programme for the treatment of depression in adolescents.	Self-help cognitive behavioural therapy online game which involved participants joining a virtual fantasy world with a personalised avatar and embarking on a mission to rid the world of gloom. Completed over seven modules, each comprising a challenge to complete and including a direct teaching component where a core CBT skill is applied to the user's real-life context. Users aim to gain six 'gem stones' for their shield against depression, which correspond to CBT techniques taught in the modules. Homework tasks allow practice and facilitate skill generalisation. A 'Guide' or 'virtual therapist' introduces each module and reviews the content covered when completed. CBT techniques included relaxation training, behavioural activation, social skills training, naming cognitive distortions, problem-solving and cognitive restructuring.	Each of the seven modules designed to take around 30 min to complete.	No modifications for gender diverse/incongruent participants.

Continued

Table 2 Continued

Study ID, country	Intervention and goals	Intervention content and structure	Mode of delivery	Modifications/adaptations
Russon *et al*,[32] USA	Attachment-Based Family Therapy (ABFT) Aims to repair damage in the adolescent-caregiver attachment relationship and establish or resuscitate a secure, family-based environment. Provides an interpersonal, process-oriented, trauma-focused approach to treat depression, suicidality and trauma in LGBTQ+ youth.	Manualised therapy consisted of five treatment tasks that encouraged young person to take developmentally appropriate responsibility and challenged parents to find the right balance of support and encouragement. 1. Relational reframe (one session) helps move family from a focus on young person's symptoms to improvement in parent(s)–child relationship. 2. Adolescent alliance-building task (two to four sessions), exploring adolescent's strengths and interests, ruptures in attachment security that impact mental health and inhibit the adolescent from turning to parents for support. 3. Build alliance with the parents (two to four sessions)—discussion of parents' own history of attachment ruptures and current stressors that may impact parenting. 4. Attachment task (one to four sessions)—the central mechanism of therapy is to generate a 'corrective attachment experience' in which the young person expresses grievances in a more regulated manner and receives empathy and understanding from parents. 5. Autonomy-promoting task (one to ten sessions)—helping family members practice new relational skills, consolidating newly formed secure base. Attention shifts to promoting the adolescent's autonomy and/or focus on other causes of depression/suicide.	Individual format delivered face-to-face over 16 weeks with weekly sessions (three participants continued to 20–24 weeks). Session duration not reported. Delivered by trained ABFT therapists who were supervised by the lead therapist. Delivered within LGBTQ+ focused community organisations.	Modified for LGBTQ+ adolescents and young adults based on interviews with key stakeholders. The following changes were reported: 1. More individual sessions with young person before family therapy to build alliance. 2. Increased number of meetings with caregivers who showed rejecting behaviours to reduce anxiety and anger before family sessions. 3. Advocacy role for therapists with external systems of care (eg, schools and clinicians) about the needs of LGBTQ+ young people. 4. Discussed minority stressors and discrimination with parents to increase empathy for child's struggles.
Silveri *et al*,[40] USA	Acute residential treatment (ART) insurance-based programme Aims to reduce clinical psychiatric symptoms in young people.	Milieu-based treatment, comprised of cognitive behavioural therapy, dialectical behavioural therapy, motivational interviewing and individual, group and family therapy. Assessment by a psychiatrist twice a week and medical interventions introduced if deemed necessary.	Individual, family or group format delivered face-to-face over approximately 2 weeks (no other details provided). Delivered in residential setting (no other details provided).	No modifications for gender diverse/incongruent participants.
Stevens *et al*,[41] USA	iTEAM—Affirming system of care community intervention Aims to promote affirming forms of self-acceptance, increase self-esteem, lower psychological distress and mediate negative effects of discrimination in LGBTQ+ youth.	Used a system-of-care framework involving a co-ordinated network of multiple relevant agencies. Following an intake assessment, young people were assigned a case manager who provided on-going support and introduced iTEAM affirming services and provided referrals to other community-based services. iTEAM services included: Strength-based case management. Motivational Enhancement Therapy and Cognitive Behavioural Therapy. Street Smart (sexual health education intervention). Crisis and mental health counselling/therapy. Education and employment services. Direct enrolment in local housing programmes. Group-based services and activities.	Case management delivered individually face-to-face at least three times weekly during first 3 months and then reduced based on clinical need for additional 3–4 months. Delivered by case managers at the iTEAM programme site. Other intervention components also delivered at iTEAM programme site. Mode of delivery, duration and frequency of other elements not reported.	System-of-care framework model was adapted for LGBTQ+ youth. Adaptations included a welcoming space, LGBTQ+ pro-social activities; staff who were representative of multiple identities; on-going training provided for staff and volunteers with regard to affirming care for this population. Services involved in providing care were also adapted to address specific needs of LGBTQ+ youth, for example, family rejection, work-place discrimination.

CBT, cognitive behavioural therapy; LGBTQ+, lesbian, gay, bisexual, transgender, queer or questioning.

computerised CBT programme had seven modules, each taking around 30 minutes to complete.[39]

Intervention adherence was reported for the three group-based and family therapy interventions (100% completion,[32 34] 79% full attendance,[37] 73% retention[35]) and for the computerised CBT programme (53.6% completed module 1 but only 2.4% completed all seven).[39]

When studies were assessed against the TIDieR framework, the most comprehensive information was provided on intervention name/label, rationale/aims and mode of delivery, with varying detail on intervention procedures, setting and tailoring. The least detail was provided on intervention materials, facilitator expertise and training and whether modifications were made during study delivery (see table 3 for summary of TIDieR assessment).

Study quality

Nine studies were rated as low quality and one as moderate quality[32] (see table 4 for critical appraisals). Limited reporting of recruitment methods meant it was difficult to determine how representative samples were of the target population. Three studies had no control or comparator group,[32 35 37] and for others, the comparator was not always appropriate. Across the studies, significant confounding factors were not accounted for within the analysis. Other methodological issues included a small sample used for analysis,[32 34 35 37 39–41] and reliance on self-report or a proxy indicator of gender dysphoria/incongruence or gender identity, rather than a validated and widely used assessment tool.[38–41] There was also a lack of information about what happened to participants who dropped out,[36 39] and several interventions were single site, limiting potential generalisability.[33 34 36 37 40]

Synthesis of results

Eight studies reported outcomes related to mental health,[32–35 38–41] five to psychological changes[33–35 37 41] and five to psychosocial or healthcare changes.[33 35–37 41]

Mental health outcomes

Measures of depression were reported in six studies.[32–35 39 40] All six studies focused on within-group changes either at a single[33 39] or multiple[32 34 35 40] post-intervention timepoints. Four studies found significant reductions in depression levels post-intervention[33–35 40] and/or at a later timepoint (3 months[34 35]; 1 month[40]). Two studies found non-significant differences in depression levels during mid-treatment[32] and/or post-intervention.[32 39] Two studies provided comparisons with control groups (historical controls who did not receive the intervention[33]; adolescents not experiencing gender dysphoria/incongruence who received the same intervention[40]). One had a single timepoint post-intervention[33] and the other had multiple post-intervention timepoints.[40] One study compared the proportion of participants reaching borderline or clinical depression scores following an intervention, comparing children/adolescents experiencing gender dysphoria/incongruence with historical controls. The study reported significant reductions for those receiving the intervention in self-report but not caregiver-report measures.[33] The study comparing adolescents experiencing gender dysphoria/incongruence with those not experiencing gender dysphoria/incongruence found no significant difference between groups over time in self-reported and caregiver-reported depression levels.[40]

Measures of anxiety were reported in three studies.[33 35 40] All three reported within-group changes either

Table 3 TIDieR (Template for Intervention Description and Replication) assessment

Study ID	(Brief name) Provides name or phrase that describes the intervention	(Why) Describes the rationale, theory or goal of the intervention	(What) Materials: Describes information materials provided to participants before or during delivery or used to train providers	(What) Procedures: Describes the procedures, activities and processes used in the intervention	(Who) Describes the expertise of and specific training given to intervention providers	(How) Describes the modes of delivery (eg, face-to-face, internet) and whether it was provided individually or in a group	(Where) Describes the location(s) where the intervention occurred, including any infrastructure or relevant features	(When and how much) Describes the number of times intervention was delivered, over what period and number, schedule and duration of sessions	(Tailoring) If tailored/ personalised, describes how the intervention was adapted/developed for children with gender dysphoria/ incongruence	(Modifications) If modified during study, describes changes made to the intervention (including the what, why, when and how)
Allen *et al*[33]	Full	Full	None	Partial	Partial	Full	Partial	Full	Partial	None
Austin *et al*[34]	Full	Full	None	Full	Partial	Partial	Partial	Partial	Full	None
Bluth *et al*[35]	Full	Full	None	Full	Partial	Full	Partial	Full	Full	None
Costa *et al*[36]	Full	Full	None	Partial	Partial	Partial	Partial	None	Partial	None
Davidson *et al*[37]	Full	Full	None	Full	Partial	Full	Partial	Full	Full	None
Hollinsaid *et al*[38]	Full	Full	None	Partial	Partial	Partial	Partial	None	*	None
Lucassen *et al*[39]	Full	Full	None	Partial	†	Full	Partial	Full	*	None
Russon *et al*[32]	Full	Full	None	Full	Partial	Partial	Partial	Partial	Full	None
Silveri *et al*[40]	Full	Full	None	Partial	Partial	Partial	Partial	Partial	*	None
Stevens *et al*[41]	Full	Full	None	Partial	None	Full	Partial	Partial	Partial	None

*Study assessed whether intervention offered to the general population was suitable for children and/or adolescents experiencing gender dysphoria/incongruence without modifications.
†No provider—virtual online platform.

Table 4 MMAT assessment

Study ID	Screening questions		Non-randomised studies					Overall quality; low (0–2 criteria met); medium (3 criteria met); high (4–5 criteria met)
	S1. Clear research questions?	S2. Does the data collected address the research questions?	1. Are participants representative of the target population?	2. Measurements appropriate re-outcome and intervention?	3. Complete outcome data (>80%)?	4. Confounders accounted for in design and analysis?	5. Intervention administered as intended?	
Austin *et al*[34]	Yes	No	Can't tell	Yes	No	No	Can't tell	Low
Costa *et al*[36]	Yes	Yes	Can't tell	Yes	No	No	Can't tell	Low
Hollinsaid *et al*[38]	Yes	Can't tell	Can't tell	Yes	Can't tell	No	Can't tell	Low
Lucassen *et al*[39]	Yes	Yes	Can't tell	Yes	No	No	Can't tell	Low
Russon *et al*[32]	Yes	Yes	Can't tell	Yes	Yes	No	Yes	Medium
Silveri *et al*[40]	Yes	Yes	Can't tell	Yes	No	No	Can't tell	Low
Stevens *et al*[41]	Yes	Yes	Can't tell	Yes	Can't tell	No	Yes	Low

			Mixed methods studies							
Study ID	S1. Clear research questions?	S2. Does the data collected address the research questions?	1. Adequate rationale for using mixed methods design?	2. Are qual/quant components effectively integrated?	3. Outputs of the integration of qual/quant components adequately interpreted?	4. Inconsistencies between qual/quant results adequately addressed?	5. Do qual/quant components both meet quality criteria of both methods?	QUAL component overall quality score	QUANT component overall quality score	Overall quality; low (0–2 criteria met); medium (3 criteria met); high (4–5 criteria met)
Allen *et al*[33]	Yes	Yes	Yes	No	Yes	No	No	Low	Low	Low
Bluth *et al*[35]	Yes	Yes	Yes	No	No	Yes	No	High	Low	Low
Davidson *et al*[37]	Yes	Yes	Yes	Can't tell	No	Yes	No	Low	Low	Low

MMAT, Mixed Methods Appraisal Tool.

at a single[33] or multiple[35 40] post-intervention timepoints. All three studies found significant reductions in anxiety levels post-intervention.[33 35 40] One study found significant reductions at a later timepoint (1 month[40]) and one did not (3 months[35]). The same two studies that provided comparisons with control groups for depression also did this for symptoms of anxiety (historical controls[33]; adolescents not experiencing gender dysphoria/incongruence[40]). The study including a historical control group found significantly greater reductions in self-reported but not carer-reported anxiety among those receiving the intervention.[33] The final study found no significant difference between groups (those experiencing and not experiencing gender dysphoria/incongruence) over time in anxiety levels.[40]

Two studies provided a combined mental health outcome.[38 41] One study looked at within-group changes in mental health issues (anxiety or depression in past 30 days) and found no significant, although marginal, difference from baseline to 6 months.[41] The second study measured internalising and externalising symptoms, comparing children and adolescents experiencing and not experiencing gender dysphoria/incongruence. The study found similar improvements between groups over time in self-report and caregiver report for internalising symptoms and in self-report for externalising symptoms. The caregiver report for externalising symptoms showed slower improvement among those experiencing gender dysphoria/incongruence compared with the control group. A significantly greater proportion of the participants experiencing gender dysphoria/incongruence had clinically elevated internalising problems post-intervention compared with those not experiencing gender dysphoria/incongruence.[38]

One study looked at emotional dysregulation. This found significant reductions post-intervention and at a later timepoint (1 month), but no significant differences between adolescents experiencing and not experiencing gender dysphoria/incongruence over time.[40]

Three studies evaluated the impact of the psychosocial intervention on suicidality and related outcomes.[32 33 35] Two studies found significant decreases in suicidality scores,[32] thwarted belongingness[35] or perceived burdensomeness[35] from baseline to mid-treatment[32] and/or post-intervention[32 35] and/or at a later timepoint (3 months[35]). One study found no difference in the proportion of patients at high suicide risk before and after the intervention (nurse triage; median time pre–post was 259 days).[33]

Psychological changes

Five studies focused on psychological changes[33–35 37 41]: three explored relationships quantitatively[34 35 41] and four reported qualitative findings.[33–35 37] For resilience,[35] self-compassion[35] and self-acceptance,[41] there were significant increases in scores between baseline and post-intervention,[35] and between baseline and 3 months for self-compassion[35] and 6 months for self-acceptance,[41] but the difference was no longer observed for resilience at 3-month follow-up (although it was of marginal significance).[35] No significant differences were found in coping scores between baseline and post-intervention or between post-intervention and a later timepoint (3 months[34]).

In the studies that reported qualitative data about perceived effects, participants reported more positive coping and problem-solving[34 35 37] and increased confidence.[33 37] Participants also talked about being more comfortable and accepting of their identity,[33 35 37] having a better sense of self and self-worth,[33 35] and reduced feelings of isolation and distrust towards others.[35 37] These changes were reported to contribute to the adolescents having more agency over their lives in one study,[33] increased life satisfaction in another[35] and a different outlook in three studies,[33 35 37] including more positivity and certainty about the future. In the group-based interventions, being able to talk openly with and learn from others about gender issues in a safe and supportive environment was reported to contribute to these positive outcomes[34 35 37]; whereas in the triage intervention, receiving information about what is available to them in terms of transition-related interventions was reported as a key mechanism leading to change.[33]

Psychosocial and other changes

Five studies focused on psychosocial changes[33 35–37 41]: all explored relationships quantitatively and three also reported qualitative findings.[33 35 37]

Three studies found significant improvements in quality of life/global functioning/well-being post-intervention[33 35 36] and/or at later timepoints[36]; however, for well-being the significant difference was no longer observed at 3 months.[35] One study found no significant differences in well-being scores (physical and psychological) before and after receiving the intervention.[37]

One study evaluated the impact of a single assessment and triage appointment in which information and signposting support was given to young people and families on a waiting list for a paediatric gender service. Clinical measures and qualitative interviews looked at rates of depression, anxiety, quality of life and access to health professional input and medication use, as well as knowledge relating to social transition, perceived support from social networks and family functioning.[33] In the group who had received the single session intervention, there were improvements in mental health and well-being measures, family functioning was found to be significantly improved, and there were higher rates of social transition and knowledge about social transition. There was no significant change to participants' reports of social support, no changes seen in access to broader healthcare input and overall safety had not increased. Significantly more birth-registered females had commenced medication to suppress menstruation having been signposted to information relating to this.[33]

Significant improvements were also recorded, 6 months post-intake, for measures of employment and housing stability, in participants of a community system of care intervention.[41]

In the studies that reported qualitative data pertaining to perceived effects, participants reported having better peer relationships and increased acceptance and/or support from peers (from meeting and forging relationships with others in the same situation).[35 37] Some participants reported increased parental support or acceptance, while others did not.[33]

DISCUSSION

There is limited research evaluating the outcomes of psychosocial interventions for children and adolescents experiencing gender dysphoria/incongruence. Low study quality and inadequate reporting in the 10 studies included limit any firm conclusions about their effects. Selection criteria for participation were not clearly defined, a range of different interventions were used, studies included heterogeneous measurements of different treatment outcomes and lacked appropriate comparators. This review highlights that to date there has been a lack of robust research and inadequate methodologies have been used to assess the effects of psychosocial interventions for children and adolescents experiencing gender dysphoria/incongruence.

Assessed interventions included those developed specifically for children and/or adolescents experiencing gender dysphoria/incongruence,[33 36 37] interventions developed or adapted for gender and sexual minority youth,[32 34 41] and broader psychological interventions for adolescents with mental health difficulties either partially modified for those experiencing gender dysphoria/incongruence[35] or with no tailoring.[38–40] Only three were designed for children and/or adolescents referred to a specialist gender service and these varied considerably: one being a structured CBT and systemic theory-informed peer support group delivered over 8 weeks,[37] one a specialist single session nurse-led triage clinic[33] and one comprising the range of psychosocial support provided by a paediatric gender service.[36]

Low study quality, inadequate reporting of intervention details and heterogeneity of interventions and their aims and outcome measurement prevented comparison of the different types of interventions identified or of different psychological approaches.

Similar results were reported across studies, which showed either benefit or no change with no indication of adverse or negative effects. This result suggests that existing evidence-based interventions tailored for children and/or adolescents with gender dysphoria/incongruence as well as those developed explicitly for this population have the potential to result in positive outcomes. However, there remain unanswered questions about which specific approach works best, for whom and in what circumstances, and the acceptability and feasibility of these different approaches. There is also limited understanding of how psychosocial interventions might support a reduction of gender-related distress and the sorts of interventions that might be most suitable for prepubertal children and for adolescents with more complex needs.

Strengths and limitations

Strengths include a published protocol with robust search strategies and comprehensive synthesis. As searches were conducted to April 2022 this review does not include more recently published studies; as this is a rapidly evolving area this is a limitation.

CONCLUSIONS

There is limited research evaluating outcomes of psychosocial interventions for children and adolescents experiencing gender dysphoria/incongruence, and low quality and inadequate reporting of the studies identified. Therefore, firm conclusions about their effects cannot be made. Most analyses of mental health, psychological and/or psychosocial outcomes showed either benefit or no change, with none indicating any negative/adverse effects of the interventions offered. Identification of the core approach and outcomes for these interventions would ensure they are addressing key clinical goals, attending to the needs of children and families as well as supporting future aggregation of evidence. More robust methodology and reporting is required.

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ORCID iDs
Jo Taylor http://orcid.org/0000-0001-5898-0900
Stuart William Jarvis http://orcid.org/0000-0001-8447-0306
Catherine Elizabeth Hewitt http://orcid.org/0000-0002-0415-3536

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