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REVIEW ARTICLE

Puberty Blockers for Children: Can They Consent?

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Gender dysphoria is a persistent distress about one's assigned gender. Referrals regarding gender dysphoria have recently greatly increased, often of a form that is rapid in onset. The sex ratio has changed, most now being natal females. Mental health issues pre-date the dysphoria in most. Puberty blockers are offered in clinics to help the child avoid puberty. Puberty blockers have known serious side effects, with uncertainty about their long-term use. They do not improve mental health. Without medication, most will desist from the dysphoria in time. Yet over 90% of those treated with puberty blockers progress to cross-sex hormones and often surgery, with irreversible consequences. The brain is biologically and socially immature in childhood and unlikely to understand the long-term consequences of treatment. The prevailing culture to affirm the dysphoria is critically reviewed. It is concluded that children are unable to consent to the use of puberty blockers.

KEYWORDS gender identity, puberty blockers, gender dysphoria, consent in children

Introduction

Consent to treatment is an important principle in medical ethics (Brazier and Cave 2016). After the landmark case of Gillick (Gillick V West Norfolk and Wisbech AHA 1986) some children are allowed to give consent without parental permission or knowledge. The question explored here is whether, in cases of childhood gender dysphoria (GD), a child could have the competence to consent to receiving Puberty Blockers (PBs), which prevent the normal process of puberty and which have potentially irreversible and radical consequences for the child's future.

The issue of consent for PBs came to the fore in the 2020 High Court case (Bell & Mrs AV Tavistock and Portman NHS Trust 2020) brought by Keira Bell against the

Gender Identity Development Service (GIDS) of the Tavistock Clinic, the main U.K. provider of PBs.

This review focuses on the Bell judgement and other recent case law as well as the medical literature on GD.

Gender dysphoria and the use of puberty blockers

The prescribing of puberty blockers (PBs) for children with GD is highly contentious and has polarized views among both clinicians and bioethicists (Dyer 2020, McGregor and Phillips 2021).

In the past, PBs were primarily used to treat precocious puberty but more recently they have, increasingly, been given to children presenting with GD.

Can a young person under the age of 16 appreciate the long-term effects of taking PBs and make an informed decision? Is the use of PBs experimental, as some experts maintain (Bell 2020, Malone *et al.* 2021) and if so, should the uncertainties surrounding their long-term effects prohibit their use in this age group until we know more? Or are they a life-saving treatment which prevents those with GD from going through what they feel is the agonizing fate of puberty, with all that it means, as their body grows into the gender which they believe is not truly theirs?

Gender dysphoria (GD)

In order to understand the role of PBs, it is important first to examine the nature of GD.

The word gender is often misunderstood, and its meaning is disputed (Mazzuca *et al.* 2020). The Oxford English Dictionary (2002, p. 590) gives the following definition: ‘The state of being male or female (chiefly in cultural or social contexts)’. This means that a person’s gender, the sex they identify with, may differ from their sex assigned at birth.

However, such a view of gender is disputed by those who feel that biological, assigned gender, is immutable (apart from rare and complex cases of Intersex). One such ‘sex essentialist’, Maya Forstater, won an appeal against her employer for having the right to question if a trans person could change their sex (Maya Forstater V CGD Europe and others 2021).

The condition of GD in children is described by the American Psychiatric Association (2013) in its classification of diseases (DSM-V5) as: ‘A marked incongruence between one’s experienced/expressed gender and assigned gender, lasting at least 6 months ...’

The International Classification of Diseases (ICD) calls the condition ‘Gender identity disorder of childhood’ and specifically describes this condition in children, before puberty as: ‘Persistent and intense distress about assigned sex, together with a desire to be (or insistence that one is) the other sex’ (ICD 2016).

The American Psychiatric Association introduced the term ‘Gender dysphoria’ in 2013 in its DSM-5 classification, removing the word ‘disorder’ which was thought to carry too much stigma.

There is uncertainty in the literature about whether GD is indeed a variation of ‘normal’ or some form of biological/pathological condition (Yildirim 2017).

Referrals for children with gender dysphoria have markedly increased in the past 10–15 years (Zucker 2017) and it is possible to ask how much this is due to the increased availability of gender clinics and the acceptance of the condition. However, the evidence, examined in this review, shows that there is a considerable and real increase in cases that is not simply due to acceptance.

The Diagnostic and Statistical Manual (DSM-5) gives expected prevalence rates of gender dysphoria at 0.005% to 0.014% of the population for natal males, and 0.002% to 0.003% for natal females, based on referrals for GD in 2013 (American Psychiatric Association 2013).

However, a survey of teenagers in 2017 (Centers for Disease Control 2017) showed that 1.8% of high school children in the U.S.A. in that year identified as transgender. This is at least 200 times the prevalence stated in DSM-5.

There were 138 children referred to the Tavistock clinic in London in 2010–2011 but in 2018–2019, 2743 were referred (Gender Identity Development Service 2021) – an increase by a factor of 20 in just 8 years.

Also of considerable interest is the sex ratio of those who present with childhood GD. The DSM-5 manual states, natal males greatly predominated in the recent past. However, natal females now far outweigh the number of natal males. At the Tavistock, in 2011 the gender split was 50/50 whereas in 2019 76% of those referred to the clinic were female (Bell v Tavistock 2020, para 32).

Littman (2018) did a detailed survey of 256 parents whose children presented with a form of rapid onset GD. 82.8% were girls. She describes an increased incidence in what she called ‘Rapid Onset Gender Dysphoria’ (ROGD). Whereas previously most cases of GD showed evidence in early childhood, Littman found that young people, around the time of puberty, were declaring unhappiness with their assigned gender suddenly, with no prior expressed gender dissatisfaction.

Homosexual orientation seems to be a factor strongly associated with GD. A high proportion of those with GD express attraction to their natal sex (Steensma *et al.* 2011). Littman (2018) found that 41% of children with GD had expressed non-heterosexual orientation before presentation.

Desistence rates

The percent of those presenting with GD, who do not have medical treatment and who later desist (change to accepting their birth assigned sex) is thought to be over 80% (Steensma *et al.* 2013, p. 582). They state:

To date, the prospective follow-up studies on children with GD, for whom the majority would meet DSM-IV diagnostic criteria for Gender Identity Disorder (GID) collectively reported on the outcomes of 246 children. At the time of follow-up in adolescence or adulthood, these studies showed that, for the majority of children (84.2%; $n = 207$), the GD desisted.

Zucker writes (2020, p. 36): ‘... if one peruses carefully the follow-up of young children with gender dysphoria (or traits of gender dysphoria), the majority of

such children do not have gender dysphoria when followed up in adolescence or adulthood.’

The Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-V) states: ‘Rates of **persistence** of gender dysphoria from childhood into adolescence or adulthood vary. In natal males, persistence of GD has ranged from 2.2% to 30%. In natal females, persistence has ranged from 12% to 50%’ (American Psychiatric Association 2013, p. 455)

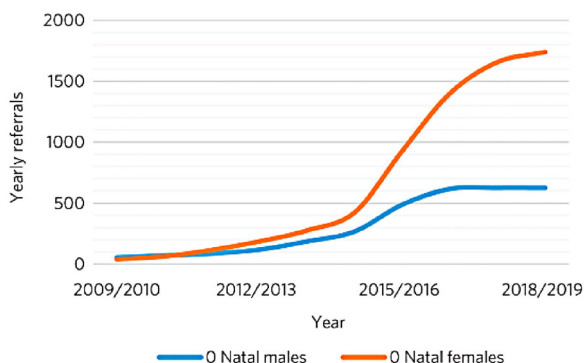
This high desistance rate is crucially important when considering appropriate treatment. Blocking puberty, in theory may be preventing the role of hormonal changes in the usual pattern of desistance of GD. There is also the question of whether medicalizing the dysphoria and formally affirming it may itself reduce the desistance rate.

Information on desistance rates is from historical studies, based predominantly on a cohort of mainly younger natal males. We need more studies now relating to the huge increase in teenage girls who present with GD.

Information on desistance rates without puberty blockade should be given to children and parents prior to seeking consent for PBs.

Rapid onset gender dysphoria (ROGD)

Referral rates to the Gender Identity Development Service at the Tavistock Centre (Tavistock and Portman (Gender Identity Development Service 2020))



Following a surge in 2015, the referral of girls to the Tavistock GIDS has continued to rise, with a slight dip in 2020, likely related to the Covid pandemic and the Keira Bell judgement.

Many gender clinics have been aware of a large increase in children presenting suddenly with GD without prior mention of any such dysphoria and without the usual evidence in early childhood of preference for the opposite gender’s clothes and activities. Bernadette Wren, when associate director of the Tavistock and Portman NHS Foundation Trust’s Gender Identity Development Service (GIDS), told a U.K. Parliament House of Commons select committee that: ‘many of the young people, and increasing numbers of them, have had a gender-uncontentious childhood, if you like, and it is only when they come into puberty and post-

puberty that they begin to question. That now represents a substantial number of our group' (Women and Equalities Committee 2015).

In her study, Littman recruited volunteer parents through 3 websites about GD. Specifically, she asked for parents who had children with GD that had been expressed suddenly, during or after puberty, to voluntarily complete a 90 question survey. She obtained 256 responses. The following are some of the important findings:

- 82.8% were natal females.
- Mean age when announcing GD = 15.2 years.
- 41% had expressed non-heterosexual orientation before identifying with GD.
- 62.5% had a diagnosis of at least one mental health disorder or neurodevelopmental disorder (such as autism) before the onset of GD.
- 36.8% had friendship groups in which the majority had identified as transgender.
- 47.2% had a decline in mental health after expressing GD.
- 57.3% had a decline in parent-child relationship after expressing GD.
- 25% stopped spending time with non-transgender friends.
- 49.4% tried to isolate themselves from their families.
- 46.6% were reported by parents to only trust information from transgender sources.
- 86.7% of the young people after expressing GD showed:
 - An increase in social media/ internet use OR
 - belonged to a friendship group in which 1 or multiple friends had identified as transgender within the same time frame. Or both 1 and 2.

Littman's conclusions hypothesized that there was a new sub-category of GD which presented rapidly. Though there is opposition to accepting that any such separate category exists (Ashley and Baril 2018), her data does show that rapid onset of GD occurs, mainly in girls, around the time of puberty. ROGD is a clearly observed phenomenon but is not currently a recognized medical condition.

Prior to Littman's study, most of the research into childhood dysphoria had been on those who had evidence of GD in early childhood and so her research gives us new insight into what may be some of the reasons why GD is so much more common now than a decade ago.

Of particular interest is the fact that 36.8% had friendship groups in which the majority had identified as transgender. Within such friendship groups, the average number of individuals who identified as transgender was 3.5 per group. Littman's study showed much evidence of increased use of social media and internet around the time of onset of GD. 60.0% of the friend groups were known to mock people who were not transgender. There was also strong evidence that if a child then decided they were not transgender after all, they experienced serious problems subsequently with being branded as a fake or a traitor. This necessitated moving to different schools in some cases.

Mental health disorders and autism prior to taking PBs

Littman's study (2018) also recorded that of the 256 parental reports, 62.5% of the children had a diagnosis of at least one mental health disorder or neurodevelopmental disorder (such as autism) before the onset of GD.

That there is a high proportion of autism in those presenting with GD is confirmed in a study by Hisle-Gorman *et al.* (2019). They studied 48,762 children with diagnosed Autistic Spectrum Disorder (ASD) who they found were over four times as likely to be diagnosed with GD compared with matched controls.

A study from the Hamburg Gender Identity Service (Hebly *et al.* 2020) showed that before any treatment, for children with GD: 'At baseline, both psychological functioning and quality of life scores were significantly below the normal mean for all intervention groups.'

Bechard *et al.* (2017) looked at psychosocial and psychological vulnerabilities in 50 consecutive referrals of adolescents diagnosed with GD. The mean number of psychosocial/psychological vulnerability factors present was 5.56. In addition, they showed that:

- Over half the sample had six or more vulnerabilities.
- 80% had had some form of prior outpatient assessment for psychosocial or psychological problems.
- 22% had been inpatients for such problems.
- 54% had been on psychopharmacologic medication.
- 34% had dropped out of school.
- 62% had had suicidal ideation.
- 36% had self-harmed.
- 20% had a history of physical abuse.
- 10% had a history of sexual abuse.

They also pointed out that, a large percentage of adolescents referred for GD '... have a substantial co-occurring history of psychosocial and psychological vulnerability' (p. 685). What this means is that when a young person is referred to a gender clinic with possible GD, an initial proper assessment and management of that person's mental and psychosocial health should be undertaken, before any affirmation or treatment for GD is considered.

By examining a broader range of psychosocial and psychologic vulnerability factors, our data appear to demonstrate a 'proof of principle' that supports the importance of a comprehensive psychologic/psychiatric assessment that goes beyond an evaluation of gender dysphoria per se. (Bechard *et al.* 2017, p. 685)

Of course, this very high prevalence of psychological problems begs the question: which comes first, the mental health issues or the GD? Bechard *et al.* (2017)'s study strongly suggests that in the aetiology of adolescent GD, prior psychosocial and psychologic factors are very significantly implicated. This is supported by the increasing incidence of ROGD which, because it manifests rapidly, only presents itself after the mental health problems.

The evidence suggests that rather than immediately affirming the GD and seeking consent for PBs, the mental health problems which are individual to each child should be addressed first. This is particularly important in the context of assessing a child's ability to consent.

Social media and peer influences

Social and peer contagion are established academic terms which need to be explored in this context. The word 'contagion' is not linked to the use of the term in infectious disease, nor is it to be seen as a value judgment. Sutherland (1995, p. 431) defines social contagion as 'the spread of ideas, feelings and, some think, neuroses through a community or group by suggestion, gossip, imitation etc.' Peer contagion is where an individual and their peers mutually influence one another promoting beliefs and behaviours that can sometimes cause harm.

Dishion and Tipsword write (2011, p. 189) 'Evidence suggests that children's interactions with peers are tied to increases in aggression in early and middle childhood and amplification of problem behaviors such as drug use, delinquency, and violence in early to late adolescence.'

They also state: 'Social network analyses suggest that peer contagion underlies the influence of friendship on obesity, unhealthy body images, and expectations.'

Peer contagion is well known in influencing young people with regard to anorexia nervosa, providing a parallel to the situation with GD. Writing about anorexia nervosa, Allison *et al.* state (2013, p. 116): 'Within the peer group, nothing is more contagious than a behavioural example from a popular or influential friend' and 'Young people actively and competitively pursue crafted, thin, bodies which bestow unprecedented levels of symbolic capital in the contemporary peer group.'

Schwartz-Mette and Rose (2012) researched what they term 'co-rumination' among children and adolescents. Co-rumination is when young people do more than discuss problems but have conversations which are: '... extensive, repetitive, and speculative, mediated contagion' (p. 1362). They studied 'internalising symptoms' of depression and anxiety and concluded that such co-rumination is an important factor in causing anxiety and depression. They also found this more common in girls.

Social contagion is also a significant factor in influencing adolescents to self-injure (Richardson *et al.* 2012).

Given this evidence of the influence of both social and peer contagion amongst young people, it seems highly likely that the current increase in the number of children presenting with GD, is at least in part due to this effect. Contagion would explain the high frequency of ROGD. When assessing ability to consent, we should be looking carefully at how the child's assertion of GD has evolved and been influenced.

Mermaids is an organization in the UK that 'supports' children with GD. Their website (mermaidsuk.org.uk) gives comprehensive information about GD in children but nowhere is there any caution or criticism of the way gender clinics are giving PBs. On the contrary, the website actively promotes these medications as the solution for dealing with the dysphoria. On PBs their website states:

‘Hormone blockers have been widely researched for three decades, it is an internationally-recognised treatment which has had a hugely positive impact on many young trans people’ (Mermaids news update 2020).

There are other support groups which are critical of the use of PBs. A leading one that is run by parents of children with GD is the Bayswater Support Group (bayswatersupport.org.uk). Genspect is an international alliance of parent and professional groups critical of the affirmative approach to GD and the use of PBs (Genspect.org).

It might be argued that the increase in children presenting with GD is due to the openness of society and the access to websites and advice that now exists. In other words, GD in these numbers always existed but was repressed. This however is extremely unlikely for the following reasons:

- (1) The recent increase in GD is almost confined to children approaching puberty and adolescence and, as we have seen, is usually rapid in onset. We would expect other age groups to be also presenting in greatly increased numbers if acceptability and access to help was the reason.
- (2) The belief that this is a new category of GD is supported by the fact that a decade ago most GD dysphoria in children presented in early childhood. The numbers are so much increased around puberty years that it seems likely (though not proven), that this is a new phenomenon, rather than a consequence of historical repression.
- (3) The vast majority of new onset GD occurs in girls. We know from previous data that gender dysphoria was more common in boys (American Psychiatric Association 2013). This increase in girls parallels the considerable increase in anorexia nervosa in girls over the past decades (Hoek 2006), and in self-harm among girls (Cybulski *et al.* 2021), suggesting a common underlying cause.

Social and peer contagion are common factors in the presentation of GD in many children and therefore it would seem prudent for clinicians to be very cautious in simply affirming GD and then seeking consent for medical treatment.

The use of puberty blockers (PBs) and their effects in relation to consent

Overview

PBs (Gonadotropin-releasing hormone agonists or GnRHa) are a form of medication that blocks the physiological production of sex hormones. The sex hormones, testosterone (in males) and oestrogen (in females), are responsible for the changes that occur in puberty. PBs stop the production of the hormones FSH and LH from the pituitary gland, which stimulate the ovaries, and this in turn prevents the production of sex hormones.

PBs are given to young people with GD, in order to postpone the changes of puberty. The main rationale given for this treatment is that this gives the child time to decide whether to fully transition while preventing the body changes that some of these children dread. By doing this, it is hoped that the child’s stress

about gender is reduced while waiting to see if they wish to continue on the road to more irreversible treatment.

The effect of PBs is said to be reversible in the sense that once stopped, the body will produce the sex hormones appropriate to the person's biological sex. There is however strong evidence of some irreversible effects that will be discussed later.

PBs were first given to children with GD in the late 1990s at a Dutch gender clinic which developed what is referred to as the Dutch protocol (Delemarre-van de Waal and Cohen-Kettenis 2006). This protocol is widely used in gender clinics. It recommends that puberty suppression can begin from the age of 12. PBs are given when puberty has just started (Tanner stage 2). de Vries and Cohen-Kettenis (2012) state (p. 313) that:

Puberty suppression has two aims. First and foremost, they offer the adolescent time to smoothly explore his or her gender identity and to find out if a gender reassignment trajectory is really what the youth wants. Moreover, the knowledge that their bodies in this stage will not continue to develop in the undesired direction often results in a vast reduction of the distress they have been suffering from since the onset of puberty.

PBs in the United Kingdom can only be given off-licence. This is an indication that their use is still in some degree experimental. Many feel that it is certainly experimental (Biggs 2019). The principle PB used in the U.K. is Triptorelin. Under licence this injectable medication is used for patients with prostate cancer, endometriosis, for reducing uterine fibroids, in some cases of breast cancer and for male hypersexuality with severe sexual deviation. In childhood GD, triptorelin is normally given monthly by subcutaneous injection.

Known side effects of triptorelin

The British National Formulary (2021) lists the common, known side effects attributed to triptorelin as:

Anxiety; asthenia; depression; diabetes mellitus; dizziness; dry mouth; embolism; gastrointestinal discomfort; gynaecomastia; haemorrhage; headache; hot flushes; hyperhidrosis; hypersensitivity; hypertension; joint disorders; menstrual cycle irregularities; altered mood; muscle complaints; nausea; oedema; ovarian and fallopian tube disorders; painful sexual intercourse; pelvic pain; skin reactions; sleep disorders and weight changes.

Further, the specific side effects that are common if the drug is given by the intramuscular or subcutaneous route include: Bone disorders and bone fracture.

These side effects are similar in all the PBs used in GD, which basically have the same pharmacological profile.

While some of these effects may be manageable and some are less common in adolescents, the list is certainly not trivial. It is particularly important to look at the effect on bone.

Effect on bone mineral density of triptorelin

The sex hormones which are involved in puberty are very important in the establishment of good bone mineralization. Klink *et al.* (2015) studied 34 individuals

aged 22 years who had all been treated with PBs and subsequently been given Cross sex hormones (CSHs) from the age of 16. Bone mineral density was measured at the start of treatment with PBs and when they had reached 22 years of age. In both men and women, the bone density decreased significantly overall during this time period. Their bones at age 22 were of less density than those of their peers. This shows that there is clearly a potential increased risk of osteoporosis and fractures in later life. The problem, however, is that not enough data about this exists, given that this form of treatment is so recent in young people.

Effect on brain development

Brain maturation continues in young people until at least the mid 20's (Whiteford 2007) and sex hormones testosterone and oestrogen contribute to this development significantly (Goddings *et al.* 2013).

Both androgens and oestrogens induce synaptogenesis and synaptic pruning in rat and non-human primates and it is likely that this process also occurs in humans, modulating brain growth across puberty. Sex hormone receptors for both oestrogens and androgens are found throughout the brain in varying concentrations, with high levels in subcortical regions, particularly the hippocampus and amygdala. (Goddings *et al.* 2013, p. 246)

The effect of blocking the sex hormones during a critical age for brain development is unknown but must be of major concern. The effect of normal puberty on the brain may be dependent on the age at which puberty begins. Delaying this effect may have irreversible consequences. We simply do not know as yet.

The fact that adolescents with GD may then be given cross sex hormones later (from age 16) does not reduce this concern, because we do not know how the biologically male or female brain will mature when under the influence of hormones associated with the opposite biological sex.

Effects from the follow-on treatment

It is too easy to merely look at the specific side effects of PBs without seeing the long-term medical trajectory. Almost 100% of those who are initiated on PBs go on to take CSHs; 98% in the case of GIDS (Carmichael *et al.* 2021) and many of these will also have surgical procedures such as mastectomies and genital surgery. Sex reassignment surgery is increasing. Ugalmugle and Swain (2019) write 'Sex Reassignment Surgery Market size was more than USD 316 million in 2019 and will witness 25.1% CAGR during 2020–2026.'

Infertility is highly likely when taking PBs is followed by CSHs. Cretella (2016, p. 53) writes:

Since GnRH agonists prevent the maturation of gonadal tissue and gametes in both sexes, youths who graduate from pubertal suppression at Tanner Stage 2 to cross-sex hormones will be rendered infertile without any possibility of having genetic offspring in the future because they will lack gonadal tissue and gametes for cryo-preservation. The same outcome will occur if prepubertal children are placed directly on crosssex hormones.

Embarking on PBs therefore means the individual will likely become infertile. The question is whether a child being counselled about PBs can genuinely understand the implications of being infertile and give informed consent. ‘The treatment of GD in childhood with hormones effectively amounts to mass experimentation on, and sterilization of, youth who are cognitively incapable of providing informed consent’ (Cretella 2016, p. 53).

CSHs irreversibly cause deepening of the voice and male pattern hair growth and the long-term effects of surgery are obvious.

Blocking puberty in boys causes underdevelopment of genitalia. This in turn makes subsequent vaginoplasty (the surgical formation of an artificial vagina) more complicated (Bizic *et al.* 2018).

In the light of these facts, the statement that PBs are ‘reversible’ sounds, at the very least, misleading. The child who takes PBs, will almost certainly have life changing and irreversible physical side effects, which could be greatly regretted in the future.

Psychological effects of taking puberty blockers

One of the main reasons given for giving PBs to young people with GD is to reduce their distress in becoming physically more like their biological sex. The question is: does giving PBs reduce depression and the worst end point concerned, that is suicidal ideation and suicide.

A Dutch study (de Vries *et al.* 2011) was based on 70 adolescents who received PBs between 2000 and 2008. Overall, in the short term, behavioural and emotional problems and depressive symptoms were reported as decreased from baseline measures before treatment (it is not clear by how much). Feelings of anxiety and anger however did not change. In other words, it was a very mixed picture.

Significantly all 70 went on to take cross-sex hormones.

This study, while important, is based on quite a small number of children. The recent paper produced by the Tavistock clinic (Carmichael *et al.* 2021) is based on very much the same methodology.

Their paper describes a small study of 44 individuals at the Tavistock clinic who were prescribed PBs. This paper was published just after the High Court case against the Tavistock clinic was brought by Keira Bell (Bell v Tavistock and Portman NHS Foundation Trust 2020). The judges in the case expressed surprise at the lack of available data from the clinic, despite the fact that such data had been available for at least 9 years. The psychological investigation which they used involved questionnaires given to parents and the children. These were applied before treatment and then on two occasions during treatment.

In this study, at 6–15 months on PBs, 49% of the participants reported mood to be improved. However, 24% reported negative changes in mood such as experiencing more mood swings or feeling low. In the text of the report, they state that the findings were similar for the second period (15–24 months). But they were not in fact ‘similar’, and in fact the situation at the second period was significantly worse: less than 30% had a positive mood (from 49%) and the negative mood score was reported as just under 30% (up from 24%).

Oddly, even though questions relating to self-harm and thoughts of self-harm were part of the study, the authors give very sparse data on this. Data on self-harm scores are given in table 4 (p. 7). The paper gives the median of the scores instead of the mean and does not publish the actual frequencies, giving an incomplete picture.

The Tavistock paper then concludes (p. 9):

We found no evidence of change in psychological function with GnRHa treatment as indicated by parent report (CBCL) or self-report (YSR) of overall problems, internalising or externalising problems or self-harm.

At the very least their limited data gives no evidence of improved psychological function in the short term for those on PBs and a significant number of patients had worse mental health after starting on PBs. We know nothing of course about long-term psychological function

Turban (2020) in a paper on the risk of suicidal ideation in young people given PBs concluded that suicidal ideation was reduced in those who had PBs. There are however serious weaknesses in their methodology: they derived the information from a voluntary survey of transgender adults in the U.S. Excluded from this sample of 89 respondents were people who had PBs and then de-transitioned. Any who had committed suicide were of course omitted. Most had started taking PBs after the age of 17 (when puberty would have been well advanced). Since PBs are generally given only to those who are aged 12–16, this means the respondents did not represent the group which is the focus of this review, and is therefore of limited relevance to consent in under 16s.

Biggs (2022) analysed the prevalence of suicide from Tavistock clinic data, showing the small percentage of suicides (0.03%) among individual patients. He concluded that it is irresponsible to exaggerate the prevalence of suicide.

The data on psychological well-being is mixed and incomplete. At the very least we can say that a significant number of those who go on PBs have worse mental health. This ought to be conveyed clearly to any child who is being considered for PBs, along with the parents, and certainly there should be no implied threat of suicidality if a child is not given the PBs.

Zucker writes (2020, p. 36):

As noted in several guideline reviews on clinical practice for the treatment of children with gender dysphoria the field suffers from a vexing problem: there are no randomized controlled trials of different treatment approaches, so the front-line clinician has to rely on lower-order levels of evidence in deciding on what the optimal approach to treatment might be.

Zucker therefore wonders why, of all the options available in managing GD in children, which include watchful waiting and active psychosocial treatment, the prevailing view in gender clinics is to affirm the child's GD and aim to treat it with PBs and eventually CSHs.

Consent for puberty blockers in children

The Bell V Tavistock judicial review

In December 2020 a U.K. case was brought by Keira Bell, a 23-year-old woman who had been a patient of the Tavistock clinic (Bell V. Tavistock and Portman NHS Foundation Trust 2020). She had transitioned as a teenager, was given PBs by the clinic, and then went on to testosterone. She subsequently had mastectomies. Later she no longer self-identified as a man and detransitioned. Her claim was that she was not able to give informed consent to such treatment as a child and that the clinic should not have been allowed to give PBs to children. The subsequent judgement held that it was highly unlikely that a child under age 16 could be competent to give consent to PBs. Only if a ‘best interests’ order has been made by a court for an individual, could PBs be given.

An important point was made (Paras 124, 130) concerning the ruling in Montgomery (Montgomery V Lanarkshire Health Board 2015) a landmark judgement on giving adequate information to an adult patient to allow informed consent. The court in Bell stated (Para 124): ‘The decision in Montgomery was of limited assistance ...’ The Montgomery ruling is concerned with giving enough information to a patient whereas the principal issue of consent for PBs is whether a child has the ability to weigh up the information and foresee the long-term consequences.

For children aged 16 and 17, the court expressed doubt that they could properly give consent and recommended that clinicians be advised to involve a court in decisions for these GD patients. Immediately following the judgement, NHS England updated its service specification for GIDS, preventing them giving PBs to young people.

In March 2021 a judgement was issued by the High Court relating to parental consent for giving PBs to children (AB v CD and others 2021). A mother and father known as XY sought clarification as to whether their parental consent was enough to allow PBs to be given to their child with GD. The court ruled in their favour. In practice this did not change the situation in other cases and the Tavistock was not allowed by the NHS to recommend PBs (NHS England 2021).

In 2021 an appeal by the Tavistock clinic was heard at the Court of Appeal (Nottingham 2021). This was successful and is discussed later.

Gillick competence

The right of a child under 16 to consent to any medical treatment (even without parental permission or knowledge) was decided in 1986 in the House of Lords (Gillick v West Norfolk and Wisbech AHA 1986). Victoria Gillick, a mother of girls under 16 objected to Department of Health advice that permitted doctors to give contraceptive advice and treatment to children without parental consent. The ruling held that a child under 16 had the legal competence to consent to medical examination and treatment if they had enough maturity and intelligence to understand the nature and potential implications of any treatment.

The clinician must assess the child’s maturity and intelligence. As Griffith states concerning this assessment (2015, p. 245), it:

‘... takes account of the child’s experiences and the child’s ability to manage influences on their decision making such as information, peer pressure, family pressure and misgivings.’ Such an assessment must also take account of *‘... the child’s understanding, ability to weigh risk and benefit, consideration of longer-term factors such as effect on family life and on such things as schooling.’*

Such a decision regarding Gillick competence also depends greatly on the seriousness of the treatment decision to be made and whether there are unknown consequences of having the treatment. A child may be Gillick competent regarding one treatment but may be deemed incompetent regarding another, particularly if it is experimental and the long-term effects are unclear.

It is therefore incumbent on any clinician assessing a child with a view to giving PBs that these criteria for Gillick competence are met before considering treatment. A child’s consent to PBs is in theory possible but in view of the experimental nature of PBs and risks associated with them, their Gillick competence to do so must be doubtful.

It is of concern that in *Bell v Tavistock* [2020] the defendants from GIDS, to the surprise of the court, could give no evidence of ever considering even one of the children referred to the clinic as Gillick incompetent.

As the judgment states in paragraph 44: ‘The approach appears to be to continue giving the child more information and to have more discussions until s/he is considered Gillick competent or is discharged.’

The adolescent brain

It would seem that the clinicians at GIDS tend to assume Gillick competence unless explicitly proven otherwise. Of course, such a high threshold is not in itself a reason to assume a child can **never** be Gillick competent to consent to PBs. The law on Gillick competence is an important part of enabling young people to give consent to certain treatments. But given the controversial nature of this form of treatment and the potential long term irreversible consequences, it is worth looking more carefully at what we understand of the maturation of the adolescent brain and the psychology of adolescents, which differs in some important respects from that of adults.

The adolescent brain continues to mature well into the 20s (Johnson *et al.* 2009). Functional MRI scanning of the brain has shown that there are substantial changes happening throughout this time. The prefrontal cortex is in the process of maturing. This part of the brain is involved in higher-order decision making and impulse control. As Johnson *et al.* (p. 218) explain: ‘Among the many behavior changes that have been noted for teens, the three that are most robustly seen across cultures are: (1) increased novelty seeking; (2) increased risk taking; and (3) a social affiliation shift toward peer-based interactions.’

Changes in the higher centres of the brain during adolescence include gradual reduction in grey matter and increase in white matter. The time at which the brain reaches maturity is thought to be between the early 20s and up to 30 years old (Blakemore and Choudhury 2006).

Risk taking that would seem dangerous to an adult is part of the adolescent make-up. As Kerri Smith writes (2018, p. 426): ‘Adolescence is a perilous period ... and risky behaviours are linked to many of the major threats to life during this time.’

Given the long-term nature of the consequences of taking PBs, which include for the vast majority, going on to irreversible changes from CSHs and surgery, it seems doubtful that an adolescent can properly weigh up these long-term effects on their life. This is particularly the case because of the nature of adolescent psychology which inclines them to take risks without forward planning.

This view was certainly backed up by the High Court judgment in *Bell v Tavistock and Portman NHS Trust* [2020]. It is worth giving in full paragraph 138 of the judgment regarding Gillick competence:

It follows that to achieve Gillick competence the child or young person would have to understand not simply the implications of taking PBs but those of progressing to cross-sex hormones. The relevant information therefore that a child would have to understand, retain and weigh up in order to have the requisite competence in relation to PBs, would be as follows: (1) the immediate consequences of the treatment in physical and psychological terms; (2) the fact that the vast majority of patients taking PBs go on to CSH and therefore that s/he is on a pathway to much greater medical interventions; (3) the relationship between taking CSH and subsequent surgery, with the implications of such surgery; (4) the fact that CSH may well lead to a loss of fertility; (5) the impact of CSH on sexual function; (6) the impact that taking this step on this treatment pathway may have on future and life-long relationships; (7) the unknown physical consequences of taking PBs; and (8) the fact that the evidence base for this treatment is as yet highly uncertain.

The deeply life-changing nature of giving PBs with the consequent almost certain progression to more irreversible measures, marks this treatment out as different in relation to most assessments of Gillick competence, such as when prescribing contraceptives (for example). Prescribing contraceptives is a treatment of great consequence and requires careful assessment, but does not have the same degree of long-term outcomes that the giving of PBs leads to. The required 8 elements of understanding listed in the *Bell v Tavistock* judgment above, are all important for the life of that child. That a 12–16-year-old child could make an informed consent with all of these in mind is highly doubtful.

The fact that many such young people have a rapid onset of their dysphoria makes it even more unlikely that they can have time to be reflective about such decisions.

The story of Keira Bell

From reading Keira Bell’s story, which is recounted in full online (Bell 2021), we can sense the personal, first-hand experience of someone going through the process of entering a gender clinic, taking PBs, then going on to CSHs and surgery. It is important to engage with such real-life histories when discussing consent for PBs.

Keira Bell had a difficult and unhappy childhood. Her mother became an alcoholic and her parents divorced when she was aged 5.

When she began puberty, she was seriously depressed and stopped going to school. She became isolated at home and was struggling with her sexuality.

It was suggested by others that she may be transsexual and she latched on to this, encouraged by what she was accessing online about gender transition.

She was referred to GIDS at the Tavistock Clinic. She feels that the clinicians did not deal properly with her mental health and social problems. Her GD was affirmed, and she was given PBs. At age 16 she was given CSHs. At age 20 she underwent a double mastectomy.

Later she began to realize that despite her initial wish to transition, she was, in reality, a woman, and so she de-transitioned.

Her account emphasizes how lacking in understanding she had been when consenting to PBs and how little help she had in dealing with her underlying psychological issues.

She describes the consequence of the treatment she had gone through: possible infertility, loss of breasts and inability to breast feed, atrophied genitals, a permanently changed voice and facial hair.

She then describes how she came to be a claimant in the High court against the Tavistock and Portman NHS Foundation Trust. The panel of 3 judges were to consider if adolescents could meaningfully consent to such medical treatments. Ms. Bell's team argued that the Tavistock had failed to protect young patients. They had not given careful and individualized treatment but 'conducted what amounted to uncontrolled experiments on us.' The case brought by Keira and her team was won in the court – a unanimous verdict.

She notes the fact that in its defence in the High Court, Tavistock put out statements from a few young trans people who are happy with their care. One such was from a 13-year-old trans boy called S, who as a natal girl transitioned with PBs. Concerning future fertility, S stated he 'had no idea what me in the future is going to think.'

Keira maintains that plenty of teenagers, when thinking about future sexual relationships, 'feel baffled and even disturbed at the thought.' She feels that S's statement to the court demonstrates how difficult it is for minors to give consent for procedures they can't yet understand. She quotes the judges who said in the High Court: 'There is no age-appropriate way to explain to many of these children what losing their fertility or full sexual functions may mean to them in later years.'

Lessons from Keira Bell's story

While Keira Bell's story is particular to one person, her case resonates with that of most children with GD who might be offered PBs.

(A) Her background and mental health

Keira had a troubled and unhappy upbringing and was very depressed. Yet, the social services and GIDS seemed not to address her mental health issues properly or go in any depth as to the causes of her problems.

(B) Her ability to consent

She is quite clear that she was too immature as a teenager and did not have the ability to foresee the consequences of the treatment. She had no understanding of what losing fertility might mean for the future.

(C) The pathway to CSHs and surgery

Like almost all children who are put on PBs, she went on CSHs. Many, like her, will go on to have surgery. This supports the assertion that putting a young person on PBs is not, in practice, simply a reversible option.

Opposing statements and how we should interpret these

Around this controversial subject, inevitably we see totally opposing views on puberty blockers put forward and it is important to listen to all sides.

The Tavistock defendants produced statements from 3 individuals supporting the treatment they had been given (Bell v Tavistock 2020, para 84–88). Each of these maintained they had been given good information, had made the right decision (one at the age of 12) and that their lives were much improved as a result.

Some patients will claim that their treatment saved their lives as in statements on the GIDS website (Young people: <https://gids.nhs.uk/young-people>).

Others, like Keira Bell, will assert that their lives have been irreparably damaged. The number of those now de-transitioning and claiming that they had the wrong treatment is growing (Baron and Dierckxsens 2021). This may be in part because we are only now entering the era of those who had their treatment over a decade ago. The long-term consequences and the unmet psychological and medical needs of de-transitioners, are only beginning to emerge (Vandenbussche 2021). It would seem wise, therefore, to follow the adage ‘do no harm’ when we see significant numbers of patients claiming such harm.

Bell v Tavistock – the court of appeal hearing

An appeal was brought by the Tavistock in June 2021 against the 2020 ruling about consent for PBs that Keira Bell secured (Nottingham 2021).

The counsel for Tavistock set out 8 grounds of appeal:

- **Ground 1:** Error of law: improper restriction imposed, despite binding authority of Gillick
- **Ground 2:** Error of law: wrongful application of the law on mental capacity as it applies to Gillick
- **Ground 3:** Error of law: conclusion on 16–18-year-olds incompatible with statute – Family Law Reform Act 1969 and Mental Capacity Act 2005
- **Ground 4:** Error of fact: the use of puberty blockers (PBs) for gender dysphoria (GD) is not ‘experimental’
- **Grounds 5 & 6:** Error of fact: correlation between the use of PBs and progression to use of cross sex hormones (CSH) does not indicate causation – the effects of PBs are not ‘lifelong’ and ‘lifechanging’; serious procedural irregularity: reliance upon impermissible expert evidence
- **Ground 7:** Serious procedural irregularity: impermissible resolution of issues of clinical opinion

- **Ground 8:** Error of law: breach of the Human Rights Act 1998

Analysis of the grounds

Grounds 1 and 2: we have already looked in detail at Gillick and found it highly unlikely that a child could understand, retain and weigh all the consequences of starting PBs.

Ground 3 only concerns those over 16.

Ground 4: The evidence we have is that in large part the use of PBs is experimental, the long-term consequences of them being very unclear.

Grounds 5&6: it is proven that over 90% of those going on PBs progress to CSHs. There is therefore causation at play with use of PBs leading to CSHs. Writing about the judgment in the Bell V Tavistock case, Marina Wheeler QC writes in her blog:

It follows, said the Court, that to achieve ‘Gillick’ competence the child or young person would have to understand not simply the implications of taking puberty blockers but of progressing onto cross-sex hormones, namely that there may be significant, long-term potentially irreversible physical and psychological consequences. (Wheeler 2020)

Ground 7: Obviously clinical opinions will differ. These were weighed up carefully by the judges in Bell V Tavistock.

Ground 8: This refers to article 8 of the Human Rights Act 1998 (Human Rights Act. Article 8 1998) which covers the right to live one’s life with privacy and without interference by the state. It includes one’s sexuality, one’s body and one’s personal identity. It is an important article and covers the rights of trans people to identify and be who they wish to be. However, the issue is whether a child with GD can consent to PBs. Consent is about properly understanding all the consequences of a medical treatment, and this is unrelated to article 8.

On 17 September 2021, the appeal court gave its ruling, overturning the high court Bell v Tavistock decision (Appeal court judgement summary 2021). In para 12 of the summary is the following statement: ‘The case of Gillick v. West Norfolk and Wisbech Health Authority had decided that it was for doctors, not judges, to decide on the capacity of under-16s to consent to medical treatment.’

And so, the judges reverted to the Gillick ruling, leaving such decisions to clinicians. It is important to support the appeal court as a legal system, but it may well be that the issue will be brought before the supreme court.

The question remains: how is it that the clinicians at the Tavistock did not record even one case of Gillick incompetence over many years? Is there a culture within GIDS to merely affirm, seek consent and treat with PBs?

Cass review of gender services

The U.K. government has set up an independent review led by Dr Hillary Cass to look into gender services for children. An interim report by Cass was published in March 2022 (Cass 2022). In this, she remarks that in the U.K.: ‘the clinical approach has not been subjected to some of the usual control measures that are

typically applied when new or innovative treatments are introduced' (p. 15). She reports that some secondary care clinicians feel pressured to take an affirmative approach to GD when they would prefer a more comprehensive mental health approach to making a differential diagnosis. She notes that GPs also feel under pressure to prescribe PBs and cross-sex hormones. The report also highlights the need to see social transition as not neutral, but as an active intervention that has psychological consequences. Overall, there is a sense in the report that the gender services are struggling with the referral numbers and that there is a lack of consensus about the right clinical approach to take with childhood GD. The final report will hopefully be available later in 2022.

The politics of affirmation

In recent years there is little doubt that a major change in attitudes to the management of GD has occurred in many societies, particularly in the developed world. This change parallels the enormous increase in the number of young people presenting with GD. There has been a trend amongst activists and those working in gender clinics that what the young person says is only to be affirmed and supported. Bernadette Wren, former associate director of GIDS, admitted to a House of Commons committee (Women and Equalities Committee 2015): 'I work in a service where a lot of young people – **and anyone who wants it** – have physical intervention. We have no record of turning people down for physical intervention ...' (Emphasis mine).

Such automatic affirmation seems at odds with any normal diagnostic process. The section on informed consent in their website (Informed consent at: <https://gids.nhs.uk/informed-consent>) is extremely brief and seems to be founded on an affirmation of the child's GD, then giving enough information for them to consent. Although parental consent is 'usually' sought from parents, it is not considered essential, and the Cass interim report (Cass 2022) refers to the predominantly affirmative and non-exploratory approach of GIDS.

It is interesting that a literature search for actual data on assessments of Gillick competence for conditions other than GD, does not bear fruit. It is possible that the problem for the medical profession in assessing competence in children is wider than just the case of PBs. It would be interesting to have research on whether liberal interpretations of Gillick competence are more widespread.

In Scotland, the government is planning to put forward legislation, The Gender Recognition Reform (Scotland) Bill (Scottish Government 2019), which would allow anyone who says they are a different gender from their birth assigned sex, to be legally affirmed in this if they have lived in their acquired gender for just 3 months, without medical assessment. While this bill refers to adults, it exemplifies the politics of affirmation generally. The Scottish Government has said in the text of the bill (pp. 15–16) that:

The current system has an adverse impact on people applying for gender recognition, due to the requirement for a medical diagnosis and the intrusion of having their life circumstances considered by the Gender Recognition Panel. We think that trans people

should not have to go through this intrusive process in order to be legally recognised in their lived gender.

It is worth noting that one's interest in their life circumstances is considered intrusive and wrong. Yet, it is exactly the life circumstances of someone such as Keira Bell, which needed to be explored and addressed sensitively and caringly. As a consultation paper by the Scottish Council on Human Bioethics (2021, p. 3), addressing this issue says:

Indeed, if it is considered to be demeaning and unduly intrusive for an individual to receive a biomedical diagnosis or go before an expert panel, what kind of message does this then give to all those affected by other biological challenges?

Giving virtually automatic affirmation, as exemplified by the Scottish government's views, could inhibit clinicians from properly assessing patients, including children. How then can clinicians obtain consent for PBs without such full assessment?

Concerning the affirmative approach, Marcus Evans, a psychotherapist and ex-governor of the Tavistock GIDS clinic, who gave evidence in the Bell V. Tavistock case writes: 'This approach, in my view, is driven by **political ideology** rather than clinical need and inhibits the clinician's curiosity and freedom to explore a child's underlying belief systems and motivations' (Evans 2021, p. 1) (Emphasis mine).

He is also quoted in the Guardian newspaper, saying that many experts were living in fear of being labelled transphobic (Doward 2019).

The politics surrounding GD and the potential of being labelled transphobic if one disagrees with the current trend to affirm, can bring confusion, bias, and even fear to health care staff, in the debate about consent for PBs.

Conclusion

In the past decade, there has been an extraordinary increase in the number of young people presenting with GD around the time of puberty. This new form of GD is usually of rapid onset and the majority are natal females. Among these children, there is a very high frequency of pre-existing social and psychological pathology. There is strong evidence that social and peer contagion contribute significantly in steering such young vulnerable people towards GD. All of this points in the majority of cases, to primary underlying psychological and social causes, from which the GD is secondary. Research shows that in most cases, with watchful waiting, the GD will naturally desist as the child grows older.

Every child is different and must be treated with respect and sensitivity. However, a blanket policy of merely affirming the GD as a primary condition, is unhelpful, untherapeutic and may prevent such children from naturally, over time, becoming comfortable with their natal sex. Seeking consent to treat the GD with PBs is strongly linked to this trend to affirm rather than further examine. It is a trend that is more socio-political than based on science. Affirmation of GD in GIDS is part of an agenda, one which casts severe doubt on the clinician's ability to assess Gillick competence, despite the success of the Tavistock appeal in September 2021.

PBs have unknown long-term side effects and in this sense are certainly experimental, but in the short term we know that they prevent normal bone growth and most likely interfere with the maturation of the adolescent brain. We now know that PBs do not improve overall mental well-being for most of these children. The vast majority of those who are treated with PBs go on to CSHs and surgery; all of which leads to irreversible physical changes, including infertility. Consent for PBs therefore must include warning of the likelihood of these ensuing effects.

The young brain is biologically and socially immature, tends towards short-term risk taking, does not possess the ability to comprehend long term consequences and is highly influenced by peers. The High Court judges in the *Bell V. Tavistock* case, ruled that it is very unlikely that a child under 16 could be Gillick competent to give consent for PBs in cases of GD. This is not only because of the immaturity of a child but also because of the unreliability of the recommendations about treatment made by the doctors at the Tavistock clinic, who were denying the experimental nature of PBs and the risks associated. The experimental nature of the use of PBs is emphasized by Pilgrim and Entwistle (2020). They confirm the weak evidence base in paediatric gender transition services, so that ‘A proper reckoning about safety and efficacy could only then accrue on a post hoc basis’ (p. 225).

Given all the evidence we have, the answer to the question which forms the title of this review is: Children cannot consent, and therefore should not be asked to consent to being treated with puberty blockers for gender dysphoria. This does not deny the reality of GD or that future forms of treatment may be acceptable, but it does rule out such an experimental medication which has such profound and potentially very harmful irreversible consequences.

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References

- AB v CD and others, 2021. EWHC 741 (Fam) ('AB').
- Alison, S., Warin, M., and Bastiampillai, T., 2013. Anorexia nervosa and social contagion: clinical implications. *Australian and New Zealand journal of psychiatry*, 48 (2), 116–120.
- American Psychiatric Association, 2013. *Diagnostic and statistical manual of mental health disorders*. 5th ed. Washington, DC: American Psychiatric Publishing.
- Appeal court judgement summary, 2021. Available from: <https://www.judiciary.uk/wp-content/uploads/2021/09/Bell-v-Tavistock-summary-170921.pdf> [Accessed 18 Sep 2021].
- Ashley, F. and Baril, A., 2018. Why 'rapid-onset gender dysphoria' is bad science. Available from: <https://theconversation.com/why-rapid-onset-gender-dysphoria-is-bad-science-92742> [Accessed 10 Sep 2021].
- Baron, T. and Dierckxsens, G., 2021. Two dilemmas for medical ethics in the treatment of gender dysphoria in youth. *Journal of Medical Ethics*, May 30, 1–5.
- Bayswater Support Group. Available from: bayswatersupport.org.uk [Accessed 25 May 2022].
- Bechard, M., et al., 2017. Psychosocial and psychological vulnerability in adolescents with gender dysphoria: a 'proof of principle' study. *Journal of sex & marital therapy*, 43 (7), 678–688.
- Bell, D., 2020. First do no harm. *The international journal of psychoanalysis*, 101 (5), 1031–1038.
- Bell, K., 2021. *Keira Bell: my story*. Persuasion. Available from: <https://www.persuasion.community/p/keira-bell-my-story> [Accessed 27 July 2021].
- Bell v Tavistock and Portman NHS Foundation Trust, 2020. EWHC 3274 (Admin).
- Biggs, M., 2019. The Tavistock's experiment with puberty blockers. Available from: https://users.ox.ac.uk/~sfos0060/Biggs_ExperimentPubertyBlockers.pdf [Accessed 20 Oct 2021].
- , 2022. Suicide by clinic-referred transgender adolescents in the United Kingdom. *Archives of sexual behavior*, 51, 685–690.
- Bizic, M., et al., 2018. Gender dysphoria: bioethical aspects of medical treatment. *Gender affirmation surgery*, 2018, 9652305.
- Blakemore, S.-J. and Choudhury, S., 2006. Development of the adolescent brain: implications for executive function and social cognition. *Journal of child psychology and psychiatry*, 47 (3/4), 296–312.
- Brazier, M. and Cave, E., 2016. *Medicine, patients and the law*. Manchester: Manchester University Press.
- British National Formulary, 2021. Available from: <https://bnf.nice.org.uk/> [Accessed 8 July 2021].
- Carmichael, P., et al., 2021. Short-term outcomes of pubertal suppression in a selected cohort of 12 to 15 year old young people with persistent gender dysphoria in the UK. *PLoS one*, 16 (2), 1–26.
- Cass, H., 2022. Available from: <https://cass.independent-review.uk/publications/interim-report> [Accessed 5 Apr 2022].
- Centers for Disease Control, 2017. Available from: <https://www.cdc.gov/mmwr/volumes/68/wr/mm6803a3.htm> [Accessed 3 July 2021].
- Cretella, M., 2016. Gender dysphoria in children and suppression of debate. *Journal of American physicians and surgeons*, 21 (2), 50–54.
- Cybulski, L., et al., 2021. Temporal trends in annual incidence rates for psychiatric disorders and self-harm among children and adolescents in the UK, 2003–2018. *BMC psychiatry*, 21, 229.
- Delemarre-van de Waal, H. and Cohen-Kettenis, P., 2006. Clinical management of gender identity disorder in adolescents: a protocol on psychological and paediatric endocrinology aspects. *European journal of endocrinology*, 155 (Suppl. 1), 131–137.
- de Vries, A., et al., 2011. Puberty suppression in adolescents with gender identity disorder: a prospective follow-up study. *Journal of sexual medicine*, 8 (8), 2276–2283.
- de Vries, A. and Cohen-Kettenis, P., 2012. Clinical management of gender dysphoria in children and adolescents: the Dutch approach. *Journal of homosexuality*, 59 (3), 301–320.
- Dishion, T. and Tipsord, J., 2011. Peer contagion in child and adolescent social and emotional development. *Annual review of psychology*, 62, 189–214.
- Doward, J., 2019. Politicised trans groups put children at risk, says expert. Available from: <https://www.theguardian.com/society/2019/jul/27/trans-lobby-pressure-pushing-young-people-to-transition> [Accessed 6 Sep 2021].

- Dyer, C., 2020. Children are “highly unlikely” to be able to consent to taking puberty blockers, rules high court. *British medical journal*, 371, m4699.
- Evans, M., 2021. Freedom to think: the need for thorough assessment and treatment of gender dysphoric children. *BJPsych bulletin*, 2021, 1–6.
- Gender Identity Development Service, 2020. *Referrals to GIDS, financial years 2015–16 to 2019–20*. GIDS. Available from: <http://gids.nhs.uk/number-referrals> [accessed 30 May 2022].
- , 2021. <https://gids.nhs.uk/number-referrals> [Accessed 3 July 2021].
- Genspect. Available from: genspect.org [Accessed 25 May 2022].
- Gillick v West Norfolk and Wisbech AHA, 1986. AC 112 House of Lords.
- Goddings, A., et al., 2013. The influence of puberty on subcortical brain development. *Neuroimage*, 88, 242–251.
- Griffith, R., 2015. What is Gillick competence? *Human vaccines and immunotherapeutics*, 12 (1), 244–247.
- Hebly, I., et al., 2020. Psychosocial health in adolescents and young adults with gender dysphoria before and after gender-affirming medical interventions: a descriptive study from the Hamburg Gender Identity service. *European child & adolescent psychiatry*. doi:10.1007/s00787-020-01640-2.
- High Court, 2021. Available from: <https://www.judiciary.uk/wp-content/uploads/2021/03/AB-v-CD-and-ors-judgment.pdf> [Accessed 13 Aug 2021].
- Hisle-Gorman, C., et al., 2019. Gender dysphoria in children with autism spectrum disorder. *LGBT health*, 6 (3), 95–100.
- Hoek, H., 2006. Incidence, prevalence and mortality of anorexia and other eating disorders. *Current opinion in psychiatry*, 19 (4), 389–394.
- Human Rights Act. Article 8, 1998. Available from: <https://www.equalityhumanrights.com/en/human-rights-act/article-8-respect-your-private-and-family-life> [Accessed 20 Aug 2021].
- ICD, 2016. *F64.2 gender identity disorder of childhood*. Available from: <https://icd.who.int/browse10/2016/en#/F64.2> [Accessed 23 Jun 2021].
- Informed consent. Available from: <https://gids.nhs.uk/informed-consent> [Accessed 20 Aug 2021].
- Johnson, S., Blum, R., and Giedd, J., 2009. Adolescent maturity and the brain: the promise and pitfalls of neuroscience research in Adolescent Health policy. *Journal of Adolescent Health*, 45 (3), 216–221.
- Klink, D., et al., 2015. Bone mass in young adulthood following gonadotropin-releasing hormone analog treatment and cross-sex hormone treatment in adolescents with gender dysphoria. *Journal of clinical endocrinology & metabolism*, 100 (2), 270–275.
- Littman, L., 2018. Parent reports of adolescents and young adults perceived to show signs of a rapid onset of gender dysphoria. *PLoS one*, 13 (8), 1–41.
- Malone, W., et al., 2021. Puberty blockers for gender dysphoria: the science is far from settled. *The lancet child & adolescent health*, 5 (9), e33–e34.
- Maya Forstater V CGD Europe and others, 2021. Available from: https://assets.publishing.service.gov.uk/media/60c1cccd3bf7f4bd9814e39/Maya_Forstater_v_CGD_Europe_and_others_UKEAT0105_20_JOJ.pdf [Accessed 20 Aug 2021].
- Mazzuca, C., et al., 2020. Gender is a multifaceted concept: evidence that specific life experiences differentially shape the concept of gender. *Language and cognition*, 12 (4), 649–678.
- McGregor, D. and Phillips, C., 2021. High Court ruling on puberty blockers will worsen trans healthcare. *British medical journal*, 372, n219.
- Mermaids. Available from: mermaids.org.uk [Accessed 6 Sep 2021].
- Mermaids news update, 2020. Available from: <https://mermaidsuk.org.uk/news/analysis-of-the-high-court-judgment-on-access-to-puberty-blockers/> [Accessed 10 Sep 2021].
- Montgomery V Lanarkshire Health Board, 2015. UKSC 11.
- NHS England, 2021. Available from: <https://www.england.nhs.uk/commissioning/spec-services/npc-crg/gender-dysphoria-clinical-programme/update-following-recent-court-rulings-on-puberty-blockers-and-consent/> [Accessed 10 Sep 2021].
- Nottingham, E., 2021. Available from: <https://www.transparencyproject.org.uk/bell-v-tavistock-the-court-of-appeal-hearing/#:~:text=On%203%20and%204%20June%202021%2C%20the%20Court,lower%20court%20at%20the%20end%20of%20last%20year> [Accessed 3 Sep 2021].

- Oxford English Dictionary, 2002. *Gender*. Oxford: OUP. p. 590.
- Pilgrim, D. and Entwistle, K., 2020. GnRHa ('puberty blockers') and cross sex hormones for children and adolescents: informed consent, personhood and Freedom of expression. *The new bioethics*, 26 (3), 224–237.
- Richardson, B., Surmitis, K., and Hyldahl, R., 2012. Minimizing social contagion in adolescents who self-injure: considerations for group work, residential treatment, and the internet. *Journal of mental health counselling*, 34 (2), 121–132.
- Schwartz-Mette, R. and Rose, A., 2012. Co-rumination mediates contagion of internalizing symptoms within youths' friendships. *Developmental psychology*, 48 (5), 1355–1365.
- Scottish Council on Human Bioethics, 2021. Consultation: gender recognition reform (Scotland) bill. Available from: <https://static1.squarespace.com/static/5ea98b214987747eb7673ed3/t/6078508a9f3fba5df9b24c13/1618497674725/Gender+Dysphoria++Scottish+Parliament++2020.pdf> [Accessed 3 Aug 2021].
- Scottish Government, 2019. Gender recognition reform (Scotland) bill: a consultation by the Scottish Government. 15–16. Available from: <https://static1.squarespace.com/static/5ea98b214987747eb7673ed3/t/6078508a9f3fba5df9b24c13/1618497674725/Gender+Dysphoria++Scottish+Parliament++2020.pdf> [Accessed 21 Sep 2021].
- Smith, K., 2018. Sex, drugs and self-control. *Nature*, 554 (7693), 426–428.
- Steensma, T., et al., 2013. Factors associated with desistance and persistence of childhood gender dysphoria: a quantitative follow-up study. *Journal of the American academy of child and adolescent psychiatry*, 52 (6), 582–590.
- Steensma, T., Biemond, R., and de Boer, F., 2011. Desisting and persisting gender dysphoria after childhood: a qualitative follow-up study. *Clinical child psychology*, 16 (4), 499–516.
- Sutherland, S., ed., 1995. *Macmillan dictionary of psychology*. London: Macmillan Press.
- Turban, J., et al., 2020. Pubertal suppression for transgender youth and risk of suicidal ideation. *Paediatrics*, Feb 1, 145 (2).
- Ugalmugle, S. and Swain, R., 2019. *Sex reassignment surgery market size by gender transition (male to female [facial, breast, genitals], female to male [facial, chest, genitals]), industry analysis report, regional outlook, application potential, price trends, competitive market share & forecast, 2020–2026*. Available from: <https://www.gminsights.com/industry-analysis/sex-reassignment-surgery-market> [Accessed 21 Aug 2021].
- Vandenbussche, E., 2021. Detransition-related needs and support: a cross-sectional online survey. *Journal of homosexuality*, May 1, 1–19. doi:10.1080/00918369.2021.1919479
- Wheeler, M., 2020. Puberty blocking – can a child consent? Available from: <https://ukhumanrightsblog.com/2020/12/04/puberty-blocking-can-a-child-consent/> [Accessed 20 Aug 2021].
- Whiteford, T., et al., 2007. Brain maturation in adolescence: concurrent changes in neuroanatomy and neurophysiology. *Human brain mapping*, 28, 228–237.
- Women and Equalities Committee, 2015. Oral evidence: transgender equality enquiry, HC390: Tuesday 15 September 2015, House of Commons. Available from: <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/women-and-equalities-committee/transgender-equality/oral/21638.html> [Accessed 3 Aug 2021].
- Yildirim, B., et al., 2017. Gender dysphoria and attention problems: possible biological underpinnings. *Psychiatry and clinical psychopharmacology*, 27 (3), 283–290.
- Young people, 2021. Available from: <https://gids.nhs.uk/young-people> [Accessed 20 August 2021].
- Zucker, K., 2017. Epidemiology of gender dysphoria and transgender identity. *Sexual health*, 14 (5), 404–411.
- , 2020. Debate: different strokes for different folks. *Child and adolescent mental health*, 25 (1), 36–37.