

**Family Policy Brief**

**Understanding Transgender Issues: An Analysis of Studies Used to Support Cross-Sex Identification**

In a recent brief filed with the U.S. Supreme Court, Dr. Paul McHugh, former chair of the Department of Psychiatry at Johns Hopkins University, describes the state of the evidence surrounding transgender issues: “There is insufficient evidence to support treating gender dysphoric children as if they are the opposite sex.”[[1]](#endnote-2) Similarly Kenneth Zucker, a psychiatrist at the University of Toronto and former director of its gender identity clinic, points out: “There are no randomized controlled trials (RCT) 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.”[[2]](#endnote-3) This dearth of credible evidence has not prevented activists and the media from characterizing the research situation in a very different way. Each time a study is released that purports to show that individuals who feel discomfort with their biological sex would benefit from “transitioning” their appearance though hormones and surgery to appear as the opposite sex, it is widely touted in the media, even though numerous analysts have noted, “the evidence base supporting the efficacy of such treatment is extremely poor.”[[3]](#endnote-4)

This brief will look at assessments of the existing research from credible sources and illustrate problems with the research using examples of specific studies.

Hayes Inc.

The amicus brief from Dr. McHugh references accompany called Hayes, Inc., which provides “accessible, unbiased resource of evidence-based information on medical devices, drugs, treatments, and procedures.”[[4]](#endnote-5) As Dr. McHugh notes, Hayes, Inc. gave “the quality of evidence for hormone treatment its lowest possible rating.” Hayes reviewed 21 studies before concluding, “the studies ‘were inconsistent with respect to a relationship between hormone therapy and general psychological health, substance abuse, suicide attempts, and sexual function and satisfaction.’” And that “[f]or quality of life, ‘[d]ifferences between treated and untreated study participants were very small or of unknown magnitude,’ suggesting little evidence of effectiveness.”[[5]](#endnote-6) It came to the same conclusion in regard to studies about surgical intervention (so called sex-change surgery): “‘evidence was too sparse to allow any conclusion regarding the comparative benefits of different [sex reassignment surgery] procedures.’”[[6]](#endnote-7) Finally, Hayes gave its lowest rating to the evidence of related surgical procedures (like cosmetic surgery to change secondary sex characteristics). “The studies not only had limitations such as small sample sizes, separating procedures by category, and a lack of control or comparator group, they also measured ‘technical success and patient satisfaction’ while ignoring ‘overall measure of well-being.’”[[7]](#endnote-8)

Birmingham University's Aggressive Research Intelligence Facility

In England, the *Guardian* newspaper commissioned Birmingham University's Aggressive Research Intelligence Facility (Arif) “to assess the findings of more than 100 follow-up studies of post-operative transsexuals.” Arif reviews healthcare treatments for the country’s National Health Service. The report of the findings highlighted four conclusions from Arif’s research:

1. “that most research was poorly designed, which skewed the results in favour of physically changing sex.”
2. “There was no evaluation of whether other treatments, such as long-term counselling, might help transsexuals, or whether their gender confusion might lessen over time.”
3. “the findings of the few studies that have tracked significant numbers of patients over several years were flawed because the researchers lost track of at least half of the participants.”
4. “The potential complications of hormones and genital surgery, which include deep vein thrombosis and incontinence respectively, have not been thoroughly investigated.”

The director of Arif summarized: “There is huge uncertainty over whether changing someone's sex is a good or a bad thing.”[[8]](#endnote-9)

Branstrom & Pachankis Study

A 2019 study claimed that “the longitudinal association between gender-affirming surgery and reduced likelihood of mental health treatment lends support to the decision to provide gender-affirming surgeries to transgender individuals who seek them.”[[9]](#endnote-10) Specifically, the authors claimed that the odds of being treated for a mood or anxiety disorder decreased each year after surgery. Here are some limitations of that study:

* Though the sample of the study is 2,679, “only 19 total respondents reported their last surgery as having been completed 10 or more years ago” while 574 had surgery within the last two years.[[10]](#endnote-11) As Dr. Mark Regnerus noted in his review of the study: “The study’s trumpeted conclusion may hinge on as few as three people in a data collection effort reaching 9.7 million Swedes, 2,679 of whom were diagnosed with gender incongruence and just over 1,000 of whom had gender-affirming surgery.”[[11]](#endnote-12)
* Dr. Regnerus describes another implication: “the beneficial effect of surgery is so small that a clinic may have to perform 49 gender-affirming surgeries before they could expect to prevent one additional person from seeking subsequent mental health assistance.”[[12]](#endnote-13)

A number of analyses raised additional concerns about the study:

* The measures the author used “excludes completed suicides, suicide attempts without subsequent hospitalization, health care visits and hospitalizations for other medical or psychological issues still related to gender-affirming surgeries, individuals refusing treatment, and individuals choosing self-medication with alcohol or illicit substances.”[[13]](#endnote-14)
* The study actually shows “a spike in suicide attempts is seen in the year after surgery (in 2.8% of the patients), which falls off over the next 1–2 years, and to a lesser extent, there is also a spike in the proportion of patients receiving mental health treatment in the first year, going up to 45.3%.”[[14]](#endnote-15)
* “Loss to follow-up, death from suicide of the most psychologically distressed individuals, or death from cardiovascular disease, all known to be increased in the transgender population, could have falsely skewed the ≥10-year data.”[[15]](#endnote-16)
* A Swedish doctor noted that the data actually showed that “among the individuals examined in the study, the risk of being hospitalized for a suicide attempt was 2.4 times higher if they had undergone gender-corrective surgery than if they had not.”[[16]](#endnote-17)

After the authors received these questions about their data, they performed a new analysis and concluded: “the results demonstrated no advantage of surgery in relation to subsequent mood or anxiety disorder-related health care visits or prescriptions or hospitalizations following suicide attempts in that comparison.”[[17]](#endnote-18) This is particularly significant since this is the largest sample ever in the research.

Turban Study

One study claimed that suicide risk could be lowered by giving puberty suppression hormones to youth who want them.[[18]](#endnote-19) Here are some obvious problems with the study:

* 20,619 young adults were studied but only 16.9% percent expressed a desire to receive puberty blockers, and of these only 2.5% (89 people) actually received the drugs so the actual sample was much smaller.
* The only outcomes measured were the subjective experiences of the people being interviewed.
* Since the study relies on surveys, any individuals who actually committed suicide would not be included.
* The authors focus on “suicidal ideation” and report it being lower for those who received puberty blockers but these youth too had significantly higher than average rates of suicidal thoughts (75%) and attempts (42%).[[19]](#endnote-20)
* The group that received puberty suppression “actually had double (45.5% versus 22.8%) the rates of the control group for serious (resulting in inpatient care) suicide attempts in the year preceding the data collection.”[[20]](#endnote-21)
* The age range of participants was 18-36 and the mean age of receiving puberty blockers was 15.7 so the study was examining a relatively short experience, far less than a lifetime.[[21]](#endnote-22)

Avi Ring, A Norwegian neuroscience professor, examined this study and pointed out: “Of 1000 children with GD [gender dysphoria], if all receive puberty suppression then we expect all 1000 to go on to full transition whereas without the pubertal inhibition only 150 (15% of 1000) will transition. As the authors correctly state in the paper, 40% of transpersons attempt suicide in a lifetime, which means that with PB [puberty blocker] administration to all, we expect 40% of 1000 = 400 persons to attempt suicide. The authors show, however, that because of the benefits of PB, this may perhaps be adjusted downward by a factor of 0.6; the expected outcome is then 240 attempted suicides. In contrast, if none of the 1000 subjects receive puberty suppression then only 60 persons (40% of 150) are expected to attempt suicide.”[[22]](#endnote-23)

Michael Biggs, a sociology professor at the University of Oxford, also reviewed the study.[[23]](#endnote-24) He noted that the sample was nonrepresentative because participants were recruited online (so those who stopped identifying as transgender would be excluded) and that of the nine measures examined by the study “only one of these nine measures yielded a statistically significant association.” Dr. Biggs notes other significant problems with the Turban study that might be evident to an average reader:

* 73% of the respondents to who were reported to have taken puberty blockers in the survey used for this study “said they started on them after the age of 18 years” which means that what they took could not actually have been puberty blockers. This group was excluded from the 89-person subsample in the Turban study but were included in the comparison group so the comparison group “included an unknown number of respondents—possibly the majority—who actually wanted cross-sex hormones.” This, of course, would skew the comparisons.
* “The subsample was confined to respondents who were aged under 18 in 1998” but puberty blockers were not generally available in the United States until 2009, so the “subsample included older respondents who, in fact, had no opportunity to obtain these drugs and so cannot be used for comparison.”
* The Turban study did not adequately control for psychological problems that existed before puberty blockers were given or withheld. This is significant because “adolescents with severe psychological problems would have been less eligible for drug treatment.” So, “a negative association found many years after treatment is compatible with three scenarios: puberty blockers reduced suicidal ideation; puberty blockers had no effect on suicidal ideation; puberty blockers increased suicidal ideation, albeit not enough to counteract the initial negative effect of psychological problems on eligibility.”

Prominent psychologist Kenneth Zucker noted that half of those who received puberty blockers as adolescents experienced suicidal thoughts over the last year. Dr. Zucker said: “That’s not very good. It’s a little lower than the 64 percent who said they wanted [blockers] but didn’t get it. But gee, that’s still a lot of suicidal ideation.”[[24]](#endnote-25)

Kuper Study

Another study claimed to find that giving cross-sex hormones to children with gender dysphoria alleviated their experience of body dissatisfaction.[[25]](#endnote-26) A number of limitations are evident in this study as well:

* The body dissatisfaction reports are from surveys, so we only have the reports of the children. Since their families invested in the treatment, the children could have an incentive to put the best face on things.
* There was no comparison group. It could be that teenagers have some shift in things like body image over time regardless of treatment.
* The measure of body dissatisfaction is particularly subjective. If a child is seeking treatment to change appearance, it stands to reason that they will be initially happy when they get what they want. The question is how long that will last?
* The study reports a decrease in self-reported depression though not doctor-reported depression, but these changes were “small to moderate.”
* Similar reported decreases in anxiety were “small.”
* The amount of time covered in the survey was one year, so the reports give us no information about long-term effects of the surgery.
* The mean age of participants was 14.9 and some of the participants were as young as 9. None were older than 18.
* The initial measures related to suicide were extraordinarily high (81% of participants had thoughts of suicide).
* It could be that the attention and support that are part of the “treatment” could have an effect on any of the measures.
* Of the 209 initial participants, only 148 provided follow up data (a loss of 29%).
* In the video abstract of the article, there is a chart that shows change on measures of self-harm (suicidal thoughts, suicide attempts and self-injury) after receiving cross-sex hormones. The first column shows lifetime experience. The second column shows the percentage of those in the study reporting each of these behaviors just before the assessment. The third column shows the reports roughly one year after the assessment. The hormone treatment occurs 1 month (for suicidal thoughts) or 3 months (for suicide attempts and self-injury) after the initial assessment. The chart shows that suicidal thoughts increased from 25% to 38% after the treatment began. Suicide attempts increased 2½ times and self-injury increased from 10% to 17% in that time.
* A similar chart in the article itself reports pre-assessment suicidal thoughts in 25% of the sample and 38% at follow-up, pre-assessment suicide attempts in 2% and 5% at follow-up, pre-assessment self-injury in 10% pre-assessment and 17% at follow-up.



Costa Study

A 2015 study claimed that adolescents who received psychological support and puberty suppression “had significantly better psychosocial functioning after 12 months of” puberty blockers than those who received only psychological help.[[26]](#endnote-27) Dr. Michael Biggs, who critiqued the Turban study, also examined this one.[[27]](#endnote-28) He first noted that the original sample included 201 participants but most respondents did not complete the study so that the final sample included only 71 youth. Some of these received puberty blockers and the rest did not (this latter group was the comparison). Those in the comparison group did not receive puberty blockers because they needed “more time due to ‘possible comorbid psychiatric problems and/or psychological difficulties.’” Both groups were measured on the Children’s Global Assessment Scale and the group that received psychological help and puberty blockers showed a statistically significant improvement in their score, which the study highlighted. The study, however, did not highlight the change in score for the comparison group. This group scored lower than the main group which would be expected because they had been placed in the comparison group because they had more preexisting psychiatric or psychological problems. When comparing the two groups (those who received puberty blockers and those who did not), the difference in scores was not statistically significant. So, the study could not show that the main sample was better off because of the hormones.

Jellestad Studies

A 2018 study from Switzerland involved a sample of self-selected participants who had gone to the participating clinics for treatment or who were recruited by activist groups.[[28]](#endnote-29) All were adults and the study was intended to determine if “gender affirming interventions” (hormone treatment or surgery meant to change the person’s appearance to that of the opposite sex) affected a respondent’s “quality of life” was determined by self-reports. 574 participants were contacted but only 143 responded to the survey. Far more of the respondents were men than women though this is contrary to current trends.

Significantly, there was no baseline measure used so there is no way of knowing what affect the transgender procedures might have had. Also, there was no comparison to people who did not undergo treatment.

The study found: “Compared to the general population, these findings indicate poor quality of life in trans persons who had performed those medical interventions.” The authors admitted “we did not find significant correlations between GAI [gender affirming interventions] and QoL [quality of life].”

Olson Studies

A 2016 study claimed to find that children who were supported in their gender-identity, as distinct from their biological sex, have “developmentally normative levels of depression and only minimal elevations in anxiety” and “have notably lower rates of internalizing psychopathology than previously reported among children with GID [gender identity disorder] living as their natal sex.”[[29]](#endnote-30) They compared 73 children whose parents had supported their “transitioning” with a group of their siblings and 73 children who were not transgender on measures of anxiety and depression as reported by the children’s parents.

The same authors then published another study the next year comparing (1) 63 “transgender” children (some from the prior group) with a control group, this time measuring self and parent reports of depression and anxiety, and (2) 116 “transgender” children with a control group, on measures of self-worth.[[30]](#endnote-31)

1st study: nearly a third of the children were so young that “the measures used were not validated for” their age group

2nd study: “scores for children from higher income families were not reported”

In 2020, two researchers reexamined the raw data from these studies.[[31]](#endnote-32) They found that “most of the results with respect to depression favored cisgender [the control group] children,” “[a]nxiety outcomes were mostly in favor or cisgender children” and “[i]n terms of self-worth, all of the results favored cisgender children.” The authors point out that the results of the studies “should have been interpreted as evidence that even with high levels of parental support, transgender children have lower levels or mental health, especially with respect to higher levels of anxiety and lower levels of self-worth, though marginally with respect to depression.”

Weinforth Meta-Study

Notably, in 2019, four Swiss doctors published a meta-study to look at the research on outcomes of surgery to change the appearance men to resemble women.[[32]](#endnote-33) The researchers found 13 studies to include. They admit that none involved random samples. The studies had very small samples, the largest was 72 and the smallest was 3. Only 9 studies reported the dropout rate and most of these were extremely high. The majority well over half (77.37%, 75.26%, 62.5%, 61.15%, 55.56%), and the other four were 28.57%, 25%, 20.51%, 11.76%. Only two included a control group. Only two followed the participants for more than 3 years. One of these was for 15 years and it found “significantly lower” quality in life and patient satisfaction among those who underwent surgery.[[33]](#endnote-34) Another followed participants for nearly 30 years but there were only 9 participants and the surgeries were reconstructive after a failed initial procedure.[[34]](#endnote-35)

Conclusion

In short, there is very little data about the effects of transgender procedures. As a group of English physicians noted: “The significant lack of evidence for treatments and interventions which may be offered to people with dysphoria is a major issue facing this area of healthcare.”[[35]](#endnote-36) The research that purports to show that “transitioning” practices are helpful are plagued by methodological shortcomings and highlight findings that suggest minor benefits while downplaying those that suggest serious risks.

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