



HHS Public Access

Author manuscript

J Am Acad Child Adolesc Psychiatry. Author manuscript; available in PMC 2017 February 10.

Published in final edited form as:

J Am Acad Child Adolesc Psychiatry. 2017 February ; 56(2): 116–123.e2. doi:10.1016/j.jaac.2016.10.016.

Mental Health and Self-Worth in Socially Transitioned Transgender Youth

Ms. Lily Durwood, BA, Dr. Katie A. McLaughlin, PhD, and Dr. Kristina R. Olson, PhD
University of Washington, Seattle

Abstract

Objective—Social transitions are increasingly common for transgender children. A social transition involves a child presenting to other people as a member of the “opposite” gender in all contexts (e.g., wearing clothes and using pronouns of that gender). Little is known about the well-being of socially transitioned transgender children. This study examined self-reported depression, anxiety, and self-worth in socially transitioned transgender children compared with 2 control groups: age- and gender-matched controls and siblings of transgender children.

Method—As part of a longitudinal study (TransYouth Project), children (9–14 years old) and their parents completed measurements of depression and anxiety ($n = 63$ transgender children, $n = 63$ controls, $n = 38$ siblings). Children (6–14 years old; $n = 116$ transgender children, $n = 122$ controls, $n = 72$ siblings) also reported on their self-worth. Mental health and self-worth were compared across groups.

Results—Transgender children reported depression and self-worth that did not differ from their matched-control or sibling peers ($p = .311$), and they reported marginally higher anxiety ($p = .076$). Compared with national averages, transgender children showed typical rates of depression ($p = .290$) and marginally higher rates of anxiety ($p = .096$). Parents similarly reported that their transgender children experienced more anxiety than children in the control groups ($p = .002$) and rated their transgender children as having equivalent levels of depression ($p = .728$).

Conclusion—These findings are in striking contrast to previous work with gender-nonconforming children who had not socially transitioned, which found very high rates of depression and anxiety. These findings lessen concerns from previous work that parents of socially transitioned children could be systematically underreporting mental health problems.

Correspondence to Kristina R. Olson, PhD, Department of Psychology, University of Washington, Box 351525, Seattle, WA 98195; krolson@uw.edu.

This work was presented at the World Professional Association for Transgender Health; Amsterdam, Netherlands; June 19, 2016.

Disclosure: Dr. McLaughlin has received paid honoraria from the University of Illinois at Chicago, the Brain and Behavior Foundation, the APA Distinguished Scientific Award for Early Career Contribution to Psychology, the Society for a Science of Clinical Psychology—Susan Nolan-Hoeksma Early Career Award, and the University of Colorado at Denver. She has received grant funding from the National Institutes of Health, the Royalty Research Fund, the International Mental Health Research Organization, the Jacobs Foundation, and the Brain and Behavior Research Foundation. Dr. Olson has received or soon will be receiving paid honoraria from the Pennsylvania State University—Abington, Arizona State University, University of Washington Medical School, University of California—San Diego, and the University of Minnesota Program in Human Sexuality. She has received grant funding from the National Science Foundation and the Science of Intellectual Humility. Ms. Durwood reports no biomedical financial interests or potential conflicts of interest.

Keywords

transgender children; gender nonconformity; social transitions; mental health; self-worth

An increasing number of parents of transgender children, or children who identify as the gender “opposite” their natal sex (e.g., natal male children who assert they are girls and natal female children who assert they are boys), have allowed their children to “socially transition.” A social transition is a nonmedical decision to allow a child to change his or her first name, pronouns, hairstyle, and clothing to live everyday life as one’s asserted gender.¹ In most cases, these children have asserted their gender identity as different from their natal sex for months or years, during which they often express dissatisfaction and/or disgust with their anatomy, which in extreme cases can trigger threats or attempts at self-harm.^{2–5} Parent decisions to allow transgender children to socially transition have received significant media attention,^{6–8} with many lay and scientific skeptics asserting concern for the wellbeing of these children in the short and long term.^{9–13} In contrast, one small qualitative study described the intervention, from the perspective of parents, as having been transformative for their children by alleviating mental health problems and improving the child’s wellbeing almost immediately.¹⁴ Despite considerable debate on these early childhood social transitions, remarkably little empirical evidence on this issue has appeared in the scientific record.

To date, there have been no reports on socially transitioned transgender children’s views of their own wellbeing. Self-reports of transgender people’s mental health have been limited to older teens and adults and indicate dramatically increased rates of anxiety and depression^{15–18} and alarming rates of suicidality.^{19–23} Some estimates have suggested that as many as 41% of transgender adults have attempted suicide in their lifetime.²²

Although self-report data on the mental health of socially transitioned transgender children are absent in the literature, a recent study examined parent-reported mental health in these children.²⁴ Parents reported that socially transitioned transgender children had normative levels of depression and marginally increased levels of anxiety compared with national norms. Compared with their siblings and age- and gender-matched controls, no significant increases in anxiety and depression were observed. These findings were notable because previous work with gender-nonconforming children who had *not* socially transitioned reported drastically increased rates of anxiety and depression, with more than 50% of older children falling in the clinical range of internalizing symptoms.^{25–27}

Importantly, there are several potential issues with relying on parent reports of internalizing symptoms. Even in children who are “gender typical,” parents often underreport internalizing symptoms, possibly because they are unaware of these internal experiences.^{28–31} The tendency to underreport internalizing symptoms is especially likely for parents of socially transitioned transgender children because these parents could be motivated (intentionally or not) to report low rates of psychopathology, even if children are experiencing difficulties. This might occur because parents want to justify their decision to socially transition their child. Research in social psychology has long suggested that people show confirmation biases,³² that is, seeking out information that supports their existing

beliefs. In this way, parents might see what they expect to see, even if a child is struggling. For these reasons, examining children's perceptions of their own mental health is especially crucial.

In addition to assessing anxiety and depression, this study assessed self-worth. Previous work has suggested that self-worth is an important predictor of future mental health outcomes in typically developing children and adolescents,^{33–36} and self-worth measurements can be used reliably with children at young ages.³⁷

Therefore, the present work assessed socially transitioned transgender children's self-worth (6–14 years old) and mental health (anxiety and depression, 9–14 years old) compared with a group of age-matched controls and a group of siblings of transgender children. In addition, children's reports of their own anxiety and depression were compared with parents' reports of the same children's anxiety and depression (on the same day). The latter allowed us to assess whether parents tend to underreport mental health problems in their socially transitioned transgender children.

METHOD

Participants

Participants were enrolled at the time of the study in the TransYouth Project (TYP), a national, longitudinal study of socially transitioned transgender children. Families of socially transitioned transgender children were recruited into the broader TYP study through word of mouth, national and local support groups, summer camps, and online forums for families of transgender and gender-nonconforming youth. Transgender children came from 23 US states and 1 Canadian province: 22% from the Pacific Northwest, 18% from California, 6% from the Mountain states, 7% from the Southwest, 21% from the Midwest, 11% from the South, 6% from the Mid-Atlantic region, and 9% from the Northeast. Of the families of transgender children, 52% identified themselves as living in a suburban area, 25% as living in an urban area, 17% as living in a small town, 3% as living in a rural area, and the remaining 3% listed multiple categories.

To be included as a transgender participant in the present study, children needed to identify as the gender opposite their natal sex in everyday life, to have socially transitioned by using the pronoun associated with their asserted gender in all contexts,¹ and be enrolled in the study from March 2015 to February 2016 (when the present measurements were included). The TYP also includes 2 control groups: siblings of transgender children and age- and gender-matched controls. The siblings were recruited through the same methods as the transgender group and the matched controls were recruited through a university database of families interested in participating in child development research. More details about these groups are presented in Supplement 1 (available online).

The present analytic sample included 63 transgender children, 63 age-matched controls, and 38 siblings 9 to 14 years old who completed the depression and anxiety measurements. Their parents also reported on the child's depression and anxiety symptoms. The analytic sample for the self-worth measurement included 116 transgender children, 122 control children, and

72 siblings 6 to 14 years old, inclusive of most children who completed the mental health measurements. Demographics for these groups are presented in Table 1, and detailed inclusion information is available in Supplement 1, available online.

Procedure

Whenever possible, parents and children completed the measurements in separate rooms or far enough apart in the same room to be out of earshot. For children no older than 11 years, the researcher read the questions out loud, and the children could answer out loud or point to their response on a scale with response options. Parents and children at least 12 years old completed written versions of the measurements privately, with a researcher nearby to answer questions if needed. All procedures and recruitment were approved by our institutional review board.

Measurements

Internalizing Psychopathology—Children reported on anxiety ($\alpha = 0.858$) and depression ($\alpha = 0.859$) symptoms using the pediatric short form of the National Institutes of Health's Patient Reported Outcomes Measurement Information System (PROMIS) scale,³⁸ and parents completed the proxy versions of the anxiety (parent 1, $\alpha = 0.935$; parent 2, $\alpha = 0.912$) and depression (parent 1, $\alpha = 0.880$; parent 2, $\alpha = 0.892$) PROMIS scales.³⁹ Each scale consists of items such as "I felt unhappy" or "I felt worried," and participants indicated how often they (or their child) felt that way during the past 7 days, selecting from the options "never," "almost never," "sometimes," "often," or "almost always," which were converted to a Likert-type scale. Participants' scores across items were summed and then converted to a standardized *T* score. *T* scores are normed such that a score of 50 represents the national average for children, with 10 points representing a standard deviation and a score of at least 63 indicating clinically significant anxiety or depression (top 10% of all children).

All child-reported data in this study are new and unpublished. However, for comparison, we also included parent-reported mental health, which in some cases, for some participants, was previously published. Specifically, anxiety and depression scores reported by parents of 21 transgender participants, 16 siblings, and 18 control participants were reported in a previous article²⁴ (although for 10 transgender children, 7 controls, and 7 siblings, the present report involves analysis from a more recent visit). All other parent reports are new and unpublished.

Of the 63 transgender children who filled out anxiety and depression measurements in the present work, 36 children had 2 parents who completed assessments and the remaining 27 children had 1 parent who completed the assessments. Of the 38 siblings who filled out anxiety and depression measurements, 25 children had 2 parents who completed assessments and 13 children had 1 parent who completed the assessments. Only 1 parent was present for participation with the control children, and therefore only 1 parent completed an assessment. For consistency with past work,²⁴ when children had 2 parent reporters, the responses of the 2 parents was averaged (in general, the 2 parents' responses were associated: depression, $r=0.508$, $p<.001$, $n=61$; anxiety, $r=0.470$, $p<.001$, $n=61$).

Analyses for single-parent reporters for all participants are reported in Supplement 1, available online; the conclusions are identical.

Self-Worth—Self-worth scores were reported using the Global Self-Worth Subscale from the Harter Self-Perception Profile for Children.⁴⁰ In this subscale, children were presented with a description of 2 kinds of children (e.g. “some kids like the kind of person they are BUT other kids wish they were different”) and were asked to select which kind of child they are most like. Once the children made a selection, they were asked whether this was “sort of true” or “really true.” Responses were recoded to a scale from 1 to 4, such that scores of 1 indicated the lowest self-worth and 4 indicated the highest. Scores were computed by averaging the 6 items ($\alpha = 0.671$). This measurement was administered to children 6 to 14 years old in the present work.

RESULTS

Internalizing Symptoms

We found no differences in self-reported depressive symptoms across the 3 groups (Table 2 lists the means; $F_{2,161} = 1.18, p = .311$). Similarly, we found no significant, albeit marginal, difference in self-reported anxiety symptoms across the 3 study groups ($F_{2,161} = 2.62, p = .076$). Post hoc Tukey tests showed that controls did not differ from the transgender group ($p = .160$) or sibling group ($p = .110$) and that siblings and transgender participants did not differ ($p = .905$). We also tested whether any of these groups differed significantly from the national average (50) on either measurement. For depressive symptoms, the transgender group ($t_{62} = 1.07, p = .290$) and the sibling group ($t_{37} = 1.63, p = .112$) did not differ from national averages, whereas the matched-control group showed lower than average depressive symptoms ($t_{62} = 3.54, p = .001$). For anxiety, the transgender group ($t_{62} = 1.69, p = .096$), the control group ($t_{62} = 0.99, p = .328$), and the sibling group ($t_{37} = 1.67, p = .104$) did not differ from national averages. Rates of children in the clinical range for depression and anxiety (T scores ≥ 63 , which represent the approximately top 10% of scores nationally) in each participant group are listed in Table 2. Further analyses of these values can be found in Supplement 1, available online.

Parents also reported no differences among groups on depressive symptoms ($F_{2,161} = 0.32, p = .728$) but did report significant differences on anxiety symptoms ($F_{2,161} = 6.22, p = .002$; Table 3 lists the means). Post hoc Tukey tests indicated that parents reported higher rates of anxiety in transgender participants than in controls ($p = .002$) and marginally more than in siblings ($p = .073$), although siblings and matched controls did not differ from one another ($p = .718$). We compared these values with the expected national average ($T = 50$) and found no differences from national averages on depression for any group (transgender, $t_{62} = 0.14, p = .886$; control, $t_{62} = 0.63, p = .530$; siblings, $t_{37} = 0.96, p = .345$). However, parents reported higher than average anxiety for the transgender group ($t_{62} = 4.32, p < .001$). Parents reported results that did not differ from national averages for the control group ($t_{62} = 0.37, p = .714$) or sibling group ($t_{37} = 0.74, p = .463$). Rates of children in the clinical range for depression and anxiety (T scores ≥ 63) in each participant group as defined by parent

reporters are listed in Table 3. Further analyses of these scores can be found in Supplement 1, available online.

Counter to the hypothesis that parents of socially transitioned transgender children are underreporting anxiety and depression, parents of transgender children reported greater anxiety in their children than the children reported ($t_{62} = 2.11, p = .039$), and they did not differ from children's self-reports on depression ($t_{62} = 0.97, p = .338$).

Sensitivity Analysis

Because previous work has pointed out that the TYP has a particularly high-income skew,⁴¹ we also computed mean anxiety and depression for the subset of children coming from homes with household incomes no higher than \$75,000. These means and percentages of participants in the clinical range are listed in Tables 2 and 3.

In addition, the present sample included some children who were on hormone blockers, some children who were on cross-sex hormones, and some children who were on neither intervention. Table 4 lists the mean anxiety and depression scores for children in each of these groups as reported by the children and their parents. None of the differences among these groups approached significance ($p > .500$ for all comparisons).

Self-Worth

The age range and sample size were considerably larger for self-worth, allowing us to examine not only differences between conditions but also differences by age group. Therefore, we ran a condition (transgender, control, sibling) by age (6–8, 9–11, 12–14 years old) group between-participants analysis of variance. We found no significant effect of condition ($F_{2,300} = 1.96, p = .142$), a marginal effect of age group ($F_{2,300} = 2.66, p = .072$), and no significant interaction ($F_{4,300} = 0.18, p = .949$; Table 5 lists the full means). Children in all groups reported self-worth that was higher than the midpoint (2.5) of the scale, indicating high self-worth overall (transgender, $t_{115} = 19.14, p < .001$; controls, $t_{120} = 29.45, p < .001$; siblings, $t_{71} = 21.44, p < .001$).

DISCUSSION

We found remarkably good mental health outcomes in socially transitioned transgender children in the present study. Transgender children reported normative rates of depression and slightly increased rates of anxiety. Rates of depression in transgender children did not differ significantly from those in siblings of transgender children or from those in age- and gender-matched controls, although rates of anxiety were marginally higher. Parents' reports of their children's depression and anxiety largely mirrored the children's reports, although parents of transgender children reported slightly higher anxiety in their children than the children did.

These findings are consistent with a previous report from the TYP that relied solely on parent reports.²⁴ The previous study found that parents reported normative levels of depression and marginally higher rates of anxiety in their transgender children. A key concern from the previous work was that parents who allowed their children to socially

transition might be biased in their reporting of mental health information from a desire to believe their children are doing well after allowing them to socially transition. The present findings are at odds with this interpretation, because parents reported very similar rates of anxiety and depression as did their children and, if anything, reported slightly greater anxiety in their children than did the children.

In addition, we found that transgender children did not differ from age- and gender-matched controls or siblings in self-worth. Interestingly, all 3 groups of children in this study reported higher self-worth than children in other studies of gender-typical children^{40,42} using the same scale.

Our findings of normative levels of depression, slightly higher rates of anxiety, and high self-worth in socially transitioned transgender children stand in marked contrast with previous work with gender-nonconforming children who had not socially transitioned.^{25,43–45} Those studies overwhelmingly reported markedly higher rates of anxiety and depression and lower self-worth, with disproportionate numbers of children in the clinical range. However, our ability to compare our findings with past findings is limited by differences in the criteria for study inclusion—the children in the present study believed they *were* of the “opposite” gender, whereas previous work focused on more diverse groups of gender-nonconforming children, including many who wished to be the “opposite” gender or who simply preferred toys and clothing associated with the “opposite” gender.^{1,46} More specifically, past studies focused on children who met criteria for gender identity disorder or subclinical manifestations of it, a diagnosis that did not require children to feel they were a member of the “opposite” gender. Future work would benefit from comparing children who feel that they are members of the “opposite” gender who have socially transitioned with children who feel they are members of the “opposite” gender who have not socially transitioned and with children who have some degree of gender dysphoria and might wish they were—but do not actually feel they are—members of the “opposite” gender. Work with children who have non-binary identities (children who identify as “both” or “neither” gender) also is sorely needed.

The present findings highlight a key question about whether social transitions per se caused the positive mental health outcomes observed in the transgender children in the present study. Because the present study did not randomly assign children who believed themselves to be members of the opposite gender to social transitions (a process that would be unethical), we cannot definitively draw this causal inference. Another potential issue with comparing these children with gender-nonconforming children who had not transitioned from the existing literature is that there could be systematic differences between children who have and those who have not socially transitioned (e.g., the former might have more extreme gender dysphoria). Nonetheless, these findings illustrate that there is a group of previously gender-nonconforming children who have socially transitioned and who are doing quite well. These and other recent findings^{24,47} are certainly suggestive that these transitions during childhood can be associated with positive outcomes, at least initially.

If we interpret these data to suggest that social transitions might be an effective intervention for at least some transgender children, how do we explain that social transitions in adulthood

are not always associated with positive mental health outcomes?^{16,22,48} One possible answer is that social transitions in childhood occur alongside various kinds of social support, which are often absent from social transitions in adulthood. Children who socially transition invariably have parental support for their identities, without which they would not be able to transition. Further, most children who socially transition in childhood have not developed secondary sex characteristics and thus are unilaterally perceived as being members of their perceived gender upon simply changing their hairstyle and clothing. In contrast, transgender adults often face family rejection, discrimination, prejudice, and even violence in their everyday lives based on their transgender identities. That socially transitioned transgender children have normative mental health could suggest that the psychopathology historically found in transgender individuals might be due to society's rejection of their transgender identities and/or years of repressing or denying their gender identity, rather than some difficulty intrinsic to identifying as a gender "opposite" one's natal sex.

We also cannot discount the possibility that the children in the present study are simply doing well while they are young but will face greater issues as they mature.⁹ As this cohort of transgender youth enters middle adolescence and adulthood, they could experience levels of rejection that they (or most of them) were protected from as children; they could face issues with dating and relationships; or they could later come to reject their transgender identity, a process that some have suggested could be associated with negative social consequences.^{9,49} In addition, the amount of time since a child's social transition, which we did not examine here, could be an important factor to consider in the mental health and adjustment of transgender children. Thus, following these children as they move into the teen and adult years will be critical not only to inform best practices on social transitions but also to illuminate the time course of mental health benefits (or decrements) of social transitions.

As one final note, the children in this study are disproportionately from higher-income backgrounds (Table 1), raising concerns about the generalizability of the present work. Further, because higher income is generally associated with better mental health outcomes in children,⁵⁰⁻⁵² this finding could suggest that socioeconomic status rather than social transitions explain the positive outcomes observed in this group. We are skeptical of this interpretation because previous work with high-income gender-nonconforming children who had not socially transitioned found rates of anxiety and depression that were substantially higher.⁴³ That work suggests that income alone does not eliminate mental health concerns in gender-nonconforming children. In addition, as presented in Tables 2 and 3, our findings with children from lower- and middle-income families suggest some reason to believe these findings could extend beyond wealthier families. Even so, until a larger sample of lower-income children is examined, we must be cautious in generalizing these results.

For the first time, this article reports on socially transitioned transgender children's mental health as reported by the children. Transgender children reported normative rates of depression and slightly higher rates of anxiety compared with their gender-typical siblings and a matched-control group. Transgender children also reported high self-worth, matching the siblings and matched controls. Future work with larger and more diverse samples will be especially useful to understand how widespread these positive mental health outcomes are

among socially transitioned transgender children and whether the low levels of psychopathology we observed will persist as these children move into their teen and adult years. This study supports other recent findings²⁴ that suggest a very strong identification with the gender “opposite” one’s sex at birth is not synonymous with high levels of psychopathology⁵³ and provides converging evidence that early family support is associated with positive mental health in transgender children.^{24,47,54}

Acknowledgments

This work was supported by grants from the Royalty Research Fund and the Arcus Foundation to K.R.O. These funding sources played no role in the study design, data collection, analysis, or interpretation, and no funding source saw the report before submission for publication.

The authors thank Madeleine DeMeules, BA, and Gabrielle Lindquist, BA, of the University of Washington, for data collection assistance, and Gabriella Ji, undergraduate, of the University of Washington, for data entry assistance.

References

1. Steensma TD, McGuire JK, Kreukels BP, Beekman AJ, Cohen-Kettenis PT. Factors associated with desistence and persistence of childhood gender dysphoria: a quantitative follow-up study. *J Am Acad Child Adolesc Psychiatry*. 2013; 52:582–590. [PubMed: 23702447]
2. Spack NP, Edwards-Leeper L, Feldman HA, et al. Children and adolescents with gender identity disorder referred to a pediatric medical center. *Pediatrics*. 2012; 129:418–425. [PubMed: 22351896]
3. Skagerberg E, Parkinson R, Carmichael P. Self-harming thoughts and behaviors in a group of children and adolescents with gender dysphoria. *Int J Transgend*. 2013; 14:86–92.
4. Malpas J. Between pink and blue: a multi-dimensional family approach to gender nonconforming children and their families. *Fam Process*. 2011; 50:453–470. [PubMed: 22145719]
5. Vance SR, Ehrensaft D, Rosenthal SM. Psychological and medical care of gender nonconforming youth. *Pediatrics*. 2014; 134:1184–1192. [PubMed: 25404716]
6. Jacob Lemay lives life as transgender child. NBC News; <http://www.nbcnews.com/storyline/transgender-kids/jacob-lives-life-transgender-child-n345296>. Broadcast April 2015 [Accessed September 3, 2015]
7. Coy Mathis’ family celebrates civil rights win for transgender child. The Denver Post; <http://www.denverpost.com/2013/06/24/coy-mathis-family-celebrates-civil-rights-win-for-transgender-child/>. Published June 24, 2013 [Accessed June 10, 2016]
8. Representative Mike Honda on his transgender granddaughter: “she’s beautiful”. Huffington Post; http://www.huffingtonpost.com/2015/03/05/mike-honda-transgender-daughter_n_6804806.html. Published March 5, 2013 [Accessed June 10, 2016]
9. Vilain, E., Bailey, JM. What should you do if your son says he’s a girl?. Los Angeles Times; <http://www.latimes.com/opinion/op-ed/la-oe-vilain-transgender-parents-20150521-story.html>. Published May 21, 2015 [Accessed September 3, 2015]
10. Soh, D. The transgender battle line: childhood. Wall Street Journal; <http://www.wsj.com/articles/the-transgender-battle-line-childhood-1451952794>. Published January 4, 2016 [Accessed June 10, 2016]
11. Walsh, M. This poor child is confused, not “transgendered”. Matt Walsh Blog; <http://themattwalshblog.com/2014/06/03/this-poor-child-is-confused-not-transgendered/>. Published June 2014 [Accessed September 24, 2016]
12. “Zero, zilch, nada” evidence to support gender transition of young children. 4thWaveNow; <https://4thwavenow.com/2015/10/20/zero-zilch-nada-evidence-to-support-gender-transition-of-young-children/>. Published October 2015 [Accessed September 24, 2016]
13. Dreger, A. The big problem with outlawing gender conversion therapies. Wired; <http://www.wired.com/2015/06/big-problem-outlawing-gender-conversion-therapies/>. Published June 2015 [Accessed September 3, 2015]

14. Kuvalanka KA, Weiner JL, Mahan D. Child, family, and community transformations: findings from interviews with mothers of transgender girls. *J GLBT Fam Stud*. 2014; 10:354–379.
15. Clark TC, Lucassen MF, Bullen P, et al. The health and well-being of transgender high school students: results from the New Zealand adolescent health survey (Youth'12). *J Adolesc Health*. 2014; 55:93–99. [PubMed: 24438852]
16. Budge SL, Adelson JL, Howard KAS. Anxiety and depression in transgender individuals: the roles of transition status, loss, social support, and coping. *J Consult Clin Psychol*. 2013; 81:545–557. [PubMed: 23398495]
17. Grossman AH, D'Augelli AR. Transgender youth: invisible and vulnerable. *J Homosex*. 2006; 51:111–128. [PubMed: 16893828]
18. Colizzi M, Costa R, Todarello O. Transsexual patients' psychiatric comorbidity and positive effect of cross-sex hormonal treatment on mental health: results from a longitudinal study. *Psychoneuroendocrinology*. 2014; 39:65–73. [PubMed: 24275005]
19. Clements-Nolle K, Marx R, Katz M. Attempted suicide among transgender persons: The influence of gender-based discrimination and victimization. *J Homosex*. 2006; 51:53–69. [PubMed: 17135115]
20. Haas AP, Eliason M, Mays VM, et al. Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: review and recommendations. *J Homosex*. 2010; 58:10–51.
21. Terada S, Matsumoto Y, Sato T, Okabe N, Kishimoto Y, Uchitomi Y. Suicidal ideation among patients with gender identity disorder. *Psychiatry Res*. 2011; 190:159–162. [PubMed: 21612827]
22. Grant, JM., Mottet, L., Tanis, JE., Harrison, J., Herman, J., Keisling, M. *Injustice at Every Turn: A Report of the National Transgender Discrimination Survey*. Washington, DC: National Center for Transgender Equality; 2011.
23. Grossman AH, D'Augelli AR. Transgender youth and life-threatening behaviors. *Suicide Life Threat Behav*. 2007; 37:527–537. [PubMed: 17967119]
24. Olson KR, Durwood L, DeMeules M, McLaughlin KA. Mental health of transgender children who are supported in their identities. *Pediatrics*. 2016; 137:e20153223. [PubMed: 26921285]
25. Cohen-Kettenis PT, Owen A, Kaijser VG, Bradley SJ, Zucker KJ. Demographic characteristics, social competence, and behavior problems in children with gender identity disorder: a cross-national, cross-clinic comparative analysis. *J Abnorm Child Psychol*. 2003; 31:41–53. [PubMed: 12597698]
26. Wallien MS, Van Goozen SH, Cohen-Kettenis PT. Physiological correlates of anxiety in children with gender identity disorder. *Eur Child Adolesc Psychiatry*. 2007; 16:309–315. [PubMed: 17401613]
27. Zucker, KJ., Bradley, SJ. *Gender Identity Disorder and Psychosexual Problems in Children and Adolescents*. New York: Guilford Press; 1995.
28. Achenbach TM, McConaughy SH, Howell CT. Child/adolescent behavioral and emotional problems: implications of cross-informant correlations for situational specificity. *Psychol Bull*. 1987; 101:213. [PubMed: 3562706]
29. Cantwell DP, Lewinsohn PM, Rohde P, Seeley JR. Correspondence between adolescent report and parent report of psychiatric diagnostic data. *J Am Acad Child Adolesc Psychiatry*. 1997; 36:610–619. [PubMed: 9136495]
30. De Los Reyes A, Kazdin AE. Informant discrepancies in the assessment of childhood psychopathology: a critical review, theoretical framework, and recommendations for further study. *Psychol Bull*. 2005; 131:483. [PubMed: 16060799]
31. Edelbrock C, Costello AJ, Dulcan MK, Conover NC, Kala R. Parent-child agreement on child psychiatric symptoms assessed via structured interview. *J Child Psychol Psychiatry*. 1986; 27:181–190. [PubMed: 3958075]
32. Nickerson RS. Confirmation bias: a ubiquitous phenomenon in many guises. *Rev Gen Psychol*. 1998; 2:175.
33. McGee ROB, Williams S. Does low self-esteem predict health compromising behaviours among adolescents? *J Adolesc*. 2000; 23:569–582. [PubMed: 11073698]
34. Sowislo JF, Orth U. Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. *Psychol Bull*. 2013; 139:213. [PubMed: 22730921]

35. Trzesniewski KH, Donnellan MB, Moffitt TE, Robins RW, Poulton R, Caspi A. Low self-esteem during adolescence predicts poor health, criminal behavior, and limited economic prospects during adulthood. *Dev Psychol.* 2006; 42:381. [PubMed: 16569175]
36. McGee R, Williams S, Nada-Raja S. Low self-esteem and hopelessness in childhood and suicidal ideation in early adulthood. *J Abnorm Child Psychol.* 2001; 29:281–291. [PubMed: 11523834]
37. Hughes HM. Measures of self-concept and self-esteem for children ages 3–12 years: a review and recommendations. *Clin Psychol Rev.* 1984; 4:657–692.
38. Irwin DE, Stucky B, Langer MM, et al. An item response analysis of the pediatric PROMIS anxiety and depressive symptoms scales. *Qual Life Res.* 2010; 19:595–607. [PubMed: 20213516]
39. Varni JW, Thissen D, Stucky BD, et al. PROMIS® Parent Proxy Report Scales: an item response theory analysis of the parent proxy report item banks. *Qual Life Res.* 2012; 21:1223–1240. [PubMed: 21971875]
40. Harter, S. *Self-Perception Profile for Children: Manual and Questionnaires.* Denver, CO: University of Denver; 2012.
41. McKean AJ, Voort JLV, Croarkin PE. Lack of rating scale normalization and a socioeconomically advantaged population limits the generalizability of preadolescent transgender findings. *Pediatrics.* 2016; 138:e20161203A.
42. Grills AE, Ollendick TH. Peer victimization, global self-worth, and anxiety in middle school children. *J Clin Child Adolesc Psychol.* 2002; 31:59–68. [PubMed: 11845651]
43. Singh D, Bradley SJ, Zucker KJ. Commentary on “An Affirmative Intervention for Families with Gender Variant Children: Parental Ratings of Child Mental Health and Gender” by Hill, Menvielle, Sica, and Johnson (2010). *J Sex Marital Ther.* 2011; 37:151–157. [PubMed: 21400339]
44. Balleur-van Rijn A, Steensma TD, Kreukels BP, Cohen-Kettenis PT. Self-perception in a clinical sample of gender variant children. *Clin Child Psychol Psychiatry.* 2013; 18:464–474. [PubMed: 23028200]
45. Aitken M, VanderLaan DP, Wasserman L, Stojanovski S, Zucker KJ. Self-harm and suicidality in children referred for gender dysphoria. *J Am Acad Child Adolesc Psychiatry.* 2016; 55:513–520. [PubMed: 27238070]
46. Olson KR. Prepubescent transgender children: what we do and do not know. *J Am Acad Child Adolesc Psychiatry.* 2016; 55:155. [PubMed: 26903246]
47. Hill DB, Menvielle E, Sica KM, Johnson A. An affirmative intervention for families with gender variant children: parental ratings of child mental health and gender. *J Sex Marital Ther.* 2010; 36:6–23. [PubMed: 20063232]
48. Dhejne C, Lichtenstein P, Boman M, Johansson AL, Långström N, Landén M. Long-term follow-up of transsexual persons undergoing sex reassignment surgery: cohort study in Sweden. *PloS One.* 2011; 6:e16885. [PubMed: 21364939]
49. Steensma TD, Cohen-Kettenis PT. Gender transitioning before puberty? *Arch Sex Behav.* 2011; 40:649–650. [PubMed: 21373942]
50. Meltzer H, Gatward R, Goodman R, Ford T. Mental health of children and adolescents in Great Britain. *Int Rev Psychiatry.* 2003; 15:185–187. [PubMed: 12745331]
51. Duncan GJ, Brooks-Gunn J, Klebanov PK. Economic deprivation and early childhood development. *Child Dev.* 1994; 65:296–318. [PubMed: 7516849]
52. McLaughlin KA, Costello EJ, Leblanc W, Sampson NA, Kessler RC. Socioeconomic status and adolescent mental disorders. *Am J Public Health.* 2012; 102:1742–1750. [PubMed: 22873479]
53. Coates S, Person ES. Extreme boyhood femininity: isolated behavior or pervasive disorder? *J Am Acad Child Psychiatry.* 1985; 24:702–709. [PubMed: 4067139]
54. Simons L, Schragger SM, Clark LF, Belzer M, Olson J. Parental support and mental health among transgender adolescents. *J Adolesc Health.* 2013; 53:791–793. [PubMed: 24012067]

TABLE 1

Sociodemographic Characteristics of Participants Completing (A) Mental Health Measurements and (B) Self-Worth Measurement

| | Participants Completing Mental Health Measurements | | | Difference Among Groups |
|--------------------------------------|--|--------------------|-------------------|--------------------------------|
| | Transgender (n = 63) | Controls (n = 63) | Siblings (n = 38) | |
| Gender ^a | | | | $\chi^2 = 0.10, p = .952^d$ |
| Boys | 33 | 33 | 21 | |
| Girls | 30 | 30 | 17 | |
| Race or ethnicity ^b | | | | $\chi^2 = 0.73, p = .693$ |
| White, non-Hispanic | 37 | 41 | 25 | |
| Black | 1 | 0 | 1 | |
| Hispanic | 8 | 3 | 6 | |
| Asian | 4 | 2 | 1 | |
| Multiracial/other | 13 | 17 | 5 | |
| Age (y), mean (SD) | 10.8 (1.3) | 10.9 (1.4) | 10.6 (1.2) | $F_{2,161} = 0.53, p = .590$ |
| Annual family income, % ^c | | | | $F_{2,161} = .640, p = .529^e$ |
| <\$25,000 | 0 | 0 | 1 | |
| \$25,001–\$50,000 | 4 | 9 | 5 | |
| \$50,001–\$75,000 | 14 | 4 | 5 | |
| \$75,001–\$125,000 | 23 | 20 | 13 | |
| >\$125,000 | 22 | 30 | 14 | |
| | Participants Completing Self-Worth Measurement | | | |
| | Transgender (n = 116) | Controls (n = 122) | Siblings (n = 72) | Difference Among Groups |
| Gender ^a | | | | $\chi^2 = 4.95, p = .084$ |
| Boys | 48 | 49 | 40 | |
| Girls | 68 | 73 | 32 | |
| Race or ethnicity ^b | | | | $\chi^2 = 0.12, p = .943$ |
| White, non-Hispanic | 75 | 79 | 45 | |
| Black | 1 | 0 | 0 | |
| Hispanic | 14 | 8 | 12 | |
| Asian | 6 | 4 | 3 | |
| Multiracial or other | 20 | 31 | 12 | |
| Age (y), mean (SD) | 9.3 (2.0) | 9.2 (2.0) | 9.1 (1.8) | $F_{2,307} = 0.18, p = .840$ |
| Annual family income, % ^c | | | | $F_{2,307} = 3.14, p = .045^e$ |
| <\$25,000 | 3 | 1 | 4 | |
| \$25,001–\$50,000 | 9 | 10 | 9 | |
| \$50,001–\$75,000 | 22 | 11 | 10 | |
| \$75,001–\$125,000 | 42 | 44 | 22 | |
| >\$125,000 | 40 | 56 | 27 | |

Note: SD = standard deviation.

^aGender for transgender participants refers to asserted gender, not sex.

^bRace difference was assessed as percentage of white versus non-white in χ^2 analyses owing to small numbers of each non-white group.

^cFor comparison across groups, income was converted to a scale of 1 to 5.

^dTransgender and control participants were matched for gender. When samples are unequal, it was because fewer transgender participants completed the task because of experimenter error (failing to provide the measurement) or participants' requests to stop participation.

^eAlthough there was a significant difference in mean income, no single group comparison was significant as indicated by Tukey post hoc tests (control versus transgender, $p = .146$; control versus siblings, $p = .058$; transgender versus controls, $p = .793$).

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

TABLE 2

Self-Report Anxiety and Depression Mean (Standard Deviation) *T*Scores and Percentage of Children in the Clinical Range by Participant Group

| | Transgender | Controls | Siblings |
|--|--------------------|-----------------|-----------------|
| All participants, n | 63 | 63 | 38 |
| Depression | 48.7 (9.4) | 46.4 (8.0) | 47.9 (7.9) |
| In clinical range, % | 6 | 2 | 3 |
| Anxiety | 52.0 (9.6) | 49.0 (7.7) | 52.8 (10.5) |
| In clinical range, % | 13 | 3 | 16 |
| Participants with family income <\$75,000, n | 18 | 13 | 11 |
| Depression child report | 46.7 (9.3) | 47.3 (10.8) | 45.2 (6.3) |
| In clinical range, % | 0 | 8 | 0 |
| Anxiety child report | 59.5 (7.5) | 48.5 (10.5) | 51.6 (10.8) |
| In clinical range, % | 6 | 15 | 9 |

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

TABLE 3

Parent Report Anxiety and Depression Mean (Standard Deviation) *T*Scores and Percentage of Children in the Clinical Range by Participant Group

| | Transgender | Controls | Siblings |
|--|--------------------|-----------------|-----------------|
| All participants, n | 63 | 63 | 38 |
| Depression | 50.2 (8.8) | 49.4 (7.8) | 48.9 (7.1) |
| In clinical range, % | 6 | 3 | 0 |
| Anxiety | 54.9 (9.0) | 49.6 (8.6) | 51.0 (8.2) |
| In clinical range, % | 22 | 5 | 8 |
| Participants with family income <\$75,000, n | 18 | 13 | 11 |
| Depression | 53.4 (8.6) | 50.8 (11.1) | 48.0 (6.9) |
| In clinical range, % | 5 | 8 | 0 |
| Anxiety | 56.2 (8.4) | 50.0 (6.8) | 50.6 (7.1) |
| In clinical range, % | 21 | 0 | 9 |

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Sample Size and Mean (Standard Deviation) of Transgender Children's and Parents' Reports of Depression and Anxiety as a Function of Whether the Child Is on Cross-Sex Hormones, Blockers, or no Medical Intervention

TABLE 4

| | Sample Size | Child-Report Depression | Child-Report Anxiety | Parent-Report Depression | Parent-Report Anxiety |
|--------------------------------------|-------------|-------------------------|----------------------|--------------------------|-----------------------|
| Cross-sex hormones | 5 | 48.7 (8.1) | 48.7 (8.8) | 49.3 (9.5) | 51.0 (10.5) |
| Hormone blockers | 18 | 48.6 (9.1) | 51.4 (8.3) | 50.9 (8.3) | 54.0 (8.2) |
| No medical intervention ^a | 39 | 48.4 (9.8) | 52.6 (10.4) | 49.9 (9.3) | 55.7 (9.4) |

Note: No differences between groups were significant ($p > .500$ for all comparisons).

^aOne child who had no medical intervention but who was experiencing puberty is excluded from this table.

TABLE 5

Sample Size and Mean (Standard Deviation) for Self-Worth Measurement

| | Transgender | Control | Sibling |
|-----------|--------------------------|--------------------------|--------------------------|
| 6–8 y | | | |
| n | 53 | 59 | 35 |
| Mean (SD) | 3.50 (0.54) ^a | 3.62 (0.39) ^a | 3.62 (0.40) ^a |
| 9–11 y | | | |
| n | 49 | 48 | 32 |
| Mean (SD) | 3.47 (0.55) ^a | 3.68 (0.35) ^a | 3.64 (0.47) ^a |
| 12–14 y | | | |
| n | 14 | 14 | 5 |
| Mean (SD) | 3.30 (0.51) ^a | 3.37 (0.64) ^a | 3.43 (0.59) ^b |

Note:

^aOne-sample t test indicates value is significantly above the midpoint of the scale, indicating high self-esteem ($p < .001$).^b $p = .023$.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript