Mental Health and Self-Worth in Socially-Transitioned Transgender Youth

RH: Mental Health in Transgender Youth

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This article is discussed in an editorial by Mr. Jack Turban on page xx.

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ABSTRACT

Objective. Social transitions are increasingly common among 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 wellbeing of socially transitioned transgender children. In this study, we examined self-reported depression, anxiety, and self-worth among socially transitioned transgender children as compared to two control groups: age- and gender-matched controls and siblings of transgender children.

Method. As part of a longitudinal study (the TransYouth Project), children (ages 9-14 years old) and their parents completed measures of depression and anxiety (*n*=63 transgender children, *n*=63 controls, *n*=38 siblings). Children (ages 6-14; *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 to national averages, transgender children showed typical rates of depression, p=.290, and marginally higher 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 has found very high rates of depression and anxiety. These findings reduce concerns from previous work that parents of socially transitioned children could be systematically underreporting mental health problems.

Key words: Transgender children, gender nonconformity, social transitions, mental health, self-worth

INTRODUCTION

A growing number of parents of transgender children, or children who identify as the gender "opposite" their natal sex (e.g., natal males who assert that they are girls, natal females who assert that they are boys), have allowed their children to "socially transition." A social transition is a nonmedical decision to allow a child to change his/her first name, pronouns, hairstyle, and clothing in order 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, alleviating mental health problems and improving the child's wellbeing almost immediately[14]. Despite considerable debate surrounding 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 elevated rates of anxiety and depression[15–18], as well as alarming rates of suicidality.[19–23] Some estimates suggest 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 paper examined parent-reported mental health in these children[24]. Parents reported that socially transitioned transgender children had normative levels of depression and marginally elevated levels of anxiety relative to national norms. When compared to their siblings and age- and gender-matched controls, no significant elevations in anxiety and depression were observed. These findings were notable because previous work with gender nonconforming children who had *not* socially transitioned reported drastically elevated 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. First, even in children who are "gender-typical," parents often under-report internalizing symptoms, possibly because they are unaware of these internal experiences[28–31]. The tendency to underreport internalizing symptoms may be especially likely for parents of socially-transitioned transgender children because these parents could be motivated (either 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]—seeking out information that supports their existing beliefs. In this way, a parent 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, we assessed self-worth. Previous work suggests that self-worth is an important predictor of future mental health outcomes in typically developing children and adolescents,[33–36] and self-worth measures can be used reliably with

children at young ages.[37]

The current work therefore assessed socially-transitioned transgender children's self-worth (ages 6-14) and mental health (anxiety, depression, ages 9-14) compared to a group of age-matched controls and a group of siblings of transgender children. In addition, we compared children's reports of their own anxiety and depression to 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, via 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 one Canadian province: 22% in 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. Among the families of transgender children, 52% of the families identified themselves as living in a suburban area, 25% in an urban area, 17% in a small town, 3% in a rural area, and the remaining 3% listed multiple categories.

To be included as a transgender participant in the present study, children (1) needed to identify as the gender opposite their natal sex in everyday life, (2) must have socially transitioned by using the pronoun associated with their asserted gender in all contexts[1], and (3) were enrolled in the study between March 2015 and February 2016 (when the present measures were included).

The TransYouth Project also includes two 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 can be seen in the Supplement 1, available online.

The current analytic sample includes 63 transgender children, 63 age-matched controls, and 38 siblings aged 9-14 who completed the depression and anxiety measures. Their parents also reported on child's depression and anxiety symptoms. The analytic sample for the self-worth measure includes 116 transgender children, 122 control children, and 72 siblings between the ages of 6-14, inclusive of most of the children who completed the mental health measures. Demographics for these groups can be seen in Table 1, and detailed inclusion information is available in Supplement 1, available online.

Procedure

Whenever possible, parents and children completed measures in separate rooms, or far enough apart in the same room to be out of earshot. For children 11 and younger, the researcher read questions out loud, and the child could answer out loud or point to their response on a scale with response options. Parents and children aged 12 and above completed written versions of the measures privately, with a researcher nearby to answer questions if needed. All procedures and recruitment were approved by the authors' institutional review board.

Measures

Internalizing Psychopathology. Children reported on anxiety (α=.858) and depression (α=.859) symptoms using the pediatric short form of the National Institutes of Health's Patient Reported Outcomes Measurement Information System (PROMIS) scale,[38] while parents

completed the proxy versions of the anxiety (parent 1: α=.935, parent 2: α=.912) and depression (parent 1: α=.880; parent 2: α=.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 over the last 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 are 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 63 or above indicating clinically significant anxiety or depression (the top 10% of all children).

All child-reported data in this paper 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 also reported in a previous paper[24] (though for 10 transgender children, 7 controls, and 7 siblings, the current 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 measures in the current work, 36 children had two parents who completed assessments, and the remaining 27 children had one parent who completed assessments. Of the 38 siblings who filled out anxiety and depression measures, 25 children had two parents who completed assessments, and 13 children had one parent who completed assessments. Only one parent was present for participation with control children, and therefore only one parent completed an assessment. For consistency with past work,[24] when children had two parent reporters, we averaged the two parents' responses (in general, the two parents' responses were associated: depression, r=.508,

p<.001, n=61; anxiety, r=.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 two 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 child made a selection, they were asked whether this was "sort of true" or "really true." Responses were re-coded to a scale from 1-4, such that scores of 1 indicated the lowest self-worth and 4 indicated the highest. Scores were computed by averaging the six items (α=.671). This measure was administered to children aged 6-14 in the present work.

RESULTS

Internalizing Symptoms. We found no differences in self-reported depressive symptoms across the three groups (see Table 2 for means), $F(2, 161) = 1.18$, p=.311. Similarly, we found no significant, albeit a marginal, difference in self-reported anxiety symptoms across the three study groups, $F(2, 161) = 2.62$, p=.076. Post-hoc Tukey tests revealed that controls did not differ from transgender, p=.160, or sibling groups, 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 measure. With regard to depressive symptoms, the transgender group did not differ from national averages, $t(62) = 1.07$, p=.290, nor did the sibling group, $t(37) = 1.63$, p=.112, while the matched-control group showed lower than average depressive symptoms, $t(62)=3.54$, p=.001. With regard to anxiety, the transgender group did not differ from national averages, $t(62) = 1.69$, p=.096, nor did the control group, $t(62) = 0.99$, p=.328, or the sibling group, $t(37) = 1.67$, p= .104. Rates of children in the clinical range

for depression and anxiety (T-scores of 63 or above, 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 seen in the Supplemental Information.

Parents also reported no differences between groups on depressive symptoms, $F(2, 161) = .32$, p=.728, but did report significant differences on anxiety symptoms, $F(2, 161) = 6.22$, p=.002 (See Table 3 for 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, though siblings and matched controls did not differ from one another, p=.718. Again we compared these values to the expected national average (T=50), finding 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 amongst the transgender group, t(62)=4.32, p=<.001. Parents reported results that did not differ from national averages for the control, t(62)=0.37, p=.714, or sibling groups, t(37)=0.74, p=.463. Rates of children in the clinical range for depression and anxiety (T-scores of 63 or above) 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 themselves 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. As previous work has pointed out that the TransYouth Project 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 of $75,000 or less. These means, as

well as percentage of participants in the clinical range, can be seen in Tables 2 and 3.

In addition, our 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 shows the mean anxiety and depression score for children in each of these groups as reported by the children themselves and their parents. None of the differences between these groups approached significance: all ps>.500.

Self-Worth. Our age range and sample size was considerably larger for self-worth, allowing us to examine not only differences between conditions, but also differences by age group. We therefore ran a condition (transgender, control, sibling) X age group (6-8, 9-11, 12-14) between-participants analysis of variance (ANOVA). 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, $F(4, 300)=0.18$, $p=.949$. See Table 5 for 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 among socially transitioned transgender children in the current study. Transgender children reported normative rates of depression and slightly elevated rates of anxiety. Rates of depression among transgender children did not differ significantly from siblings of transgender children nor from age- and gender-matched controls, while rates of anxiety were marginally higher. Parents' reports of their children's depression and anxiety largely mirrored the children's reports, though parents of transgender children report slightly higher anxiety amongst their children than the children

themselves 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 have allowed their children to socially transition might be biased in their reporting of mental health information due to a desire to believe their children are doing well after allowing them to socially transition. The current findings are at odds with this interpretation, as 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 themselves.

In addition, we found that transgender children did not differ from age- and gender-matched controls or siblings in terms of self-worth. Interestingly, all three groups of children in our study reported higher self-worth than children in other studies of gender-typical children[40,42] utilizing the same scale.

Our findings of normative levels of depression, slightly elevated rates of anxiety, and high self-worth in socially-transitioned transgender children stand in marked contrast with previous work with gender nonconforming children who have not socially transitioned[25,43–45]. Those studies overwhelmingly reported markedly elevated rates of anxiety and depression and lower self-worth, with disproportionate numbers of children in the clinical range. Our ability to compare our findings to past findings, however, is limited due to differences in the criteria for study inclusion—the children in our study feel that they *are* the "opposite" gender, while 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

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 felt gender upon simply changing their hairstyle and clothing. In contrast, transgender adults often face family rejection, as well as discrimination, prejudice, and even violence in their everyday lives on the basis of their transgender identities. That socially-transitioned transgender children have normative mental health, could suggest that the psychopathology historically found in transgender individuals may 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 current 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 may experience levels of rejection that they (or most of them) were protected from as children; they may face issues with dating and relationships; or they may later come to reject their transgender identity, a process that some have suggested could be associated with negative social consequences[9,49]. It is also possible that the amount of time since a child's social transition, which we did not examine here, is an important factor to consider in the mental health and adjustment of transgender kids. Thus, following these children as they move into the teen and adult years will be critical not only to inform best practices surrounding 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 paper are disproportionately from higher-income backgrounds (see Table 1), raising concerns about the generalizability of the current work. Further, given that 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 could explain the positive outcomes observed in this group. We are skeptical of this interpretation given that previous work with high-income gender nonconforming children who had not socially-transitioned found rates of anxiety and depression that are substantially higher[43]. That work suggests that income alone does not eliminate mental health concerns in gender nonconforming children. In addition, as can be seen 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 paper reports on socially transitioned transgender children's mental health as reported by the children themselves. Transgender children report normative rates of depression and slightly elevated rates of anxiety when compared with their gender-typical siblings and a matched control group. Transgender children also reported high self-worth, matching their 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 as well as whether the low levels of psychopathology we observed here will persist as these children move into their teen and adult years. This paper supports other recent findings[24] that suggest a very strong identification with the gender "opposite" one's sex at birth is not synonymous with high levels of

psychopathology,[53] and provides converging evidence that early family support is associated with positive mental health in transgender children.[24,47,54]

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Table 1: Sociodemographic Characteristics of Participants Completing (A) Mental Health Measures and (B) Self-Worth Measure

Participants completing mental health measures

	Transgender (n = 63)	**Controls** (n = 63)	**Siblings** (n = 38)	**Diff. between groups**
Gender[a]				X^2=0.10, p=.952[e]
Boy	33	33	21	
Girl	30	30	17	
Race/ethnicity[b]				X^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	
Mean age	10.8 years (SD=1.3 years)	10.9 years (SD=1.4 years)	10.6 years (SD=1.2 years)	F(2,161)=0.53, p=.590
Annual family income[c] **%**				F(2,161)=.640, p=.529[f]
<$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 measure

	Transgender (n = 116)	**Controls** (n = 122)	**Siblings** (n = 72)	**Diff. between groups**
Gender[a]				X^2=4.95, p=.084
Boy	48	49	40	
Girl	68	73	32	
Race/ethnicity[b]				X^2=0.12, p=.943
White, non-Hispanic	75	79	45	
Black	1	0	0	
Hispanic	14	8	12	
Asian	6	4	3	
Multiracial/other	20	31	12	
Mean age	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[f]
<$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:
[a]Gender for transgender participants refers to asserted gender, not sex.
[b]Race difference was assessed as percentage White versus non-White in chi-square analyses due to low numbers of each non-White group.
[c]For comparison across groups, income was converted to a 1-5 scale.
[e]Transgender and control participants were matched for gender. When samples are unequal, it was because fewer transgender participants completed the task due to experimenter error (failing to provide the measure) or participants' requests to stop participation.
[f]While there was a significant difference in mean income, no single group comparison was significant as indicated by Tukey post hoc tests, control vs. trans, p=.146, control vs. siblings, p=.058, trans vs. controls, p=.793.

Table 2. Self-Report Anxiety and Depression Mean (and Standard Deviation) T Scores and the Percentage of Children in the Clinical Range by Participant Group

	Transgender (n = 63)	Controls (n = 63)	Siblings (n = 38)
All Participants			
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	n=13	n=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

Table 3. Parent Report Anxiety and Depression Mean (and Standard Deviation) T Scores and the Percentage of Children in the Clinical Range by Participant Group

	Transgender (n = 63)	Controls (n = 63)	Siblings (n = 38)
All Participants			
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	n=13	n=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

Table 4. Sample Size and Mean (With Standard Deviation) of Transgender Children's and Parents' Reports of Depression and Anxiety as a Function of Whether Child is on Cross-Sex Hormones, Blockers, or no Medical Intervention

	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, ps>.500.
[a]One child who had no medical intervention but who was experiencing puberty is excluded from this table.

Table 5. Sample Size, Mean (and Standard Deviation) for Self-Worth Measure

		Transgender	Control	Sibling
6-8 y	n	53	59	35
	M (SD)	3.50 (.54)[a]	3.62 (.39)[a]	3.62 (.40)[a]
9-11 y	n	49	48	32
	M (SD)	3.47 (.55)[a]	3.68 (.35)[a]	3.64 (.47)[a]
12-14 y	n	14	14	5
	M (SD)	3.30 (.51)[a]	3.37 (.64)[a]	3.43 (.59)[b]

[a]One-sample t-test indicates value is significantly above mid-point of scale, indicating high self-esteem, p<.001.
[b] p=.023.

Supplement 1

Additional Participant Information

During the testing period (March 2015-February 2016), 60 transgender children aged 6-8 participated in a session with the TransYouth Project (TYP). 53 of these children completed the self-worth measure and are included in the present analyses. The remaining 7 participants did not complete the self-worth measure because the experimenter administered a version of the questionnaire that did not include this measure (n=4) or because the child was too distracted to continue or asked not to continue (n=3). In addition, 63 transgender children aged 9-14 participated in a session with TYP during the testing period. All 63 of these children completed the self-worth measure and the depression and anxiety measures.

After participation, each transgender child was matched to a control child based on identified gender (not sex) and age (within 4 months). Of the 60 matched controls who were paired with a transgender child aged 6-8, 59 completed the self-worth measure. The one participant who did not complete the self-worth measure did so because the experimenter administered a version of the questionnaire that did not include this measure. In addition, 63 control children aged 9-14 participated in a session with TYP. All of these children completed depression and anxiety measures, and 62 of these children completed the self-worth measure. The one control who did not complete the self-worth measure failed to do so because the experimenter administered a version of the questionnaire that did not include this measure.

In addition, 76 siblings of transgender children participated in this study during the testing period and were between the ages of 6 and 14. The siblings of transgender children included in this sample did not necessarily have a transgender sibling represented in the current paper as the associated transgender child could have been 4 years old (too young for the current

work), but the sibling could have been within the age range for the current work. Of the 38 siblings who were 6-8 years old, 35 completed the self-worth measure. The remaining 3 participants did not complete the self-worth measure because the child was too distracted to continue or asked not to continue. In addition, 38 siblings aged 9-14 participated in a session with TYP during the testing period. All of these siblings completed depression and anxiety measures, and 37 of these siblings completed the self-worth measure. The one 9-14 year old who did not complete the self-worth measure failed to do so because the child asked not to skip the measure.

Alternative Analyses

In an effort to be consistent with previous work, the main manuscript utilized parent reports from two parents whenever possible. However, one concern with this approach is that it meant that parents of transgender children and siblings often had two reporters whose scores were averaged, while control participants only ever had one parent reporter. We therefore also ran analyses utilizing only one parent reporter—a mother whenever one was available. Utilizing this approach yielded identical results as detailed below.

Utilizing this approach, parents reported no differences between groups on depressive symptoms ($F[2, 161] = .69$, p=.501), but did report significant differences on anxiety symptoms ($F[2, 163] = 3.47$, p=.033). Post hoc Tukey tests indicated that parents reported higher rates of anxiety in transgender participants than in controls (p=.041), but these rates did not differ from siblings (p=.129), and siblings and matched controls did not differ from one another (p=.983). We compared these values to national averages, finding no differences from national averages on depression for any group: transgender (t[62]=0.48, p=.636); control (t[62]=0.63, p=.530); siblings (t[37]=1.76, p=.087). However, parents reported higher than average anxiety amongst

the transgender group (t[62]=2.92, p=.005). Parents reported results that did not differ from national averages for the control (t[62]=0.37, p=.714) or sibling groups (t[37]=0.04, p=.972).

As in the main paper, we again observed that parents reported equal rates of depression (t[62]=0.47, p=.644) but significantly more anxiety (t[62]=2.55, p=.013) than children reported.

Analyses Based on Clinical Range (vs. Not)

We compared the percentage of children in each group to 10% (the expected percentage of children who would be in the clinical range) using a Chi-Square Goodness-of-Fit test. The percentage of transgender children in the clinical range did not differ from 10% for depression (p=.334) or anxiety (p=.475), according to children's own reports. For siblings, the percentage in the clinical range also did not differ significantly from the expected 10%, for depression (p=.130) or anxiety (p=.234), based on child reports. Control participants, however, were less likely to be in the clinical range than expected by chance for depression (X^2[1]=4.95, p=.026) and were marginally less likely to be in the clinical range than chance on anxiety (X^2[1]=3.26, p=.071), according to child reports. We utilized the Freeman-Halton extension of the Fisher Exact Probability test to examine whether these differences in the percentage of children showing clinical rates of anxiety and depression differed by groups (using http://vassarstats.net/fisher2x3.html). Children did not differ by group in reporting clinical levels of depression (p=.445), though they differed marginally in their rate of clinically significant anxiety (p=.063), mirroring the overall depression and anxiety findings.

Utilizing parent ratings, we found that parents reported transgender children as no more likely than chance (10%) to be in the clinical range for depression (p=.166), but did rate their transgender children as more likely than chance to be in the clinical range on anxiety (X^2[1]=5.73, p=.017). Parents did not report the siblings of transgender children as any more or

less likely than chance to be in the clinical range for anxiety (p=.665), and as no siblings were in the clinical range for depression, no statistic could be calculated, indicating that if anything, siblings were less likely to be in the clinical range for depression than expected. For control children, parents indicated that they were no more likely to be in the clinical range than chance for anxiety, p=.166, and they were marginally less likely than chance to be in the clinical range for depression ($X^2[1]=3.26$, p=.071). Rates of meeting clinical levels of depression did not differ between groups as rated by parents (p=.727), but rates of clinical levels of anxiety did (p=.039). Again, the results of rates in the clinical range showed the same pattern as reports of overall mean anxiety and depression.