

Frequently Asked Questions for “Similarity in transgender and cisgender children’s gender development” *PNAS*

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Key terms in this FAQ and the associated manuscript

Assigned sex – We use this term to refer to the sex announced the day a child is born. “Assigned males” are children who have genitalia and chromosomes indicating a male sex at birth while “assigned females” are children who have the genitalia and chromosomes indicating a female sex at birth. The children in this work were all assigned male or female at birth.

Social transition – We use this term to refer to a change in a child’s outward appearance and gender pronoun use. For example, an assigned male would be said to socially transition if this child grew long hair, started wearing dresses and was referred to with pronouns “her” and “she.” In the present study, the pronoun change was used as the key criteria that a transition has occurred. A social transition, for the purposes of this paper, does not indicate any medical (hormonal, surgical) changes have occurred.

Transgender – We use this term to refer to children who have socially transitioned and are using the binary pronouns (he or she) that differ from the binary pronouns used to describe them at birth.

Cisgender – We use this term to refer to children who live and present as the gender that is typically associated with their assigned sex.

What were the main findings from this study?

In the largest study ever of transgender children, we found that 3- to 12-year-old transgender children showed strong identification with their current gender and showed strong preferences for toys, clothing, etc., typically associated with their current gender, not their assigned sex. The magnitude of their identification and preferences was unrelated to how long they had lived as their current gender. Transgender children’s identities and preferences generally did not differ from their same-gender cisgender peers.

This study was the largest study to date to document transgender children’s gender development and shows that transgender children gender development shows similar patterns when compared to cisgender children. The study had three main findings. First, the study found that 3- to 12-year-old transgender children show strong identification and preferences aligned with their current gender, and not the gender associated with their assigned sex. Additionally, the length of time that transgender children had spent living as their current gender (i.e., the time that had passed since they had socially transitioned) was not associated with the strength of their gender identity or the extremity of their gender-typed preferences. That is, on average, a child who socially transitioned five years ago, and a child who socially transitioned less than a year ago did

not differ in the extent to which they identified with their current gender. Third, when compared to a group of unrelated cisgender control children and a group of cisgender siblings of transgender participants, transgender children showed remarkable similarity in their gender development. That is, transgender girls (assigned as boys at birth) were similar in gender development to children who were assigned at birth as girls. Further, both transgender and cisgender children showed similar variability in terms of how stereotype-consistent their gender development was. For example, among both transgender and cisgender girls, there were girls who showed preferences for toys and clothing that were very stereotypically feminine (e.g., frilly dresses, play make-up sets), and there were girls who showed counter-stereotypical preferences (e.g., cargo pants, balls).

Were there other findings? In addition to the main findings described above, as a result of further exploratory research, we found several other interesting results. First, we found that transgender and cisgender children's gender development showed coherence. Past literature had suggested that cisgender children show coherence—or associations—between different aspects of gender development (e.g., for instance, between their identity and clothing preferences). We found the same pattern within our transgender (and cisgender) samples.

Second, we found that transgender and cisgender children's gender development did not vary as a function of demographic variables such as race, geographic location, and parent education level. The caveat to this finding is that our participants overall were of a restricted range of demographics (most had parents with college educations or above, about two-thirds were White, etc.); yet within the diversity we had, we did not find that demographics determined children's gender development. We did sometimes find gender differences wherein girls showed a given preference more than boys, however, across measures there was not a consistent pattern. Third, we found that parents and children provided similar reports of children's gender development.

What methods were used?

This study included 317 transgender children, 189 of their siblings, and 316 cisgender controls. They completed measures of gender identity (how much they feel like a boy, a girl, something else) and measures of gender-typed preferences (e.g., toys, clothing stereotypically associated in our culture with a gender) during an in-person one-on-one meeting with a researcher.

Transgender children (317 children, 3 to 12 years) were tested on various established measures of gender development, with emphasis on gender identity and gender-typed preferences and behaviors. The same measures were used in testing two comparison groups: a group of cisgender siblings of transgender participants (189 children, 3 to 12 years), and a group of cisgender controls who were unrelated to the participants in the study and were matched by age and gender to each transgender participant (316 children, 3 to 12 years).

Families of transgender children were recruited through our project website, conferences and camps geared toward families with gender-diverse children, and via word-of-mouth. Researchers from our team traveled across the U.S. and Canada to meet families in their homes, or in local private settings. We met with each family for about an hour, during which children and parents were administered separate questionnaires/interviews. Children saw, for example, arrays of toys

or clothes that varied in how stereotypically masculine or feminine they were, and children indicated which toys or clothes they preferred. On other items, for example, they were asked how similar they felt to boys and how similar they felt to girls. Parents were asked about their transgender child's (and when available, the sibling's) gender identity, preferences and behaviors. Children in the cisgender control group (and their parents) were recruited in the Seattle area and participated in our research lab, answering the exact same questions as the transgender children and their siblings. All families in this study agreed to be part of an ongoing longitudinal study, in which we will re-visit or re-invite children to participate every one to three years. This paper reports only on the findings from the first wave of data.

Why do these findings matter?

These findings suggest that children might not be simply learning about gender based on what their parents tell them about their own gender or how they treat them early on (which would be about the gender associated with their assigned sex). Instead, the findings suggest that children may be selectively attending to broader social messages regarding the gender they feel they are, from early ages.

How children become aware of their gender identity and begin to show gender-typed preferences in things like clothing and toys have been and still are topics of debate among researchers. By studying gender development in children whose current gender identity and expressions do not align with their assigned sex, the current work provides new insight into the process of gender development. Our findings suggest that children might not be simply learning what their parents tell them about their own gender or how they are treated early on (which would be about the gender associated with their assigned sex), but instead, they might selectively attend to broader social messages regarding the gender they feel they are. That is, the current findings suggest that once children identify themselves as a girl or a boy (regardless of what their assigned sex is), they might look for ways in which people around them fulfill these roles and then try to be like them. Our findings also show that the time a child spends living as transgender does not appear to change their gender identity, or make their preferences in gender-stereotypical clothes or toys more prominent, which lends support to previous research suggesting that early social transitions are not likely to be the cause of transgender children's gender identities (Rae et al., 2019).

Are these results saying that all transgender girls are stereotypically feminine, and all transgender boys are stereotypically masculine?

No.

Our results suggest that on average, transgender girls in our study were feminine and transgender boys were masculine, but just as with cisgender girls, we found a range of responses. For example, we had some "tomboy" transgender girls in the study, just as we had "tomboy" cisgender girls. Further, and importantly, the study did not focus on nonbinary children, who are sometimes included in the broader societal use of the word "transgender". If we had included nonbinary children, we likely would have found a different pattern of results. This study focused, however, on children who used "he" and "she" pronouns exclusively.

Are there limitations to this work?

The primary limitation of the work is that the sample was restricted in important ways—all children had socially transitioned, and the sample was skewed with more children being from homes with higher income and higher parental education. Whether these findings extend to other samples is currently unknown. Also, these data are from a single time point and future work would ideally examine how gender identity and preferences do or do not change over time.

As with any research study, the current work has certain limitations that define how generalizable these findings are. The transgender participants in the current study have all socially transitioned and live in families that affirmed their child's current gender identity through a social transition. While these were necessary factors in a study about children who have socially transitioned, they also mean that we do not know how the results may have differed if we had studied children who identify as transgender but have not yet transitioned, or children who live in less supportive environments.

Additionally, the current work reports findings from measures administered to each child participant at 1 time point. Therefore, while we can show how kids in our sample identify at this time, we are unable to predict the continuity of their gender identity and expression. Future longitudinal work (that we are working on!) is needed to inform our understanding of transgender children's gender development over time.

A third limitation is that all children in the current sample were from U.S. and Canadian families that often had high incomes and included parents with high levels of education. Whether these findings extend to children from other demographic groups and cultures is currently unknown.