




Does Gender Nonconforming Behavior in Early Childhood Predict Adolescents' Depressive Symptoms?

David S. Bennett¹  · Eileen Borczon¹ · Michael Lewis²

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Abstract

Gender nonconforming behavior (GNB) is a risk factor for poorer psychological adjustment, but little is known about whether preschool-age children displaying GNB are at risk for depressive symptoms during adolescence. We examined maternal report of GNB at age 4–5 years-old as a predictor of adolescents' depressive symptoms at age 16–17 years-old in a longitudinal study of U.S. children from a predominantly low SES (61% received Aid to Families with Dependent Children) and African American (90%) sample. Youth with GNB in early childhood ($n = 10$) reported more depressive symptoms during adolescence than did their peers without GNB ($n = 115$), and this relationship remained after controlling for covariates (environmental risk, prenatal exposure, and neonatal medical problems). Our findings suggest that early GNB may be a risk factor for the development of depressive symptoms in adolescence. Further research is needed to replicate the current findings with a larger sample and to identify the underlying mechanisms by which GNB may increase risk for depressive symptoms. If replicated, the findings further highlight the need for both professionals and parents to become aware of the potential challenges that children with GNB face and to become knowledgeable about ways to facilitate healthy adjustment among gender nonconforming youth.

Keywords Sex roles · Depression · Adolescent psychopathology · Longitudinal studies

Gender nonconforming behavior (GNB) refers to behaviors that are perceived by a culture to be incongruent with expected gender norms (e.g., boys who play with dolls and girls who play with cars). GNB tends to emerge around age 2 or 3 years when gender identity emerges and may continue to become more pronounced across childhood (Lewis 1987; Li et al. 2017; Rieger et al. 2008). Although estimates of GNB are variable, 4% of boys and 10% of girls in the United States were described by their parents as behaving “like the opposite sex” (Achenbach 1991). Of particular concern, children and adolescents with GNB experience poorer psychological adjustment than their peers without GNB (Baams et al. 2013; Rieger and Savin-Williams 2012; Yunger et al. 2004).

GNB and Depressive Symptoms

Research has rarely examined GNB as a predictor of depressive symptoms. Depression is relatively uncommon before puberty (1–2%), but increases to approximately 5% of U.S. youth during mid-adolescence, with higher rates found among female adolescents (Maughan et al. 2013). Depression is an important mental health outcome to consider during adolescence due to both its increasing prevalence during this developmental period and its ability to predict a host of negative outcomes in adulthood, including poor health, lack of social support, and recurrent depression (Avenevoli et al. 2015; Naicker et al. 2013; Thapar et al. 2012). Although few studies have focused on GNB and depressive symptoms in childhood, one exception found retrospective report of children's GNB at age 11 to predict depressive symptoms in adolescence and early adulthood, particularly among men and people identifying as heterosexual (Roberts et al. 2013). Cross-sectional research of school-aged children 6 to 12 years, as well as with college students, also finds gender nonconformity to be associated with relatively high rates of depressive or internalizing symptoms (Borgogna et al. 2018; Kovalanka et al. 2017).

✉ David S. Bennett
db36@drexel.edu

¹ Department of Psychiatry, GLAD Program, Drexel University, Suite 118, 4700 Wissahickon Avenue, Philadelphia, PA, USA

² Rutgers Robert Wood Johnson Medical School, 89 French Street, Room 1201, New Brunswick, NJ 08901, USA

The minority stress model highlights the negative impact that members of a minority group, such as children who exhibit GNB, may experience due to stigma, prejudice, and discrimination (Meyer 2003). Children who exhibit GNB are at increased risk of being bullied and ostracized by both peers and family members, factors that can lead to shame and to the development of depressive symptoms (Aspenlieder et al. 2009; Bennett et al. 2010; Roberts et al. 2013; Toomey et al. 2010; Wallace and Russell 2013). Similarly, stigmatization of adolescents and young adults who exhibit GNB has been shown to increase depression risk (Gordon et al. 2017). Developmentally, GNB has been associated with victimization or exclusion by peers as early as age 7 years-old (Zosuls et al. 2016). The age at which the relationship between GNB and later depressive symptoms begins to emerge, however, remains unclear.

Currently, it is unknown whether a child as young as 4–5 years-old who displays GNB is at risk for future depressive symptoms. By age 18–24 months, most children accurately label gender and use gender in their speech (Martin and Ruble 2010); by age 2–4 years most children recognize gender differences and use gendered pronouns, and by age 5 most children express their gender identity (Ruble et al. 2006). During these early years, gender-typed behavior tends to increase. Moreover, gender identity becomes stable by the end of the preschool years, while children's rigidity in gender stereotypes and their own gender-typed behavior peak around age 4 or 5 years (Halim et al. 2013; Signorella et al. 1993). Accordingly, the late preschool-age period is an important one in which to examine the possible relationship between GNB and later depressive symptoms.

Several gaps exist in our current understanding of GNB as a risk factor for future depressive symptoms. First, as we noted, the age at which GNB emerges as a risk factor for future depressive symptoms is unknown because prior research has typically examined GNB among adolescents and adults rather than among young children. Second, studies examining GNB often select adolescent and adult participants based on sexual minority status, whereas recent research suggests that GNB, and not sexual minority status per se, is a better predictor of depressive symptoms in early adulthood (Martin-Storey and August 2016; Toomey et al. 2010). Third, past research has generally relied on cross-sectional or retrospective data, limiting our knowledge of the extent to which GNB predicts future depressive symptoms.

Purpose of the Current Study

The current study seeks to examine whether children who exhibit GNB in early childhood report greater depressive symptoms during late adolescence. Source bias is minimized by using mothers as the rater of GNB at age 4 and 5 and

adolescents as the reporter of their own depressive symptoms at age 16 and 17. We hypothesize that GNB during early childhood will predict depressive symptoms during late adolescence.

Method

Participants

Participants were 125 adolescents (65, 52%, male) and their mothers from a longitudinal study examining developmental risk factors of child adjustment, including prenatal cocaine exposure. Pregnant women attending prenatal clinics in Philadelphia, Pennsylvania and Trenton, New Jersey were approached to participate between February 1993 and December 1995. Children who were born before 32 weeks of gestation, required special care or oxygen therapy for more than 24 h, exhibited congenital anomalies, or were exposed to opiates or PCP in utero were excluded. Mothers were predominantly African American (112, 90%, with the other 23, 10%, European American) and ranged in age from 13.7–38.6 years-old ($M = 26.0$, $SD = 5.9$) at the time of their child's birth. In addition, the sample was predominantly low SES because mothers had a mean education level of 11.6 years ($SD = 1.4$, range = 8–15), with 61% ($n = 76$) of families receiving Aid to Families with Dependent Children. Mean adolescent age was 16.9 ($SD = .4$) at the 16-year visit and 17.8 ($SD = .4$) at the 17-year visit.

Procedure and Measures

Of the 258 children who participated in the first laboratory visit at 4 months, mothers of 229 children provided assessments of child behavior on the Child Behavior Checklist (Achenbach 1991) at age 4 years ($n = 218$) and/or age 5 years ($n = 187$). From these families, 125 adolescents completed the Beck Depression Inventory (BDI-II) (Beck et al. 1996) at 16 years ($n = 104$) and/or 17 years ($n = 88$). No significant differences were observed in perinatal variables (cocaine, alcohol, cigarette, or marijuana exposure; neonatal medical problems), child gender, maternal age, or ethnicity between participants in the current sample and those from the original sample who did not participate. Incentives were provided to families for their participation in the form of gift cards (\$25 at age 4 & 5 visits; \$60 at age 16 & 17 visits) for use at local stores at each visit. Informed consent was obtained from mothers and assent from adolescents for all study procedures, which were approved by the Institutional Review Boards of Drexel University and the University of Medicine and Dentistry of New Jersey (now Rutgers University).

The data we report here fall into three categories: (a) Perinatal factors included child gender (based on parent report

at the time of the participating child's birth), neonatal medical problems at birth, and perinatal substance exposure. (b) Psychosocial risk factors involved environmental risk across 4 months to 13 years-old and gender nonconforming behavior assessed at 4–5 years-old. (c) Our outcome measure was depressive symptoms assessed at age 16–17.

Neonatal Medical Problems (Birth)

Neonatal complications were abstracted by nurses from hospital records at birth using the Hobel Scale, a neonatal medical risk scale based on 35 possible complications (Hobel et al. 1973). Complications included general factors (e.g., low birth weight, fetal anomalies, and feeding problems), respiratory problems (e.g., congenital pneumonia, apnea, and meconium aspiration syndrome), metabolic disorders (e.g., failure to gain weight and hypoglycemia), cardiac problems (e.g., murmur and cardiac anomalies), and CNS problems (e.g., CNS depression and seizures). Items were coded as absent (0) or present (1) and summed such that higher scores indicated greater neonatal medical problems; the total score was log transformed to correct for positive skew.

Prenatal Substance Exposure (Birth)

Prenatal substance exposure was assessed using a semi-structured interview administered to the mother within 2 weeks of her child's birth. The interview included questions assessing the frequency and amount of the mother's use of cocaine ($n = 48$, 38%, used), alcohol ($n = 48$, 38%), cigarettes ($n = 56$, 45%), and marijuana ($n = 15$, 12%) throughout pregnancy. Substance use was categorized as follows: alcohol (0 = 0 drinks/day, 1 = from .01 to 1.00/day, 2 = from 1.01 to 2.00/day, 3 = from 2.01 to 3.00/day, 4 = more than 3.00/day); cigarettes (0 = 0 cigarettes/day, 1 = from .01 to 1.00/day, 2 = from 1.01 to 5.00/day, 3 = from 5.01 to 10.00/day, 4 = more than 10.00/day); and marijuana (0 = 0 joints/day, 1 = from .01 to .50/day, 2 = from .51 to 1.00/day, 3 = more than 1.00/day; however, given the presence of positive skew this variable was recoded such that 0 = no use and 1 = some use). Prenatal cocaine exposure (PCE) was confirmed by analysis of the newborn's meconium for the presence of benzoylecgonine (cocaine metabolite) using radioimmunoassay followed by confirmatory gas chromatography/ mass spectrometry. PCE was dichotomized (0 = no use and 1 = some use) in all analyses as prior reports from this sample have found the dichotomous measure to best predict outcomes.

Environmental Risk (4 Months to 13 Years)

A composite environmental risk score was created by compositing the following risks, assessed from maternal interview at nine time points from birth to age 13 (at the 4 months,

and 1.5, 2.5, 4.5, 7.0, 8.5, 10.0, 11.5, and 13.0 year lab visits). The score included family life stress during the past 6 months based on the Social Environment Inventory (Orr et al. 1992), maternal social support network size based on the Norbeck Social Support Questionnaire (the number of important or significant people in the mother's network, reverse scored; Norbeck et al. 1981), the number of regular caregivers (greater number being associated with higher risk), the irregularity of the child's schedule (assessing variability as to when the child woke up, ate, went to sleep, etc., during the past week), and the instability of the child's surroundings (assessing the number of changes in the room in which the child slept, who lived in the house, etc., during the past 6 months) from the Family Chaos Scale (R. Seifer, personal communication, 1993), single parenthood (single parent associated with higher risk), maternal education (number of years of education, reverse scored), maternal race (African American associated with higher risk given that minority status may serve as a proxy for potential exposure to racism and structural disadvantage and has been found to be a risk factor for depressive symptoms among youth, consistent with the minority stress model; Stirling et al. 2015), and public assistance status (whether the family received Aid to Families with Dependent Children [AFDC] or, later, Temporary Assistance to Needy Families [TANF] funding).

Each variable was standardized and summed. Standardized environmental risk scores were created by averaging standardized z-scores for each risk measure across each of the nine time points. Such aggregate scores are more stable than individual measures, and there is increased power to detect effects of the environment because errors of measurement decrease as scores are summed and degrees of freedom are preserved. This and similar cumulative environmental risk measures have been found to explain more variance in child and adolescent outcomes than single factor scores (Atzaba-Poria et al. 2004; Bendersky and Lewis 1994; Deater-Deckard et al. 1998; Sameroff et al. 1993).

Gender Nonconforming Behavior (4 and 5 Years)

GNB was assessed by mother report on the Child Behavior Checklist (Achenbach 1991) using the item "acts like opposite sex" (0 = not true, 1 = somewhat or sometimes, 2 = very true or often true). We dichotomized the score such that a 1 or 2 point response was recoded as 1, and subsequently we computed the mean of this score across the 4 and 5 year visits. This item has been used previously as an indicator of GNB (Steensma et al. 2014; van Beijsterveldt et al. 2006).

Depressive Symptoms (16 and 17 Years)

Depressive symptoms were assessed using the 21-item Beck Depression Inventory-II (BDI-II; (Beck et al. 1996). The BDI-

II and its predecessor, the BDI, are well-validated self-reports of depressive symptoms for adolescents (Bennett et al. 1997; Krefetz et al. 2002). BDI-II items assess symptoms during the past 2 weeks using a 4-point scale (0 to 3, with higher scores indicating more frequent depressive symptoms; e.g., “Sadness: 0 = I do not feel sad; 1 = I feel sad much of the time; 2 = I am sad all the time; 3 = I am so sad or unhappy that I can’t stand it.”). The BDI-II was completed by 104 adolescents at 16.5 years and 88 at 17.5 years, with mean scores computed across the two visits. Scores of 0 to 13 suggest the presence of minimal depression, scores of 14 to 19 suggest mild depression, scores of 20 to 28 suggest moderate depression, and scores of 29 to 63 suggest severe depression (Beck et al. 1996). Internal consistency for the BDI-II was satisfactory in the current sample (Cronbach’s alpha = .88 at 16 years and .89 at 17 years).

Results

Data Analysis

Missing data (1% of all data) were managed using multiple imputation of 100 datasets containing all study variables in SPSS version 24 (IBM 2016). Descriptive statistics and correlations among all study variables were first examined. Statistical power to detect an effect ($p < .05$, two-tailed) in correlational analyses was 94% for a medium effect size and 62% for a small effect size. Hierarchical regressions were also conducted to examine whether GNB predicted depressive symptoms after controlling for child gender, prenatal marijuana exposure, neonatal medical problems, and environmental risk.

Bivariate Relationships

Ten children (8.0% of the sample; 3 boys, 7 girls) were rated by their mother as exhibiting GNB in early childhood (i.e., a response of “sometimes” or “often” on the GNB item). As shown in Table 1, children who exhibited GNB in early childhood reported more depressive symptoms in late adolescence ($r = .288$, $p = .001$). Female gender (Spearman $r = -.285$, $p = .001$) and greater environmental risk ($r = .213$, $p = .017$) were also associated with higher rates of depressive symptoms.

GNB and Depressive Symptoms

Does GNB predict depressive symptoms after controlling for covariates? Child gender, environmental risk, prenatal substance exposure (to each of the following substances: alcohol, cocaine, marijuana, and tobacco), and neonatal medical problems were considered as covariates. Of these, only female gender, environmental risk, prenatal marijuana exposure, and neonatal medical problems were correlated with depressive symptoms at $p < .20$ and were thus included in Step 1 of a hierarchical regression predicting depressive symptoms. GNB was entered as a predictor in Step 2.

As shown in Table 2, GNB predicted greater depressive symptoms after controlling for covariates ($p = .004$). Gender also was a significant predictor because female adolescents reported more depressive symptoms than did male adolescents ($p = .005$). Environmental risk, prenatal marijuana exposure, and neonatal medical problems did not predict depressive symptoms.

Table 1 Descriptive statistics and correlations among predictor variables

	<i>M (SD)</i>	<i>n</i>	Correlations					
			1. Gender	2. Neonatal	3. Marijuana	4. Environment	5. GNB	6. Depressive
Perinatal factors								
1. Gender (0 = girls; 1 = boys)	.52 (.50)	125	–					
2. Neonatal medical problems (birth)	.19 (.26)	121	–.076	–				
3. Prenatal Marijuana exposure	.13 (.33)	122	–.046	.031	–			
Psychosocial risk factors								
4. Environmental Risk (<i>z</i> -score; birth–13 yrs)	3.59 (1.35)	125	–.194*	.218*	.120	–		
5. Gender nonconforming behavior (4–5 yrs)	.06 (.22)	125	–.123	–.003	.157	.066	–	
Outcome								
6. Depressive symptoms (16–17 yrs)	9.97 (8.14)	125	–.285***	.164	.133	.213*	.288***	–

Spearman correlations are reported for gender; Pearson correlations are reported for all other variables. Although the number of participants who completed each measure is provided for reference, descriptive statistics and correlations are based on data following multiple imputation

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 2 Hierarchical regression predicting depressive symptoms as a function of gender nonconforming behavior

Variables	Step 1			Step 2		
	β	<i>b</i>	<i>t</i>	β	<i>b</i>	<i>t</i>
Child gender (0 = girls, 1 = boys)	-.254	-4.116	-2.877**	-.238	-3.883	-2.792**
Environmental risk	.144	.820	1.506	.136	.776	1.468
Prenatal Marijuana exposure	.102	2.196	1.015	.061	1.199	.566
Neonatal medical problems	.097	3.217	1.166	.102	3.385	1.264
Gender nonconforming behavior				.240	9.111	2.863**
<i>F</i>	4.485**			5.344***		
<i>df</i>	4			5		
<i>df</i> _{error}	120			119		
<i>R</i> ²	.143**			.193**		
ΔR^2				.050**		

df degrees of freedom

* $p < .05$. ** $p < .01$. *** $p < .001$

Discussion

The current findings suggest that GNB in early childhood may predict an increased risk of depressive symptoms during adolescence in the United States. A small prior literature also has found GNB to be associated with depressive symptoms (Alanko et al. 2009; Martin-Storey and August 2016; Roberts et al. 2013; Toomey et al. 2010). Thus, a consistent relationship between GNB and depressive symptoms is beginning to emerge across different reporters of GNB (self vs. parent), samples (LGBTQ identified vs. no gender or sexual identity information collected), types of data collection (i.e., retrospective vs. longitudinal), and developmental periods.

The mechanisms by which GNB may place children at increased risk for depressive symptoms in adolescence remain unclear, although family and peer rejection or abuse may partially explain this association. Physical and verbal abuse, for example, have been found to mediate the relationship between GNB and depressive symptoms (Martin-Storey and August 2016; Toomey et al. 2010). Similarly, Toomey and colleagues (Toomey et al. 2010) found that harassment or abuse mediates the relationship between GNB and depressive symptoms among participants older than those in the current study. Parental coldness and rejection also have been associated with childhood GNB and as such may create increased risk for depressive symptoms (Alanko et al. 2009; Landolt et al. 2004).

More broadly, societal pressure to conform among youth exhibiting GNB in childhood could lead to depressive symptoms in adolescence. Egan and Perry (2001), who found children's perceived gender typicality or contentment with their biological sex to be positively associated with adjustment, also found both feelings of pressure to conform to gender-typical behavior (from sources including parents, peers, and one's self) and intergroup bias (i.e., feelings of superiority of

one's own gender) to predict poorer adjustment. These findings were supported by research finding that gender atypicality, gender discontent, and greater perceived pressure to conform predicted poorer adjustment among preadolescents (Yunger et al. 2004). Importantly, there is overlap between GNB and sexual minority status, including identifying as a gay, lesbian, and transgender individual (Li et al. 2017; Rieger and Savin-Williams 2012). However, whereas gender nonconformity is negatively associated with well-being among adolescents, sexual orientation appears to be unrelated to well-being (Rieger and Savin-Williams 2012). Likewise, harassment related to GNB, rather than one's sexual minority status per se, increases risk for depressive symptoms (Martin-Storey and August 2016). Collectively, these findings suggest that GNB may be more relevant for adjustment than sexual minority status, perhaps due to the stigmatization and societal rejection that can elicit depressive symptoms among youth with GNB (Baams et al. 2013; Turban et al. 2017). Nonetheless, future research should consider the potential combined effects of gender and sexual minority status given that college students who are both gender and sexual minorities are at particularly elevated risk for poor outcomes (Borgogna et al. 2018).

Such stigmatization can elicit shame, which in turn is associated with increased risk for depressive symptoms (Kim et al. 2011). Shame is a painful emotion in which one perceives the self to be defective (Lewis 1995). Factors such as whether one perceives a violation of societal standards for their behavior and, importantly, whether one blames him or herself for such behavior increases the likelihood of experiencing shame (Lewis 1995). Children and adolescents who exhibit GNB may be at increased risk of experiencing shame (Wallace and Russell 2013). Future studies should examine shame as a potential mediator of the relationship

between early GNB and future depressive symptoms given that shame has been found to mediate the relationship between stressors and negative outcomes such as PTSD symptoms and suicide risk among adults experiencing minority stress (Mereish et al. 2018; Straub et al. 2018).

Limitations

Several limitations of the current study deserve mention. First, our modest sample of children exhibiting GNB highlights the need for the findings to be replicated in a larger sample. In addition, our modest sample prevented the testing of potential moderators such as biological sex or gender and the examination of potential mediators such as parental rejection. Second, our sample consisted of predominantly urban, low SES, and African American adolescents and as such our findings may not generalize to other samples. Third, a single item, maternal report was used to assess GNB, raising the possibility that a more comprehensive assessment of GNB in early childhood might yield stronger associations with outcomes during adolescence. Finally, the current study did not assess the extent to which GNB is associated with sexual orientation or gender identity later in adolescence or adulthood. Recent research has found that childhood GNB is a significant predictor of later sexual orientation and minority gender identity (i.e., LGBT; Li et al. 2017; Olson et al. 2015), which are associated with increased risk for depressive symptoms and suicidality (Haas et al. 2011; Lucassen et al. 2017). Similarly, we did not assess GNB during adolescence and thus do not know the extent to which youth with GNB during early childhood in our sample continued to exhibit GNB during adolescence.

Future Research Directions

Longitudinal research with larger community samples is needed to replicate the current findings and, as we suggested, to identify potential moderators and mediators of the relationship between GNB and depressive symptoms. Although our modest sample of children displaying GNB precluded examining gender as a moderator, prior research suggests that a child's gender can affect parents' acceptance of GNB. For example, parents of preschool children may perceive GNB to be normal for girls, but not so for boys depending on factors such as race, class, and a parent's adherence to traditional gender roles (Kane 2006). These differences may impact the extent to which boys versus girls with GNB experience low levels of parental acceptance, increased risk for shame, and ultimately increased depressive symptoms. Finally, intervention research identifying effective ways for professionals and parents to support children with GNB in early childhood to prevent the onset of future depressive symptoms is needed.

Practice Implications

The growing literature on GNB and depressive symptoms highlights the need for pediatricians, mental health practitioners, and other child healthcare professionals to be aware of the potential relationship between early GNB and depressive symptoms. More broadly, healthcare professionals need to have an understanding of gender nonconformity and to have a knowledge base from which to provide competent assessment and treatment (Hendricks and Testa 2012). It may be helpful for clinicians to ask parents and children about the extent to which their child exhibits GNB (Forcier and Johnson 2013), as well as to assess the attitudes and feelings of those close to the child about such behaviors. Interventions at the school level aimed at making the school environment more welcoming (Meyer 2009) and at the family level (Pyne 2014; Wallace and Russell 2013) to increase acceptance and decrease shame could help to prevent the increased risk of depressive symptoms among children exhibiting GNB. In addition, the encouragement of friendships with the other gender can prove helpful because young children who perceived themselves as similar to the other gender and who also had other-gender friends were less likely to be victimized or excluded by their peers (Zosuls et al. 2016).

Conclusions

Our study is the first to our knowledge to document the prospective relationship between GNB assessed in the preschool years and depressive symptoms in adolescence. Although our findings are preliminary, they suggest that adolescents who exhibit GNB may be at elevated risk for depressive symptoms during adolescence. Future research should seek to use longitudinal designs to examine the relationship among GNB, potential mediators and moderators, and outcomes such as depressive symptoms. A better understanding of the processes by which GNB can lead to elevated depressive symptoms will guide practitioners in developing more effective interventions and to improve outcomes among gender nonconforming youth.

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Compliance with Ethical Standards

Conflict of Interest The authors do not have any conflict of interest in relation to this funding.

Ethical Approval and Informed Consent In addition, as stated in the manuscript, the study was approved by the Institutional Review Boards of Drexel University and Rutgers University, and informed consent was obtained from participants' mothers while assent was obtained from the adolescents.

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References

- Achenbach, T. M. (1991). *Manual for the child behavior checklist/4–18 and 1991 profile*. Burlington: University of Vermont, Dept. of Psychiatry.
- Alanko, K., Santtila, P., Witting, K., Varjonen, M., Jern, P., Johansson, A., . . . Kenneth Sandnabba, N. (2009). Psychiatric symptoms and same-sex sexual attraction and behavior in light of childhood gender atypical behavior and parental relationships. *Journal of Sex Research, 46*, 494–504. <https://doi.org/10.1080/00224490902846487>
- Aspenlieder, L., Buchanan, C. M., McDougall, P., & Sippola, L. K. (2009). Gender nonconformity and peer victimization in pre- and early adolescence. *International Journal of Developmental Science, 3*, 3–16. <https://doi.org/10.3233/DEV-2009-3103>.
- Atzaba-Poria, N., Pike, A., & Deater-Deckard, K. (2004). Do risk factors for problem behaviour act in a cumulative manner? An examination of ethnic minority and majority children through an ecological perspective. *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 45*, 707–718. <https://doi.org/10.1111/j.1469-7610.2004.00265.x>.
- Avenevoli, S., Swendsen, J., He, J. P., Burstein, M., & Merikangas, K. R. (2015). Major depression in the national comorbidity survey-adolescent supplement: Prevalence, correlates, and treatment. *Journal of the American Academy of Child & Adolescent Psychiatry, 54*, 37–44 e32. <https://doi.org/10.1016/j.jaac.2014.10.010>.
- Baams, L., Beek, T., Hille, H., Zevenbergen, F. C., & Bos, H. M. (2013). Gender nonconformity, perceived stigmatization, and psychological well-being in Dutch sexual minority youth and young adults: A mediation analysis. *Archives of Sexual Behavior, 42*, 765–773. <https://doi.org/10.1007/s10508-012-0055-z>.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for the Beck depression inventory-II*. San Antonio: Psychological Corporation.
- Bendersky, M., & Lewis, M. (1994). Environmental risk, biological risk and developmental outcome. *Developmental Psychology, 30*, 484–494.
- Bennett, D., Ambrosini, P., Bianchi, M., Barnett, D., Metz, C., & Rabinovich, H. (1997). Relationship of Beck depression inventory factors to depression among adolescents. *Journal of Affective Disorders, 45*, 127–134.
- Bennett, D., Sullivan, M., & Lewis, M. (2010). Neglected children, shame-proneness, and depressive symptoms. *Child Maltreatment, 15*, 305–314. <https://doi.org/10.1177/1077559510379634>.
- Borgogna, N. C., McDermott, R. C., Aita, S. L., & Kridel, M. M. (2018). Anxiety and depression across gender and sexual minorities: Implications for transgender, gender nonconforming, pansexual, demisexual, asexual, queer, and questioning individuals. *Psychology of Sexual Orientation and Gender Diversity. https://doi.org/10.1037/sgd0000306*.
- Deater-Deckard, K., Dodge, K. A., Bates, J. E., & Pettit, G. S. (1998). Multiple risk factors in the development of externalizing behavior problems: Group and individual differences. *Development and Psychopathology, 10*, 469–493.
- Egan, S. K., & Perry, D. G. (2001). Gender identity: A multidimensional analysis with implications for psychosocial adjustment. *Developmental Psychology, 37*, 451–463. <https://doi.org/10.1037/0012-1649.37.4.451>.
- Forcier, M., & Johnson, M. (2013). Screening, identification, and support of gender non-conforming children and families. *Journal of Pediatric Nursing, 28*, 100–102. <https://doi.org/10.1016/j.pedn.2012.11.001>.
- Gordon, A. R., Krieger, N., Okechukwu, C. A., Haneuse, S., Sammaliev, M., Charlton, B. M., & Austin, S. B. (2017). Decrements in health-related quality of life associated with gender nonconformity among U.S. adolescents and young adults. *Quality of Life Research, 26*, 2129–2138. <https://doi.org/10.1007/s11136-017-1545-1>.
- Haas, A. P., Eliason, M., Mays, V. M., Mathy, R. M., Cochran, S. D., D'Augelli, A. R., . . . Clayton, P. J. (2011). Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: Review and recommendations. *Journal of Homosexuality, 58*, 10–51. <https://doi.org/10.1080/00918369.2011.534038>.
- Halim, M. L., Ruble, D., Tamis-LeMonda, C., & Shrout, P. E. (2013). Rigidity in gender-typed behaviors in early childhood: A longitudinal study of ethnic minority children. *Child Development, 84*, 1269–1284. <https://doi.org/10.1111/cdev.12057>.
- Hendricks, M. L., & Testa, R. J. (2012). A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the minority stress model. *Professional Psychology: Research and Practice, 43*, 460–467. <https://doi.org/10.1037/a0029597>.
- Hobel, C. J., Hyvarinen, M. A., Okada, D. M., & Oh, W. (1973). Prenatal and intrapartum high-risk screening. *American Journal of Obstetrics and Gynecology, 117*(1), 1–9. [https://doi.org/10.1016/0002-9378\(73\)90720-5](https://doi.org/10.1016/0002-9378(73)90720-5).
- IBM. (2016). *IBM SPSS statistics for windows (version 24.0)*. Armonk: IBM Corp.
- Kane, E. W. (2006). “No way my boys are going to be like that!” Parents' responses to children's gender nonconformity. *Gender & Society, 20*, 149–176. <https://doi.org/10.1177/0891243205284276>.
- Kim, S., Thibodeau, R., & Jorgensen, R. S. (2011). Shame, guilt, and depressive symptoms: A meta-analytic review. *Psychological Bulletin, 137*, 68–96.
- Krefetz, D. G., Steer, R. A., Gulab, N. A., & Beck, A. T. (2002). Convergent validity of the Beck depression inventory-II with the Reynolds adolescent depression scale in psychiatric inpatients. *Journal of Personality Assessment, 78*, 451–460. https://doi.org/10.1207/S15327752JPA7803_05.
- Kuvalanka, K. A., Weiner, J. L., Munroe, C., Goldberg, A. E., & Gardner, M. (2017). Trans and gender-nonconforming children and their caregivers: Gender presentations, peer relations, and well-being at baseline. *Journal of Family Psychology, 31*, 889–899.
- Landolt, M. A., Bartholomew, K., Saffrey, C., Oram, D., & Perlman, D. (2004). Gender nonconformity, childhood rejection, and adult attachment: A study of gay men. *Archives of Sexual Behavior, 33*, 117–128.
- Lewis, M. (1987). Early sex role behavior and school age adjustment. In J. M. Reinisch, L. A. Rosenblum, & S. A. Sanders (Eds.), *Masculinity/femininity: Basic perspectives* (pp. 202–226). New York: Oxford University Press.
- Lewis, M. (1995). *Shame: The exposed self*. New York: Simon and Schuster.
- Li, G., Kung, K. T., & Hines, M. (2017). Childhood gender-typed behavior and adolescent sexual orientation: A longitudinal population-based study. *Developmental Psychology, 53*, 764–777. <https://doi.org/10.1037/dev0000281>.
- Lucassen, M. F., Stasiak, K., Samra, R., Frampton, C. M., & Merry, S. N. (2017). Sexual minority youth and depressive symptoms or depressive disorder: A systematic review and meta-analysis of population-

- based studies. *Australian and New Zealand Journal of Psychiatry*, 51, 774–787. <https://doi.org/10.1177/0004867417713664>.
- Martin, C. L., & Ruble, D. N. (2010). Patterns of gender development. *Annual Review of Psychology*, 61, 353–381. <https://doi.org/10.1146/annurev.psych.093008.100511>.
- Martin-Storey, A., & August, E. G. (2016). Harassment due to gender nonconformity mediates the association between sexual minority identity and depressive symptoms. *Journal of Sex Research*, 53(1), 85–97. <https://doi.org/10.1080/00224499.2014.980497>.
- Maughan, B., Collishaw, S., & Stringaris, A. (2013). Depression in childhood and adolescence. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 22, 35–40.
- Mereish, E. H., Peters, J. R., & Yen, S. (2018). Minority stress and relational mechanisms of suicide among sexual minorities: Subgroup differences in the associations between heterosexist victimization, shame, rejection sensitivity, and suicide risk. *Suicide & Life-Threatening Behavior*. <https://doi.org/10.1111/sltb.12458>.
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, 129, 674–697.
- Meyer, E. J. (2009). *Gender, bullying, and harassment: Strategies to end sexism and homophobia in schools*. New York: Teachers College Press.
- Naicker, K., Galambos, N. L., Zeng, Y., Senthilvelan, A., & Colman, I. (2013). Social, demographic, and health outcomes in the 10 years following adolescent depression. *Journal of Adolescent Health*, 52, 533–538. <https://doi.org/10.1016/j.jadohealth.2012.12.016>.
- Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L. (1981). The development of an instrument to measure social support. *Nursing Research*, 30, 264–269.
- Olson, K. R., Key, A. C., & Eaton, N. R. (2015). Gender cognition in transgender children. *Psychological Science*, 26, 467–474. <https://doi.org/10.1177/0956797614568156>.
- Orr, S. T., James, S. A., & Casper, R. (1992). Psychosocial stressors and low birth weight: Development of a questionnaire. *Journal of Developmental and Behavioral Pediatrics*, 13, 343–347.
- Pyne, J. (2014). Gender independent kids: A paradigm shift in approaches to gender non-conforming children. *The Canadian Journal of Human Sexuality*, 23(1), 1–8. <https://doi.org/10.3138/cjhs.23.1.CO1>.
- Rieger, G., & Savin-Williams, R. C. (2012). Gender nonconformity, sexual orientation, and psychological well-being. *Archives of Sexual Behavior*, 41, 611–621. <https://doi.org/10.1007/s10508-011-9738-0>.
- Rieger, G., Linsenmeier, J. A., Gygax, L., & Bailey, J. M. (2008). Sexual orientation and childhood gender nonconformity: Evidence from home videos. *Developmental Psychology*, 44, 46–58. <https://doi.org/10.1037/0012-1649.44.1.46>.
- Roberts, A. L., Rosario, M., Slopen, N., Calzo, J. P., & Austin, S. B. (2013). Childhood gender nonconformity, bullying victimization, and depressive symptoms across adolescence and early adulthood: An 11-year longitudinal study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 52, 143–152. <https://doi.org/10.1016/j.jaac.2012.11.006>.
- Ruble, D. N., Martin, C. L., & Berenbaum, S. A. (2006). Gender development. In N. Eisenberg (Ed.), *Handbook of child psychology* (Vol. 3, 6th ed., pp. 858–932). Hoboken: Wiley.
- Sameroff, A. J., Seifer, R., Baldwin, A., & Baldwin, C. (1993). Stability of intelligence from preschool to adolescence: The influence of social and family risk factors. *Child Development*, 64, 80–97. <https://doi.org/10.2307/1131438>.
- Signorella, M. L., Bigler, R. S., & Liben, L. S. (1993). Developmental differences in children's gender schemata about others: A meta-analytic review. *Developmental Review*, 13, 147–183. <https://doi.org/10.1006/drev.1993.1007>.
- Steensma, T. D., Zucker, K. J., Kreukels, B. P., Vanderlaan, D. P., Wood, H., Fuentes, A., & Cohen-Kettenis, P. T. (2014). Behavioral and emotional problems on the Teacher's report form: A cross-national, cross-clinic comparative analysis of gender dysphoric children and adolescents. *Journal of Abnormal Child Psychology*, 42, 635–647. <https://doi.org/10.1007/s10802-013-9804-2>.
- Stirling, K., Toumbourou, J. W., & Rowland, B. (2015). Community factors influencing child and adolescent depression: A systematic review and meta-analysis. *Australian and New Zealand Journal of Psychiatry*, 49, 869–886. <https://doi.org/10.1177/0004867415603129>.
- Straub, K. T., McConnell, A. A., & Messman-Moore, T. L. (2018). Internalized heterosexism and posttraumatic stress disorder symptoms: The mediating role of shame proneness among trauma-exposed sexual minority women. *Psychology of Sexual Orientation and Gender Diversity*, 5, 99–108.
- Thapar, A., Collishaw, S., Pine, D. S., & Thapar, A. K. (2012). Depression in adolescence. *The Lancet*, 379(9820), 1056–1067. [https://doi.org/10.1016/s0140-6736\(11\)60871-4](https://doi.org/10.1016/s0140-6736(11)60871-4).
- Toomey, R. B., Ryan, C., Diaz, R. M., Card, N. A., & Russell, S. T. (2010). Gender-nonconforming lesbian, gay, bisexual, and transgender youth: School victimization and young adult psychosocial adjustment. *Developmental Psychology*, 46, 1580–1589. <https://doi.org/10.1037/a0020705>.
- Turban, J., Ferraiolo, T., Martin, A., & Oleski, C. (2017). Ten things transgender and gender nonconforming youth want their doctors to know. *Journal of the American Academy of Child and Adolescent Psychiatry*, 56, 275–277. <https://doi.org/10.1016/j.jaac.2016.12.015>.
- van Beijsterveldt, C. E., Hudziak, J. J., & Boomsma, D. I. (2006). Genetic and environmental influences on cross-gender behavior and relation to behavior problems: A study of Dutch twins at ages 7 and 10 years. *Archives of Sexual Behavior*, 35, 647–658. <https://doi.org/10.1007/s10508-006-9072-0>.
- Wallace, R., & Russell, H. (2013). Attachment and shame in gender-nonconforming children and their families: Toward a theoretical framework for evaluating clinical interventions. *International Journal of Transgenderism*, 14(3), 113–126. <https://doi.org/10.1080/15532739.2013.824845>.
- Yunger, J. L., Carver, P. R., & Perry, D. G. (2004). Does gender identity influence children's psychological well-being? *Developmental Psychology*, 40, 572–582. <https://doi.org/10.1037/0012-1649.40.4.572>.
- Zosuls, K. M., Andrews, N. C. Z., Martin, C. L., England, D. E., & Field, R. D. (2016). Developmental changes in the link between gender typicality and peer victimization and exclusion. *Sex Roles*, 75, 243–256. <https://doi.org/10.1007/s11199-016-0608-z>.