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Gender Expression and Its Correlates in a Nationally Representative Sample of the U.S. Adult Population: Findings from the National Survey of Sexual Health and Behavior

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ABSTRACT

We explored the associations of gender expression with childhood gender expression, sexual identity, and demographic characteristics in a representative sample of the U.S. population aged 18 to 65 years (N = 1277), using data from the 2015 National Survey of Sexual Health and Behavior. As expected, gay men were less gender conforming than heterosexual men. However, among women, persons with a bisexual identity were less gender conforming compared to heterosexual and lesbian persons. In multivariate analyses, childhood gender expression trumped the role of sexual identity. In terms of demographic characteristics, gender conformity seemed to be more present among persons with positions with less social status in terms of age, race/ethnicity, education, income, and relationship status. Finally, we found among both men and women, that a large proportion saw themselves as more masculine or feminine than men and women on average, respectively, suggesting that accentuating one's gender conformity has a psychological function.

Introduction

This study explored gender expression and its correlates in a nationally representative sample of the U.S. adult population. The interest in gender and the way it is expressed has a long history (Ashmore & Sewell, 1998; Janssen, 2018). This history is characterized less by a gradual accumulation of knowledge, but more by changes in the perspective from which gender expression is studied. Such changes can best be illustrated by the contrast between the study of androgyny, a concept popular in the 1970s, and that of gender nonconformity, which currently has more traction, although it seems soon to be outpaced by gender diversity.

The interest in *androgyny* – having both feminine and masculine characteristics – was a response to restrictive conceptions of male and female gender roles. This interest was inspired by the idea that having characteristics of both genders would increase one's mental flexibility, promoting healthy psychological adjustment (Bem, 1974, 1985; Bem et al., 1976). Although some studies found support for the beneficial impact of androgyny, evidence was not conclusive (Feather, 1985). Findings from a meta-analysis of 26 studies suggested that there is a strong relationship between masculinity and mental health, and that although androgyny is also associated with higher levels of mental health than femininity, this association seems to be driven by the masculinity component of androgyny, rather than by femininity (Bassoff & Glass, 1982; see also Whitley, 1985). Research on androgyny resulted in extensive discussions about what it actually is, how it can best be measured, and how its impact should be tested (Kelly & Worell,

1977; Lubinski et al., 1983; Taylor & Hall, 1982; Tellegen & Lubinski, 1983).

Although the interest in androgyny has not disappeared – it has actually been suggested that this interest should be revived (Martin et al., 2017) – *gender nonconformity* seems to have become the primary perspective on gender expression (Collier et al., 2013; Kahn & Halpern, 2019; Logie et al., 2012). Gender nonconformity is deviation in terms of expression and identity from what is socially defined as “gender appropriate.” Interest in gender nonconformity is driven by an awareness that, mediated through stigma, it may result in negative health outcomes, especially in sexual minority populations. Such outcomes have been identified among lesbian, gay, and bisexual adolescents and adults (Bos & Sandfort, 2015; Martin-Storey & August, 2016; Rieger & Savin-Williams, 2012; Sandfort et al., 2007; Van Beusekom et al., 2016). Li et al. (2016) also showed that gender nonconformity was associated with depression in young heterosexual adults. Horn (2007) found that adolescents' conceptions of the acceptability by their peers were associated with both their sexual orientation and their conformity to gender conventions. Individuals who were non-conventional in appearance and mannerisms were less acceptable than those who conformed to gender conventions. Boys rated heterosexual individuals who were non-conforming in appearance as less acceptable than gender-conforming gay individuals.

For some time, the expression of gender has been associated with sexual orientation and identity, with same-sex attracted persons seen as deviating from what is expected in terms of their gender (Chauncey, 1994; Sandfort, 2005; Terman & Miles, 1936). Specifically, gay men were viewed as less

masculine and more feminine than heterosexual men, whereas for lesbian women the opposite perception prevailed. Results from a cross-cultural study among gay men suggest that a nonconforming gender identity is a function not of homosexuality as such but of the degree of sex role stereotyping and anti-homosexual attitudes of the society subjects live in (Ross, 1983). However, despite some changes in the status of gay men, lesbian women, and bisexual men and women in society, the perspective that gender is associated with sexual orientation seems to be persistent (Blashill & Powlishta, 2009; Kite & Deaux, 1987; Martin, 1990; McCreary, 1994; Roach et al., 2016; Taylor, 1983). Findings from another cross-cultural study suggest that the relationship between sexual orientation and gender-related traits is moderated by culture, with larger heterosexual-homosexual differences in gender-related traits being more prominent among persons from traditional, gender-polarized cultures (Lippa & Tan, 2001). Although these conceptions have been criticized as conflating gender with sexual orientation (Hekma, 1996), some evidence suggests that gay men are, on average more feminine than heterosexual men are (Bailey & Zucker, 1995; Lippa, 2002; Pillard, 1991; Zucker, 2008). However, these differences are not absolute. Furthermore, although the idea has been disputed, evidence from prospective studies suggests that differences in gender expression between heterosexual and same-sex attracted persons are already present at a young age, even before their sexual orientation becomes manifest (Gottschalk, 2003; Li et al., 2017; Lippa, 2008; Steensma et al., 2013; Zucker, 2005, 2008; Zucker et al., 2006). It remains unclear whether the association between gender expression and sexual orientation results from a self-fulfilling prophesy, is an historical artifact that might disappear when stigma is eliminated, is a subcultural phenomenon that facilitates recognition or reinforces a sense of community among same-sex attracted persons, or whether it has biological correlates.

The current interest in gender is infused by the idea that there are more than two genders, the critique of the binary conception of gender, an interest in gender diversity, and doubts about the relevance of the concept of gender overall (Serano, 2016). The question of how many sexes there are was already asked by Fausto-Sterling in 1993 in the *New York Times* (Fausto-Sterling, 1993). Within sexology, this question dates even further back to the early 20th century, when scholars such as Magnus Hirschfeld started to question conceptions of “natural sex” (Mancini, 2010). Anthropological studies have documented gender diversity over the last 250 years (Ramet, 2002). That questions about gender are now articulated in the public forum greatly results from an increased strength and visibility of transgender movements.

Whereas gender nonconformity has become a major topic in the study of child development and same-sex sexuality, little is known about how gender expression and gender nonconformity are distributed in the general population (Van Caenegem et al., 2015). To our knowledge, there is no recent research directly assessing characteristics of gender expression in the U.S. population. Based on existing research, we expect gender expression to be associated with sexual orientation, with higher gender nonconformity among sexual minority persons (Bos & Sandfort, 2015; Kahn & Halpern, 2019), and related to that, to

gender expression in childhood. Additionally, based on the assumptions (1) that gender expression is partly informed by the social space available for its expression, with more restrictive norms limiting the opportunity to express diversity and reinforcing binary gender expression; and (2) that it is likely that correlates of gender expression follow the same pattern as the correlates of attitudes toward same-sex sexuality (Lefkowitz et al., 2014), one could expect greater diversity in gender expression to be associated with higher levels of education, higher income, and White race/ethnicity (Glick & Golden, 2010; Herek, 2002).

Even though it seems reasonable to expect some continuity in gender expression across the lifespan, research suggests that there is variability in this continuity between persons. Harry (1983, 1985) demonstrated a reduction in gender nonconformity in gay men during development, which he labeled “defeminization,” in association with social class. He observed a “selective defeminization by social class between childhood and adulthood” (p. 1) with a greater persistence of “cross-gendering” among “cross-gendered gays raised in blue-collar households” compared to gays in white-collar households. He interpreted this finding as a consequence of the more gender-conservative environment in blue-collar households. It is unclear how changes in gender expression from childhood to adulthood play out in the general population. Exploring this, we expect a development toward more conformity in gender expression from childhood to adulthood to be more likely among persons with lower levels of education, lower income, and of nonwhite race/ethnicity.

The Current Study

To contribute to the understanding of gender expression, the current study aimed to explore gender expression and its association with recalled gender expression in childhood, sexual self-identification, and social demographic characteristics in a representative sample of the adult U.S. population, ages 18 to 65 years. In addition, we explored correlates of changes between childhood and current gender expression.

Method

2015 National Survey Of Sexual Health And Behavior

The current study used data from the 2015 National Survey of Sexual Health and Behavior (NSSHB). The NSSHB is a decade long study, comprised of a series of probability surveys of adolescents and adults and investigating human sexual expression. Since 2009, the NSSHB has repeatedly sampled a broad spectrum of Americans, including adolescents as young as age 14 and adults in their 80s and 90s (Dodge, Herbenick, Friedman et al., 2016; Dodge, Herbenick, Fu et al., 2016; Herbenick et al., 2010; Reece et al., 2010). Seven waves of NSSHB data have been collected between 2009 and 2018; the current study used data from the 2015 survey which included questions about current and childhood gender expression.

Data from the 2015 NSSHB were collected in November and December 2015, through the nationally representative KnowledgePanel® of Ipsos (formerly GfK) (Menlo Park, CA,

USA). KnowledgePanel members have been recruited using probability methods such as random-digit dialing and address based sampling (ABS) in order to establish approximately 97–98% coverage of the U.S. Ipsos uses the U.S. Postal Service's Delivery Sequence File to support their ABS-based sampling as it includes information for all U.S. mail deliverable addresses. Through several mailings and telephone calls (if a matched landline telephone number can be identified) to those who have been randomly selected, Ipsos recruits people into the KnowledgePanel. People cannot opt-in to KnowledgePanel; membership is only by invitation through the described random sampling process. Households recruited to join the KnowledgePanel that are without Internet connectivity are offered Internet access in order to facilitate their participation. Also, panel members earn points for completing surveys. These points accumulate and can then be exchanged for cash or merchandise. Individuals in the 2015 sampling frame received an e-mail from Ipsos with a brief description of the 2015 NSSHB and an invitation to participate in the study by clicking on a link. Those who clicked on the link received an Informed Consent Statement Sheet. After signing the consent statement, participants could start filling out the survey. The raw (unweighted) KnowledgePanel distribution closely mirrors that of the U.S. population; however, Ipsos created statistical weights to account for minor differential attrition rates and non-response. The Institutional Review Board (IRB) of the Human Subjects Office at Indiana University-Bloomington reviewed and approved all study protocols (#1,408,833,205).

The general population sample of persons aged 18 to 65 years that was used for this study included 1353 persons. Excluded from the current analysis were a total of 74 persons (5.5%), including persons who did not identify their gender (1.4%) or their sexual identity (2.4%), or persons who had missing values on current and childhood gender expression (3.8% and 3.3%, respectively; missing values were overlapping and consequently add up to more than 5.5%). After weighting for gender, age, race/ethnicity, education, Census region, household income, home ownership status, metropolitan area, and internet access (weights provided by Ipsos), the analytic sample consisted of 609 men and 670 women. All results presented are based on the weighted data.

Persons who were excluded from the analyses differed significantly from participants in the analytic sample in terms of demographic background. Compared to persons included in the current analysis, excluded persons were younger ($F 18.91$, $p < .001$), less often had a college degree or higher ($\chi^2 = 5.54$, $p = .019$), were less likely to be employed ($\chi^2 = 6.98$, $p = .008$), more often had an income less than 75,000 US dollars (USD) ($\chi^2 = 13.14$, $p < .001$), and reported less often that they were in an ongoing relationship ($\chi^2 = 5.79$, $p = .016$). Furthermore, excluded persons were more likely to report to be gay or lesbian than the persons included in the analysis ($\chi^2 = 10.81$, $p = .004$).

Measures

Gender Expression

Current gender expression was measured with a masculinity/femininity (M/F) scale, adapted from Storms (1979). This scale consisted of two items, with parallel versions for men and women. Men were asked “Do you see yourself as more

masculine or more feminine than most other men?” and “Do you think other people see you as more masculine or more feminine than most other men?” (1 = *much more masculine* to 5 = *much more feminine*; Cronbach's alpha = .87). Women were asked “Do you see yourself as more feminine or more masculine than most other women?” and “Do you think other people see you as more feminine or more masculine than most other women?” (1 = *much more feminine* to 5 = *much more masculine*; Cronbach's alpha = .85).

Childhood Gender Expression

Childhood gender expression was assessed with one item, separately for men and women. For men, this question was “As a child, were your favorite toys and games those that boys or girls played with?” (1 = *only those boys played with* to 5 = *only those girls played with*). For women, the question was “As a child, were your favorite toys and games those that girls played with or boys played with?” (1 = *only those girls played with* to 5 = *only those boys played with*). A high score on this variable indicates for men and women that they were less gender conforming or that they had higher levels of childhood gender nonconformity. These items are adapted from the Recalled Childhood Gender Identity/Gender Role Questionnaire (Zucker et al., 2006). We changed the original answering format (for the male version: 1 = *always masculine* to 5 = *always feminine*; for the female version: 1 = *always feminine* to 5 = *always masculine*) to mitigate the risk of socially desirable responses.

Change in Gender Expression

The variable “change in gender expression” was constructed by subtracting the participants' childhood gender expression score from their current gender expression score. To facilitate interpretation, we added 5 points to each score, resulting in final change scores ranging from 1 to 9. For men, lower scores on this variable mean that they became relatively more masculine (more gender conforming) and a higher score means they became less masculine (more gender nonconforming) in their adult gender expression compared to the gender expression in their childhood. For women, lower scores mean that they became relatively more feminine (more gender conforming) and higher scores mean that they became less feminine (more gender nonconforming) in their gender expression.

Sexual Identity

The NSSHB included one item to assess participants' sexual identity. Men and women received the same question: “Which of the following best describes your sexual orientation?” [*heterosexual/straight, gay or lesbian, bisexual, asexual (not sexually attracted to others), other/please describe*].

Demographics

Demographic information collected in the NSSHB included age, race/ethnicity, education, work status, household income in USD, and relationship status. To facilitate interpretation, we dichotomized the following variables: Education was dichotomized into “no college degree” versus “college degree or higher”; work status into “no” versus “yes”; household income per year into $< 75,000$ versus $\geq 75,000$ USD; and current

relationship status into “not in an ongoing relationship” and “involved in an ongoing relationship.” Age was categorized in the NSSHB dataset as follows: (1) 18–29, (2) 30–44, (3) 45–59, and (4) 60–65. For race/ethnicity participants could check the following answer categories: (1) non-Hispanic White, (2) non-Hispanic Black, (3) Hispanic, (4) two races, non-Hispanic, and (5) other.

Statistical Analysis

Analyses were conducted separately for men and women using SPSS version 26.0. A series of bivariate analyses were conducted to assess associations of childhood gender expression, sexual identity and social demographic variables with current gender expression. For the association with childhood gender expression, a Pearson r correlation was computed. For all other variables we used a series of analyses of variance (ANOVAs) with gender expression as the dependent variable and sexual identity, age, race/ethnicity, education, work status, household income, and relationship status as independent variables. In addition, a multiple linear regression analysis was conducted to examine the unique contribution of childhood gender expression, sexual identity and social demographic variables to the participants' gender expression.

Bivariate analyses and multiple regression analysis were also conducted with change in gender expression as the dependent variable and sexual identity and all social demographic variables (race/ethnicity, education, work status, household income, ongoing relationship) as predictor variables.

Because current gender expression, childhood gender expression, and change in gender expression were not normally distributed, we conducted a sensitivity analysis. For the bivariate analyses, Spearman r correlations and Welch ANOVAs were calculated. For predictor variables with more than two categories (which was the case for age and race/ethnicity), the Games-Howell test was used for the post hoc analyses. For the multiple regression analyses, we log-transformed the current and childhood gender expression, and the change in gender expression variables.

Results

Participants

Table 1 provides demographic information of the 609 men and 670 women, ages 18 to 65 years ($N = 1,279$), included in the current study. Of the men, 93.5% identified as heterosexual, 5.0% as gay and 1.6% as bisexual. The men's mean age was 42.6 years ($SD = 13.51$). Most men were White, non-Hispanic (63.9%) and had a college degree or higher (58.8%). Most men reported to be employed (75.1%). About 51% of the men reported an annual household income of 75,000 USD or higher. Almost 70% of the men were involved in an ongoing intimate relationship.

Of the woman, about 94.2% identified as heterosexual, 3.0% as lesbian, and 2.9% as bisexual. For women, the mean age was 42.3 years ($SD = 14.03$). Most women in our sample were White, non-Hispanic (62.5%) and had a college degree or higher (63.1%). Almost 60% percent of the women reported

Table 1. Participants' demographic characteristics, separately for men and women.

	Men	Women
	% (n)	% (n)
Sexual self-identification		
Straight/Heterosexual	93.5 (569)	94.2 (631)
Gay/Lesbian	5.0 (030)	3.0 (020)
Bisexual	1.6 (010)	2.9 (019)
Age, years		
18–29	24.6 (150)	24.8 (167)
30–44	29.4 (179)	28.8 (193)
45–59	33.9 (206)	32.1 (215)
60–65	12.1 (074)	14.3 (096)
Race/Ethnicity		
White, non-Hispanic	63.9 (389)	62.5 (419)
Black, non-Hispanic	10.2 (062)	12.9 (087)
Hispanic	16.9 (103)	14.9 (100)
Two races, non-Hispanic	1.4 (008)	1.4 (001)
Other	7.6 (046)	8.2 (055)
Education		
No college degree	41.2 (251)	36.9 (248)
College degree or higher	58.8 (358)	63.1 (423)
Employment status		
No	24.9 (151)	40.2 (269)
Yes	75.1 (457)	59.8 (401)
Household income in USD		
< 75,000	49.1 (299)	57.7 (387)
75,000 or higher	50.9 (310)	42.3 (283)
In ongoing relationship		
No	30.3 (183)	27.8 (186)
Yes	69.7 (421)	72.2 (484)

that they were employed and about 58% reported a yearly household income of less than 75,000 USD. Seventy-two percent of the women were involved in an ongoing intimate relationship.

Current and Childhood Gender Expression

Compared to women, men reported a significantly lower score on the *current gender expression* variable, suggesting that they were more gender conforming in their expression than women were (men: $M = 2.48$ and $SD = 0.78$; women: $M = 2.62$ and $SD = 0.81$; $p = .002$; Cohen's $|d| = .18$). The distribution of the mean scores on gender expression for men and women indicates that the majority of participants scored below the midpoint of the scale, indicating that they think of themselves as more masculine or feminine, respectively, compared to persons of their own gender. As Figure 1 illustrates, 48.9% of the men and 42.9% of the women did so. The proportions of men and women who scored above the scale's midpoint and saw themselves as less masculine and feminine compared to persons of their own gender, were much smaller: 5.7% and 14.0%, respectively.

On *childhood gender expression*, men scored significantly lower compared to women (men: $M = 1.62$ and $SD = 0.89$; women: $M = 2.39$ and $SD = 0.98$, $p < .001$; Cohen's $|d| = 0.82$). This suggests that men were more gender conforming as a child than women were. The difference between men and women in terms of childhood gender expression becomes clearer upon inspection of the distribution of the actual scores (see Figure 2). Whereas 59.4% of the men stated that they only played with toys that boys played with, this proportion was much smaller for women: only 23.8% of all women stated that they only played with toys that girls played with.

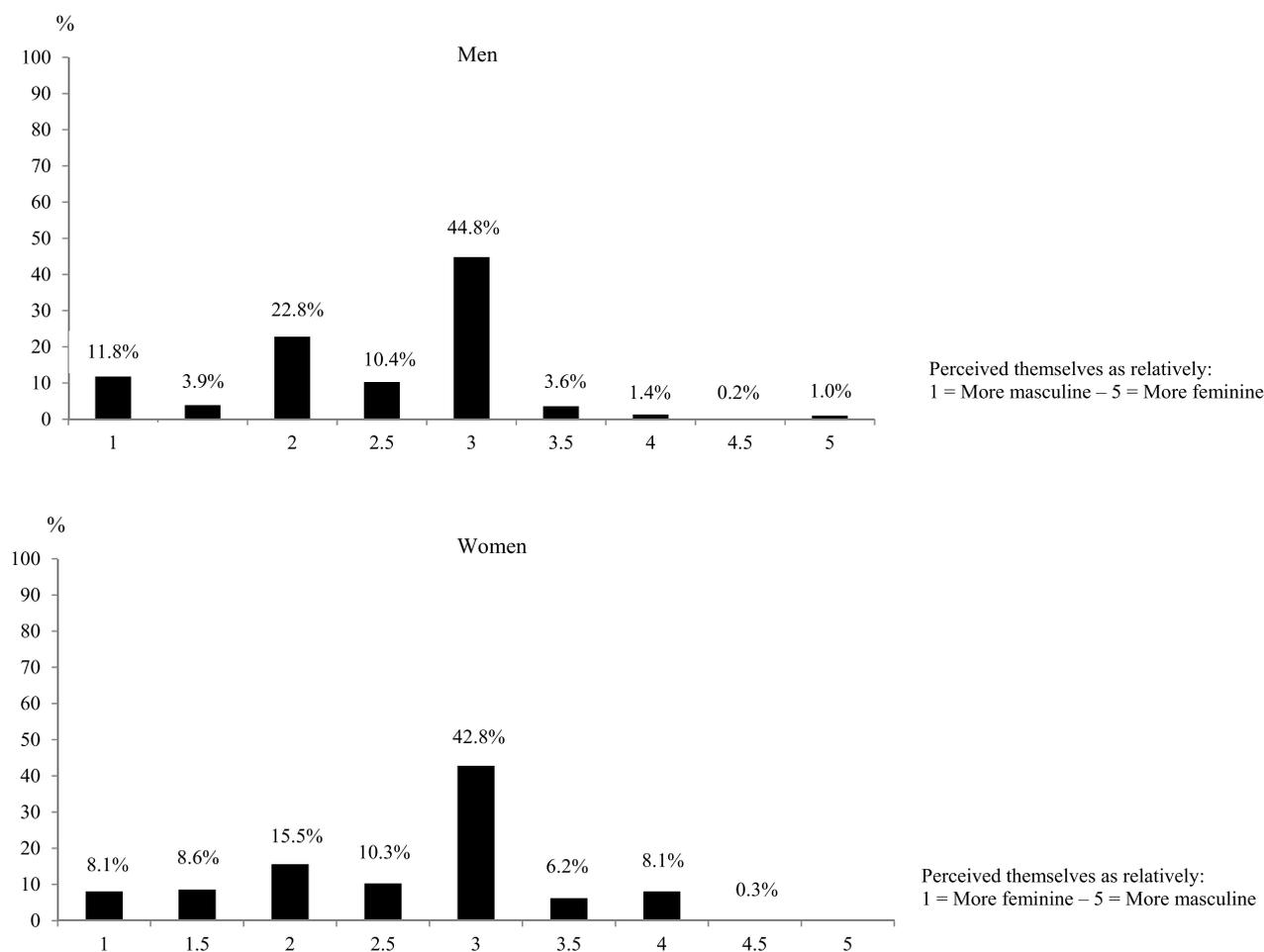


Figure 1. Distribution of mean scores on masculinity/femininity (M/F) scale, separate for men and women.

Correlates of Gender Expression

Men

Bivariate analyses showed significant associations of current gender expression with childhood gender expression, sexual identity, age, race/ethnicity, education, and household income (see Table 2) (Cohen's $|d|$: childhood gender expression = .43, sexual identity = .23, age = .26, race/ethnicity = .39, education = .18, and household income = .31). Male participants who described themselves as less masculine as a child perceived their current gender expression also as less masculine. Regarding sexual identity, gay men scored higher on gender expression compared to men who identified as heterosexual, indicating that gay men perceived themselves as less masculine than heterosexual men did. Men in the age group of 18–29 years had higher scores on gender expression compared to those between 30–44 years, indicating that the younger men perceived themselves as less masculine. Non-Hispanic White men perceived themselves as less masculine compared to Hispanic men. Hispanic men perceived themselves as more masculine compared to men who identified as having another race/ethnicity; the latter, in turn, were less masculine compared to non-Hispanic Black men. Furthermore, men with a higher level of education and men with an annual household income of 75,000 USD or higher perceived themselves as less masculine relative to the respective comparison groups.

Results from the multiple regression analysis (Table 3) showed that childhood gender expression, race/ethnicity, employment status, and household income all contributed significantly and independently to the explanation of variance in gender expression. Employment status was not associated with gender expression in the bivariate analyses. The model explained 13% of the variance in gender expression. For childhood gender expression and household income, the directions of these significant associations were the same as found in the bivariate analyses. In terms of race/ethnicity, the multiple regression analysis showed that compared to non-Hispanic white men, non-Hispanic Black men and Hispanic men had lower scores on gender expression, indicating that they perceived themselves as relatively more masculine. Regarding employment status, men who were not employed had higher scores on gender expression, indicating that they perceived themselves as relatively less masculine compared to men with employment.

Women

Bivariate analyses showed that women's gender expression was significantly associated with childhood gender expression, sexual identity, race/ethnicity, and education (see Table 2) (Cohen's $|d|$: childhood gender expression = .76, sexual identity = .25, race/ethnicity = .54, and education = .29). Regarding

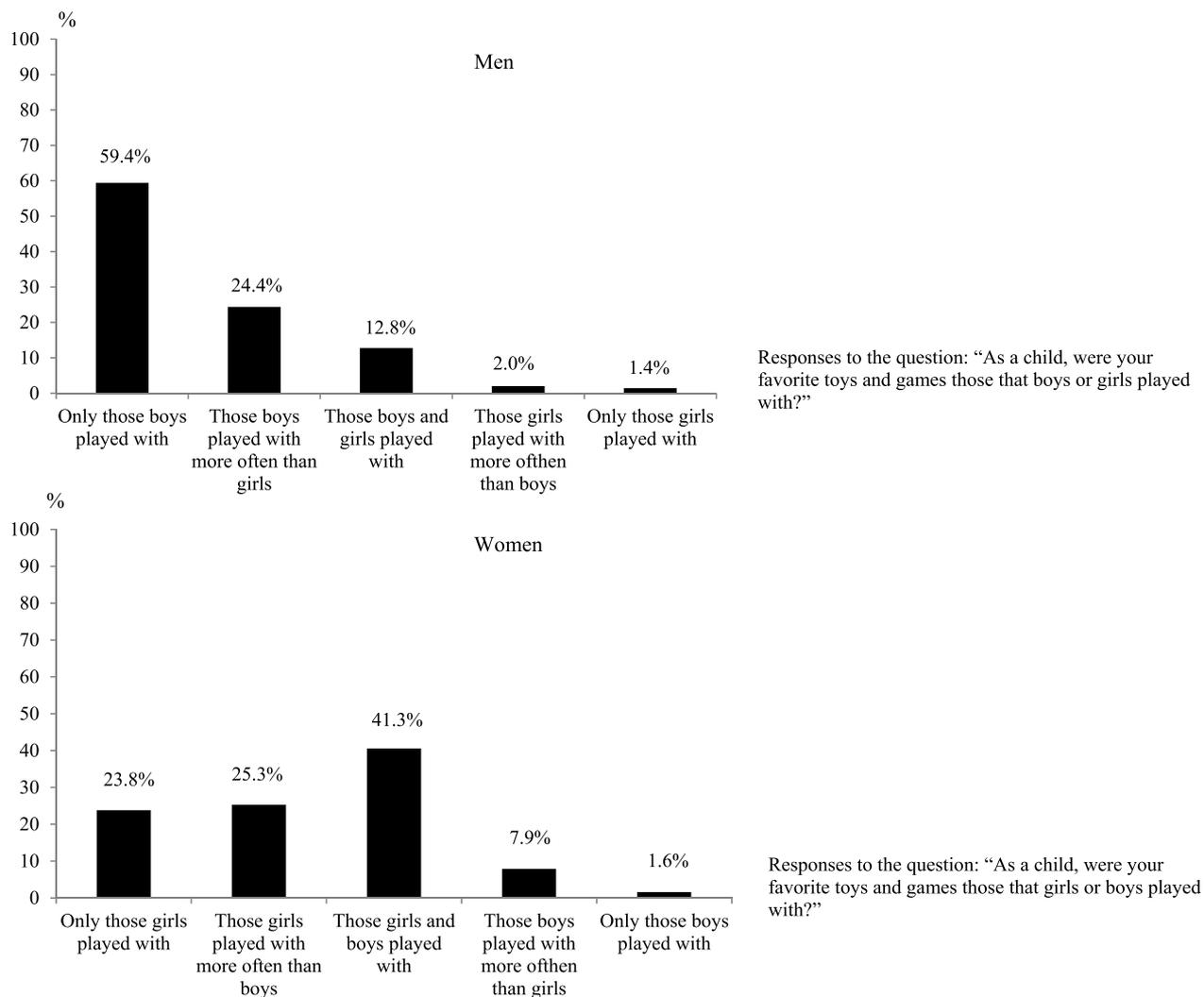


Figure 2. Distribution of responses to childhood gender expression question, separate for men and women.

childhood gender expression, women who described themselves as less feminine as a child also perceived their current gender expression as less feminine. Regarding sexual identity, it was found that bisexual women had significantly higher scores on gender expression than straight/heterosexual women and lesbian women, respectively, indicating that they perceived themselves as less feminine. Furthermore, non-Hispanic White women scored higher on gender expression compared to Black women and Hispanic women, indicating that they perceived themselves as relatively less feminine. Women who had a college degree or higher scored higher on gender expression compared to women with a lower level of education, indicating that these women perceived themselves as relatively less feminine.

Childhood gender expression, race/ethnicity, and education were also significantly associated with gender expression in the multiple regression analysis (see Table 3). The multivariable associations of childhood gender expression and education with gender expression were in the same direction as the bivariate associations. Regarding race/ethnicity, being non-Hispanic Black and being Hispanic were negatively associated with gender expression, indicating that these women perceived

themselves as more feminine than non-Hispanic white women. The model explained 20% of the variance in gender expression.

Changes in Gender Expression Between Childhood and Adulthood

Table 4 illustrates the changes from childhood to current gender expression, separately for men and women. For both men and women, most changes occurred in the upper left quadrant of the matrix, which means that few men and women crossed over from gender conforming in childhood to gender nonconforming in adulthood. Comparing men and women, we found the men's change scores to be significantly higher than the scores of women (men: $M = 5.86$ and $SD = 1.05$; women: $M = 5.24$ and $SD = 1.03$; $p < .001$, Cohen's $|d| = .60$). This indicates that men overall became relatively less gender conforming in their expression in comparison to women. Considering that the men's mean childhood gender expression score was more extreme compared to the mean score of the women (i.e., more gender conforming), this implies that men were more likely to move to the middle position of the scale than women did; despite this relatively greater change, men

Table 2. Bivariate associations of gender expression with childhood gender expression^a, sexual orientation, and demographic characteristics, separate for men and women.

	Men			Women		
	<i>M (SD)</i>	<i>r/F</i>	<i>p</i>	<i>M (SD)</i>	<i>r/F</i>	<i>p</i>
Childhood gender expression ^b		0.21	<.001		0.36	<.001
Sexual self-identification		4.13 ^c	.016		4.99 ^f	.007
Straight/Heterosexual	2.46 (0.79)			2.60 (0.79)		
Gay/Lesbian	2.87 (0.64)			2.55 (1.04)		
Bisexual	2.64 (0.52)			3.19 (0.96)		
Age, years		3.18 ^d	.024		1.90	.212
18–29	2.62 (0.72)			2.71 (0.87)		
30–44	2.38 (0.96)			2.60 (0.85)		
45–59	2.51 (0.66)			2.54 (0.78)		
60–65	2.38 (0.71)			2.64 (0.66)		
Race/Ethnicity		5.65 ^e	<.001		11.98 ^g	<.001
White, non-Hispanic	2.54 (0.74)			2.77 (0.71)		
Black, non-Hispanic	2.26 (0.90)			2.30 (0.94)		
Hispanic	2.27 (0.87)			2.28 (0.84)		
Two races, non-Hispanic	2.25 (0.95)			2.51 (0.63)		
Other	2.77 (0.59)			2.62 (0.97)		
Education		5.00	.026		14.31	<.001
No college degree	2.40 (0.89)			2.46 (0.81)		
College degree or higher	2.54 (0.70)			2.71 (0.80)		
Employment status		0.40	.529		3.26	.072
No work	2.52 (0.90)			2.55 (0.83)		
Work	2.47 (0.74)			2.66 (0.80)		
Household income in USD		14.74	<.001		0.01	.905
< 75,000	2.36 (0.78)			2.62 (0.84)		
75,000 or higher	2.60 (0.79)			2.62 (0.77)		
In ongoing relationship		2.67	.103		3.27	.071
No	2.57 (0.71)			2.71 (0.85)		
Yes	2.46 (0.80)			2.58 (0.80)		

^aFor men: Mean = 2.48 (*SD* = 0.78). Observed range: 1.00–5.00, where 1 = perceived themselves as relatively more masculine and 5 = perceived themselves as relatively more feminine. For women: Mean = 2.62 (*SD* = 0.81). Observed range: 1.00–4.50, where 1 = perceived themselves as relatively more feminine and 5 = perceived themselves as relatively more masculine. ^bFor men: Mean = 1.62 (*SD* = 0.89). Observed range: 1.00–5.00, where 1 = masculine gender expression and 5 = feminine gender expression. For women: Mean = 2.39 (*SD* = 0.98). Observed range: 1.00–5.00, where 1 = feminine gender expression and 5 = masculine gender expression. ^cStraight/Heterosexual versus Gay: *p* = .014, Straight/Heterosexual versus Bisexual: *p* = .749, Gay versus Bisexual: *p* = .721. ^d18–29 versus 30–44: *p* = .025, 18–29 versus 45–59: *p* = .539, 18–29 versus 60–65: *p* = .131, 30–44 versus 45–59: *p* = .346, 30–44 versus 60–65: *p* = .999, 45–49 versus 60–65: *p* = .611. ^eWhite, non-Hispanic versus Black: *p* = .062, White, non-Hispanic versus other: *p* = .300, White, non-Hispanic versus Hispanic: *p* = .013, White, non-Hispanic versus two races: *p* = .805, Black versus other: *p* = .006, Black versus Hispanic: *p* = .999, Black versus 2 races: *p* = .999, Other versus Hispanic: *p* = .002, Other versus two races: *p* = .358, Hispanic versus two races: *p* = .999. ^fStraight/Heterosexual versus Lesbian: *p* = .953, Straight/Heterosexual versus Bisexual: *p* = .005, Lesbian versus Bisexual: *p* = .036. ^gWhite, non-Hispanic versus Black: *p* < .001, White, non-Hispanic versus other: *p* = .659, White, non-Hispanic versus Hispanic: *p* < .001, White, non-Hispanic versus two races: *p* = .861, Black versus other: *p* = .136, Black versus Hispanic: *p* = .999, Black versus 2 races: *p* = .928, Other versus Hispanic: *p* = .084, Other versus two races: *p* = .996, Hispanic versus two races: *p* = .902

continued to be more gender conforming in their current gender expression than women.

Men

Results from the bivariate analyses showed a main effect for race/ethnicity (Cohen's $|d| = 0.47$), with non-Hispanic Black men having lower change scores compared to non-Hispanic white men, Hispanic men, and men with another race/ethnicity. Taking into account men's original childhood gender expression score, this means that non-Hispanic Black men were more likely not to change from their original masculine gender expression, while the three other groups became relatively less gender conforming. Furthermore, men with a higher level of income had a higher change score than men with lower incomes (Cohen's $|d| = 0.40$), meaning that they moved more from their original position and became relatively less gender conforming.

In the multiple regression analysis, age, race/ethnicity, and household were significantly associated with changes in gender expression. In terms of age, 30–44-year old men scored lower than 45–59-year old men, indicating that the older men were more likely to become less gender conforming. In terms of race/ethnicity, non-Hispanic Black and non-Hispanic biracial men changed less than non-Hispanic White men, indicating that the

first two groups were more likely to stay gender conforming. For income, the multivariable analysis confirmed the findings from the bivariate analysis. In total, the model explained 10% of the variance of change in gender expression (Table 5).

Women

In the bivariate analysis for women, change in gender expression was associated with race/ethnicity, education and household income (effect sizes Cohen's $|d| = .26, .16, \text{ and } .06$, respectively). Taking into account the original childhood gender expression score, these findings indicate that women with higher levels of education and a higher household income became less gender conforming compared to women with lower levels of education and a lower household income, respectively. Post hoc comparisons did not show any statistically significant differences between the different race/ethnicity groups.

The multiple regression analysis showed that only race/ethnicity was significantly associated with change in gender expression. Compared to non-Hispanic white women, Hispanic women scored lower on the change score, indicating that they remained more gender conforming than the non-Hispanic White women. In total, the model explained 3% of the variance of change in gender expression (Table 5).

Table 5. Participant characteristics, bivariate associations, and linear regression analyses with changes in childhood to current gender expression^{a,b}, separate for men and women between 18 and 65 years old.

	<i>M (SD)</i>	<i>F/r</i>	<i>p</i>	Unstandardized	Standardized	<i>p</i>	95% CI	
				<i>B (SE)</i>	Beta		low	high
Men								
Sexual self-identification		1.19	.306					
Straight/Heterosexual	5.88 (1.06)				Ref			
Gay	5.63 (0.85)			-0.29 (0.19)	-0.06	.142	-0.67	0.10
Bisexual	5.58 (1.11)			-0.32 (0.33)	-0.04	.346	-0.97	0.34
Age, years		2.47	.061					
18–29	5.83 (1.23)			-0.13 (0.11)	-0.05	.275	-0.35	0.10
30–44	5.72 (1.10)			-0.26 (0.11)	-0.11	.017	-0.46	-0.05
45–59	5.95 (0.93)				Ref			
60–65	6.05 (0.79)			0.07 (0.14)	0.02	.630	-0.21	0.35
Race/Ethnicity		8.37 ^c	<.001					
White, non-Hispanic	5.97 (0.96)				Ref			
Black, non-Hispanic	5.24 (1.45)			-0.64 (0.15)	-0.18	<.001	-0.93	-0.35
Hispanic	5.81 (0.84)			-0.08 (0.12)	-0.03	.514	-0.30	0.15
Two races, non-Hispanic	5.11 (2.12)			-0.81 (0.35)	-0.09	.022	-1.51	-0.12
Other	6.04 (1.03)			0.09 (0.16)	0.02	.563	-0.23	0.41
Education		2.38	.124	0.07 (0.09)	0.03	.450	-0.11	0.24
No college degree	5.79 (1.21)							
College degree or higher	5.92 (0.92)							
Work status		0.09	.764	-0.11 (0.11)	-0.05	.281	-0.32	0.09
No	5.84 (1.36)							
Yes	5.87 (1.02)							
Household income in USD		24.18	<.001	0.40 (0.09)	0.19	<.001	0.23	0.58
< 75,000	5.65 (1.11)							
75,000 or higher	6.07 (0.95)							
In ongoing relationship		0.08	.780	-0.17 (0.10)	-0.07	.094	-0.36	0.03
No	5.85 (1.24)							
Yes	5.88 (0.96)							
$R^2 = 0.10, F = 4.82, p < .001$								
Women								
Sexual self-identification		4.50	.608					
Straight/Heterosexual	5.25 (1.04)				Ref			
Lesbian	5.04 (0.61)			-0.13 (0.24)	-0.02	.587	-0.60	0.34
Bisexual	5.12 (1.12)			-0.10 (0.24)	-0.02	.669	-0.58	0.37
Age, years		1.67	.172					
18–29	5.17 (0.93)			-0.06 (0.11)	-0.03	.561	-0.28	0.10
30–44	5.17 (1.07)			-0.11 (0.10)	-0.05	.302	-0.31	
45–59	5.26 (1.08)				Ref			
60–65	5.43 (1.04)			0.21 (0.13)	0.07	.114	-0.05	0.46
Race/Ethnicity		2.66	.032					
White, non-Hispanic	5.29 (0.96)				Ref			
Black, non-Hispanic	5.19 (1.24)			-0.02 (0.13)	-0.01	.848	-0.27	0.22
Hispanic	5.07 (1.10)			-0.17 (0.12)	-0.06	.158	-0.40	0.06
Two races, non-Hispanic	4.42 (1.42)			-0.77 (0.34)	-0.09	.023	-1.43	-0.10
Other	5.34 (0.86)			0.06 (0.15)	0.02	.671	-0.23	0.36
Education		4.33	.038	0.14 (0.09)	0.06	.142	-0.05	0.32
No college degree	5.13 (1.02)							
College degree or higher	5.30 (1.03)							
Work status		4.27	.514	0.00 (0.09)	0.00	.972	-0.17	0.17
No	5.20 (1.03)							
Yes	5.28 (1.03)							
Household income in USD		5.37	.002	0.15 (0.09)	0.07	.091	-0.03	0.33
< 75,000	5.16 (1.10)							
75,000 or higher	5.34 (0.91)							
In ongoing relationship		0.01	.918	-0.02 (0.09)	-0.01	.813	-0.20	0.16
No	5.20 (1.03)							
Yes	5.26 (1.03)							
$R^2 = 0.03, F = 1.77, p = .04$								

^aBased on: (Current Gender Expression - Childhood Gender Expression) + 5. Observed range for men: 1 – 8.50. Observed range for women: 2 – 8. ^bFor men a lower score means that they became more masculine (more gender conforming) and a higher score means they became less masculine (more gender nonconforming) in their gender expression between childhood and adulthood. For women a lower score means they did become more feminine (more gender conforming) and a higher score means they became less feminine (more gender nonconforming) in their gender expression. ^cWhite, non-Hispanic versus Black: $p < .001$, White, non-Hispanic versus other: $p = .993$, White, non-Hispanic versus Hispanic: $p = .611$, White, non-Hispanic versus two races: $p = .120$, Black versus other: $p = .001$, Black versus Hispanic: $p = .005$, Black versus two races: $p = .998$, Other versus Hispanic: $p = .707$, Other versus two races: $p = .117$, Hispanic versus two races: $p = .331$.

Sensitivity Analyses

The sensitivity analyses confirmed the reported findings, although there were a few minor differences. For men, the

alternative bivariate analyses showed the same associations with current gender expression. The regression analysis with the log-transformed gender expression as outcome produced similar results as the original analysis; there were two changes,

though: the association with employment status was no longer significant, while being in an ongoing relationship became a significant predictor (unstandardized $B = -0.03$, $SE = 0.02$, standardized Beta = -0.09 , 95%CI $-0.06, -0.00$, $p = .031$), indicating that men in an intimate relationship perceived themselves as more masculine.

In the bivariate analyses for men's change in gender expression, age became a significant predictor (in addition to race/ethnicity and household income) (Welch ANOVA: 2.90, $p = .036$): Older men (60–65) changed more in gender expression during the years than the younger (30–44) men. The results for the multiple regression analysis with the log-transformed change in gender expression as outcome were identical to the original analysis.

For women, the bivariate analyses for the associations with gender expression produced the same findings as the original analyses: Sexual self-identification, race/ethnicity, and education were significantly associated with gender expression. There was one difference: the post hoc comparisons for sexual self-identification showed that only the difference between bisexual women and straight/heterosexual was significant ($p = .041$); the difference between bisexual women and lesbian women was no longer significant. The regression analysis with the log-transformed gender expression as outcome variable produced the same findings as the original analysis.

Regarding changes in gender expression in women, the bivariate analyses produced similar outcomes as the original analyses, although race/ethnicity was no longer significantly associated (in the original analysis, there was an effect of race/ethnicity, but none of the post hoc comparisons were significant). The regression analysis with the log-transformed change in gender expression also produced the same results, with the exception that income was now a significant predictor (unstandardized $B = 0.18$, $SE = 0.00$, standardized Beta = 0.09 , 95%CI $0.00, 0.03$, $p = .034$), in addition to race/ethnicity (non-Hispanic, two races versus the rest).

Discussion

To our knowledge, this is one of the first studies to identify correlates of gender expression using a nationally representative probability sample of the adult U.S. population. In general, the associations we expected to find of gender expression with sexual identity, childhood gender expression, and demographic characteristics were confirmed. We observed associations of current gender expression with childhood gender expression and sexual identity. Among men, gay men scored less gender conforming compared to heterosexual men; bisexual men did not differ significantly from heterosexual men. However, lesbian women did not differ significantly from heterosexual women. In this respect, women who identified as bisexual stood out with a mean score in the gender nonconforming range (above the scale's midpoint). It could be that bisexual women, in the presence of more visibility in the media with a wider range of gender expressions, may be less likely to adhere to gender as well as sexual binaries (Baldwin et al., 2015). In the multivariate analyses, sexual identification was no longer associated with current gender expression, whereas childhood gender expression remained significant. The sensitivity analyses generally confirmed these findings.

The observed differences between men and women, with women being less gender conforming than men can be understood as a consequence of the relatively greater tolerance for gender nonconforming behavior among women compared to men. When confronted with males and females deviating from society's sex-based gender role prescriptions, people tend to respond more negatively to the males' transgressions (McCreary, 1994; Sirin et al., 2004). To make sense of the observed differences, we have to understand gender expression not only as a characteristic of individual people, but as a system that directs social interactions and that functions to maintain the current status quo (Connell, 2002).

It seems somewhat surprising that, compared to persons of their own gender, both men and women perceived themselves on average as more masculine and more feminine, respectively. Given the representative character of the sample, one would expect equal proportions of persons above and below the scale's midpoint. That we found a skewed distribution strongly suggests that self-reports of one's gender expression only partly reflect an objective reality, and are also driven by other factors, including the desire to see or present oneself in a more socially valued way.

Compared to persons of their own gender, both men and women described themselves as more masculine and feminine, respectively, when they were non-Hispanic Black or Hispanic (compared to non-Hispanic White persons). Men were relatively more masculine if they were employed and had a higher level of income. Women were relatively less feminine if they had a higher level of education; multivariately, this difference disappeared, though. The race/ethnicity-related associations suggest the importance of cultural norms and seem to be in line with earlier findings (Abrajano, 2010; Durell et al., 2007; Glick & Golden, 2010).

Changes between childhood and current gender expression were greater among persons with a more privileged social position, i.e. non-Hispanic White men, and men with higher income compared to non-White men and men with lower income, respectively; and women with a higher level of education and higher income, compared to women with a lower level of education and lower income. These findings are in line with trends observed by Harry (1983, 1985) among gay men.

It is not clear why in the multivariate analysis sexual identity was no longer associated with current gender expression, while the association with childhood gender expression remains significant. This could be an artifact of the way these concepts were operationalized. It is also possible that this finding reflects actual processes, with childhood gender expression being a precursor for some persons with adult same-sex attraction but not for all. Alternatively, it could be that for same-sex attracted persons, their nonconforming gender expression in childhood is more memorable, because of bullying experienced, than their current relative gender nonconformity.

If being employed is important for one's self-esteem and sense of gender, the association between gender expression and employment status found in men could have been expected, with men who are employed experiencing themselves relatively more masculine compared to men were not employed; it is not clear, though, why this relationship was not observed among women. It could be that by traditionally having the clearer role of caretaker within the family, being employed might be less

critical to a sense of gender expression for women than it is for men. Although one might have expected a generational change in gender expression, with gender norms becoming less restrictive and increasing gender equality (Inglehart & Norris, 2003), we did not find such an effect.

In evaluating these findings, it is important to consider that only a limited proportion of variance in gender expression was explained in each model and by relatively few predictors. Although this might be caused by random variance due to the limited ways in which critical variables were operationalized, it is likely that there are other factors that affect people's current gender expression. Candidates for this could be hormonal processes (Berenbaum & Beltz, 2016) and personality (Schmitt et al., 2017), but other factors could play a role as well, including diverging cultural norms and values, differences between rural urban environments, and class (Frable, 1997).

The use of a bipolar scale to assess current gender expression requires a critical reflection of the labels used to describe differences between groups. For instance, should higher scores on the bipolar scale be labeled "more gender nonconforming" or "less gender conforming"? Because almost all observed mean scores were below the scale's midpoint (that is closer to the more masculine/more feminine poles of the scale than their opposite poles, for men and women, respectively), we labeled differences as "less gender conforming." The use of "gender nonconforming" should be restricted to values that are higher than the midpoint of the scale. The interpretation of scale values should, of course, take into account the question that elicits these scores. In our case, we tried to provide an objective comparison point: other men and other women, for men and women, respectively. A similar problem exists, though, where the question asks for the description in terms of masculinity and femininity. For instance, Wylie et al. (2010) asked "A person's appearance, style, or dress may affect the way people think of her or him. How do you think people describe your appearance, style, or dress?" with response options ranging from "very feminine" to "very masculine" on a seven-point scale. What would count as gender nonconforming in this situation? If men score above the midpoint of this scale, they should not be considered as gender nonconforming; this is contrary to the way Wylie et al. interpreted the scale. "Gender nonconforming" would be applicable for men who scored various grades of more feminine than masculine, i.e. below four on this particular scale. Furthermore, one could argue that men who see themselves as "very masculine" could rightfully be classified as gender nonconforming, even though in this situation the nonconformity is more an "over-conformity." We think that a thorough rethinking of the conceptualization and operationalization of gender nonconformity is urgently needed.

Our findings should be interpreted taking into account various limitations. To start with, due to space restrictions in the survey instrument, current and childhood gender expression were assessed with two items and one item, respectively. This might have affected both the reliability and validity of the assessment. Furthermore, the retrospective assessment of childhood gender expression is based on people's memories, which might be biased; it is not clear, though, whether this bias would differentially affect the various subgroups within the sample. In addition, the assessment of gender expression is

based on people's self-report, which does not necessarily reflect how people are seen by others. It would be critical to find out how people arrive at a self-report of their gender expression (see for instance, Wylie et al., 2010). Finally, the 5.5% of persons in the original sample who had to be excluded because of missing information about current and childhood gender expression, gender identity, and sexual identity differed in terms of their demographic background from persons included in the analysis. Although we do not expect that excluding these persons had a major impact on the reported findings, the actual impact of excluding these persons cannot be determined.

The current exploration of gender expression was limited by the information collected in the survey on which the current study was based. No information was collected about health status or health-related behaviors, prohibiting us from exploring the potential impact of gender expression on health and health behaviors. Future studies should explore how gender expression is related to stigma, relationship formation and satisfaction, and mental health.

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