



Health Risk Behaviors among Gender Expansive Students

Making the Case for Including a Measure of Gender Expression in Population-Based Surveys

TITLE PAGE

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GLOSSARY

Androgynous youth are those who are neither very masculine nor very feminine or who have a gender expression that is both masculine and feminine about equally. In this report, students who selected “equally feminine and masculine” are referred to as “androgynous.”

CDC is an acronym referring to the Centers for Disease Control and Prevention, a federal agency that administers the Youth Risk Behavior Surveillance System.

Gender expression is the external presentation of an individual’s gender-related attributes, which may include aspects such as dress, voice, activities, appearance, and mannerisms. It is distinct from gender identity, which refers to an individual’s internal sense of gender. All people, regardless of their sexual orientation or gender identity, have a gender expression.

Gender expansive youth are those whose gender expression differs from that traditionally associated with their sex assigned at birth. In this report, we use gender expansive as a broad term that includes youth who may be androgynous, nonbinary, genderqueer, or gender nonconforming.

Gender nonconformity is an enduring difference between an individual’s gender expression and sex-based stereotypes or traditional gender roles assigned to their gender. In this report, feminine males and masculine females are referred to as gender nonconforming. Females who selected “somewhat,” “mostly,” or “very” masculine when answering the gender expression question are referred to as “masculine females” and males who selected “somewhat,” “mostly,” or “very” feminine are referred to as “feminine males.”

Health risk behaviors as described in this report refer to variables measured through the Youth Risk Behavior Surveillance System. Note that some of these variables may refer to health outcomes or even protective factors rather than risk behaviors.

LGBT is an acronym referring to people who are lesbian, gay, bisexual, or transgender.

Population-based data is data collected using sampling procedures that allow for analyses and statistical inferences that can be generalized to a population. In this report, population-based data has been obtained through the Youth Risk Behavior Surveillance System, which collects data among secondary school-age students.

Sexual minority youth are those whose sexual identity, orientation, or practices differ from the majority of the surrounding society. The term is primarily used to refer to lesbian, gay, and bisexual individuals. In this report, youth who selected “Gay or Lesbian,” “Bisexual,” or “Not sure” are referred to as sexual minority youth.

Sexual orientation is an enduring pattern of emotional, romantic or sexual attraction, behavior, or identity that refers to the gender of one’s partners in relation to one’s own gender identity. While sexual orientation is often discussed in terms of four categories, gay (men who are attracted to other men), lesbian (women who are attracted to other women), bisexual (women and men who are attracted to both their own and other genders), and heterosexual (women who are attracted to men and men who are attracted to women), the LGBT community also includes other sexual orientations, such as queer and pansexual. People do not need to be sexually active in order to have a sexual orientation.

Transgender people are those whose gender identity is not fully congruent with their assigned sex at birth. Some transgender people may be gender expansive and some gender expansive people may be transgender.

YRBSS is an acronym referring to the Youth Risk Behavior Surveillance System, a federal population-based survey that collects data on health risk behavior among students.

EXECUTIVE SUMMARY

BACKGROUND

Youth whose gender expression does not fit traditional roles based on their sex assigned at birth, often referred to as gender nonconforming, gender expansive, or nonbinary youth, are at increased risk for a variety of health risk behaviors. Both schools and the public are increasingly aware of youth who may be characterized as gender expansive. The federal government has also made clear to schools that federal Title IX non-discrimination protections, which protect students on the basis of sex, include protection from discrimination and harassment due to sex-based stereotypes and gender expression.

Research on gender nonconformity among sexual minority youth has shown that such youth face an increased risk of victimization (bullying, abuse, sexual harassment) and worse behavioral health outcomes (depression, suicide, drug use) compared to their peers. However, there has been little research on other categories of

expansive youth, and the majority of states and municipalities gather no health risk behavior data on gender expansive youth.

In 2012, the CDC approved an optional question (see sidebar) to assess gender expression and gender nonconformity, for use with the Youth Risk Behavior Surveillance System (YRBSS), the nation's primary public health surveillance tool for secondary school-age youth. In 2013 and 2015, four municipalities (Broward County FL, Chicago IL, San Diego CA, Los Angeles CA) chose to use this optional question. This report represents the first broad analysis of the data gathered through these surveys, providing an analysis of approximately 60 health risk behaviors across the distribution of gender expression for males and females among more than 9,000 students. **This report demonstrates the value of including a measure of gender expression and analyzes how gender nonconformity interacts with the critical health risk behaviors measured in the YRBSS.**

FINDINGS

The YRBSS gender expression survey item is able to assess both gender expression and gender nonconformity (through contrast to the YRBSS sex item) consistently across YRBSS sites. While gender expansive youth may not use an identity label, a review of six YRBSS data sets (N = 9,307 students) reveals that approximately 14.7% of males have a gender expression that is somewhat/mostly/very feminine and 3.7% of females have a gender expression that is somewhat/mostly/very masculine. There were similar percentages of androgynous males (10.0%) and females (11.2%). Data collected from these large, urban school districts shows that there is no relationship between gender expression and race or age. Sexual minority students comprise 12.4% of the combined data set, and **the majority of gender expansive students are heterosexual.**

This report shows that gender expansive students, including both gender nonconforming and androgynous youth, are at **higher risk for a number of health risk behaviors than their more gender conforming peers.** Likely due to this higher risk, **gender nonconformity among students is associated with reduced academic performance.** Moreover, many of these associations are nonlinear, suggesting that **in some cases androgynous youth (particularly females) are more at risk than their more masculine or feminine peers.** Gender expansive students who are heterosexual also face disparate health risk behaviors, showing that **gender expression is associated with health risk behaviors independently of sexual orientation.** Finally, this

report shows that adding a measure of gender expression to a survey which already includes sexual orientation measures can identify health risk behaviors where **gender nonconformity enhances risk among sexual minority students.**

MEASURING GENDER EXPRESSION

The question wording approved by the CDC for use in the YRBSS and used in this report reads:

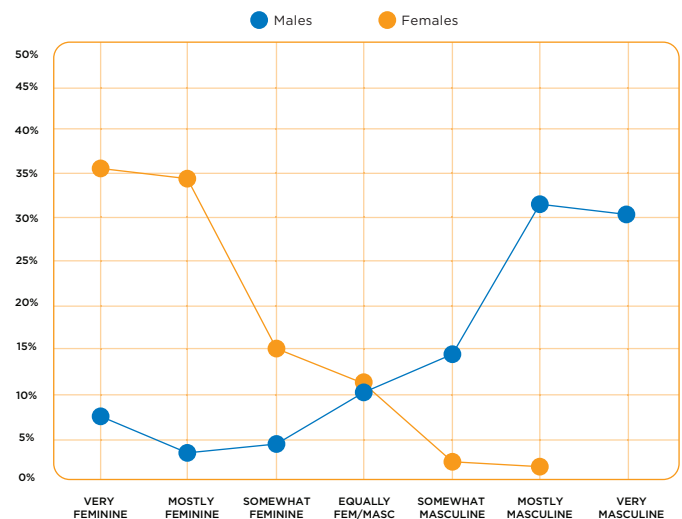
A person's appearance, style, dress, or the way they walk or talk may affect how people describe them. How do you think other people at school would describe you?

Response Options: *Very feminine; Mostly feminine; Somewhat feminine; Equally feminine and masculine; Somewhat masculine; Mostly masculine; Very masculine*

SUPPORTING STUDENT HEALTH AND ACADEMIC ACHIEVEMENT

Using the gender expression question will help educators, policymakers, advocates, and public health practitioners to develop a greater understanding of gender expression and gender nonconformity and how they relate to health risk behaviors among students. The data show that gender expansive youth are less likely than their peers to succeed academically. Therefore, sites that include the gender expression YRBSS question are better situated to understand the depth and breadth of the risk behaviors and health disparities faced by gender expansive students, to create or modify programs and policies to meet their particular needs, and to improve their academic success. If state and local education and health agencies have no way to assess the

Gender Expression Among All Males and Females



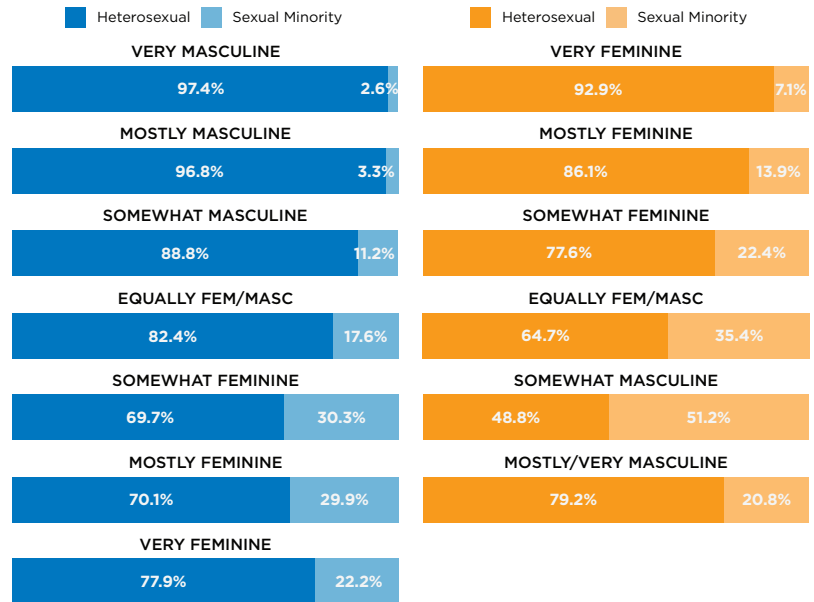
health risks facing gender expansive students, they will be unable to address the needs of these vulnerable students. This report shows that data from the YRBSS about gender expansive students can be used to enhance programmatic work in areas including bullying and violence, sexual risk behavior, suicide prevention, substance use, and weapons in school.

RECOMMENDATIONS

Based on our analysis of the YRBSS gender expression survey item and its association with health risk behaviors outlined in this report, we recommend the following for educators, policymakers, advocates, and public health practitioners.

1. *The gender expression survey item approved as an optional item by the CDC is a suitable measure to examine gender expression and gender nonconformity, and it should be used on YRBSS surveys at the state and municipal level.*
2. *Analysts can most productively examine gender expression as a continuous variable; however, when small samples preclude this, gender expression can be analyzed in three categories for each sex.*
3. *The gender expression survey item should be used in addition to survey items concerning sexual orientation identity and behavior.*
4. *Gender expression data should be used to support program development to improve education and health outcomes among students facing disparate health risk behaviors, including gender expansive students.*

Sexual Orientation by Gender Expression Among Males and Females



MASCULINE FEMALES are:

- 7x MORE LIKELY TO HAVE **CARRIED A WEAPON** ON SCHOOL PROPERTY
- 4x MORE LIKELY TO HAVE **USED HEROIN**
- 4x MORE LIKELY TO HAVE HAD SEXUAL INTERCOURSE **BEFORE AGE 13**
- 4x MORE LIKELY TO HAVE **SMOKED AT SCHOOL**
- 5x MORE LIKELY TO CURRENTLY USE **SMOKELESS TOBACCO**
- 2x MORE LIKELY TO HAVE HAD SEXUAL INTERCOURSE WITH **FOUR OR MORE PERSONS**

than **FEMININE FEMALES**

FEMININE MALES are:

- 3x MORE LIKELY TO MISS SCHOOL BECAUSE THEY FEEL **UNSAFE**
- 3x MORE LIKELY TO HAVE BEEN **ELECTRONICALLY BULLIED**
- 3x MORE LIKELY TO **ATTEMPT SUICIDE**
- 4x MORE LIKELY TO HAVE **USED AMPHETAMINES**
- 4x MORE LIKELY TO HAVE BEEN **PHYSICALLY FORCED** TO HAVE SEXUAL INTERCOURSE
- 2x MORE LIKELY TO HAVE HAD SEXUAL INTERCOURSE **BEFORE AGE 13**

than **MASCULINE MALES**

ANDROGYNOUS FEMALES are:

- 2x MORE LIKELY TO BE **ELECTRONICALLY BULLIED**
- 2x MORE LIKELY TO HAVE HAD SEXUAL INTERCOURSE **BEFORE AGE 13**
- 1.5x MORE LIKELY TO BE **PHYSICALLY FORCED** TO HAVE SEXUAL INTERCOURSE
- 1.5x MORE LIKELY TO SERIOUSLY CONSIDER **ATTEMPTING SUICIDE**
- 1.5x MORE LIKELY TO **CONDUCT NONSUICIDE SELF-INJURY**
- 1.5x MORE LIKELY TO HAVE HAD SEXUAL INTERCOURSE WITH **FOUR OR MORE PERSONS**

than **FEMININE FEMALES**

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INTRODUCTION

Youth whose gender expression does not fit traditional roles based on their assigned sex at birth are often referred to with terms including “gender expansive,” “gender diverse,” “nonbinary,” “gender nonconforming,” or “genderqueer” (hereinafter “gender expansive”). Frequently recognized as a spectrum rather than a binary construct, an individual’s gender expression often varies based on the context and environment, and for many people, gender expression changes over time. For gender expansive youth, however, gender expression consistently does not align with cultural sex-based stereotypes associated with that person’s sex assigned at birth. While a broad definition of the term “transgender” may include some individuals who are gender expansive, the term does not completely align with other categories of identity or behavior. Compared to other categories of sexual and gender minorities, gender expansive individuals are less likely to identify with a particular label or consider themselves in community with other gender expansive people.

Gender expansive people have not historically been recognized by themselves or others as a community or a common identity, which has limited broad research into gender expansive people as a population segment. Exceptions exist among various subpopulations of gender expansive individuals, wherein labels may be more frequently applied (such as genderqueer among youth, butch among lesbian women, etc.). There has been substantial academic research indicating that gender expansive young people experience disparate health risk behaviors compared to other young people. With few exceptions, however, federal population-based surveys have not had the capacity to differentiate gender expansive people or identify correlative health risk behaviors. In 2012, the Youth Risk Behavior Surveillance System (YRBSS), administered by the Centers for Disease Control and Prevention (CDC), was the first federal population-based survey to approve an appropriate survey item to allow assessment of gender expression and gender nonconformity, thereby allowing analysis of gender expansive students (see sidebar).

The YRBSS is widely used to understand and improve public health for students in the United States. Health risk behaviors identified through the YRBSS can result in a better understanding of the health of students, which can in turn help educators, policymakers, advocates, and public health practitioners to prioritize methods for ameliorating health risk behaviors and to

MEASURING GENDER EXPRESSION

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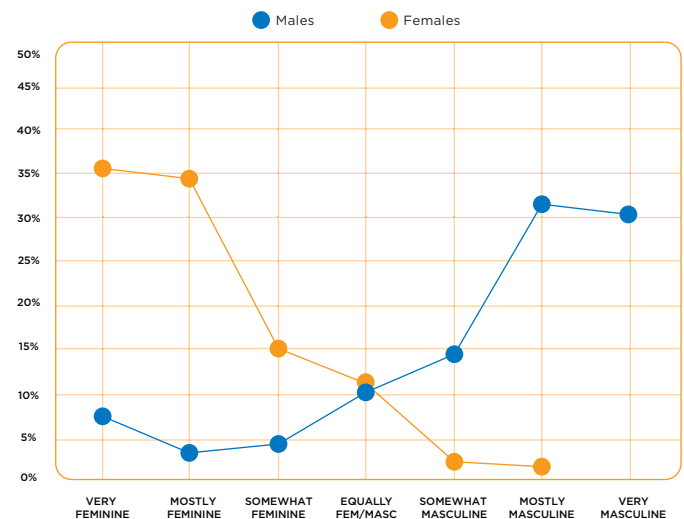
A person’s appearance, style, dress, or the way they walk or talk may affect how people describe them. How do you think other people at school would describe you?

Response Options: *Very feminine; Mostly feminine; Somewhat feminine; Equally feminine and masculine; Somewhat masculine; Mostly masculine; Very masculine*

improve risk behavior interventions. Four sites participating in the YRBSS in 2013 and 2015 used this optional survey item to assess gender expression among respondents. The combined data sets from these sites represents a unique and unprecedented opportunity to analyze student population-based data and study how health risk behaviors interact with gender expression and gender nonconformity among students. The distributions of gender expression among males and females these combined datasets within are shown in Figure 1.

This report is intended to provide a broad analysis of the YRBSS data available from each of these four sites in order to examine how gender expression and gender nonconformity relates to health disparities and risk behavior among students. In turn, this report informs how a gender expression survey item can be used within the YRBSS methodology to produce meaningful data about gender expansive students.

Figure 1:
Gender Expression Among All Males and Females



The data show that gender expression and gender nonconformity are predictors of many health risks behaviors. Knowledge of how gender expression is associated with health risk behavior can assist educators and public health professionals to design interventions to have a positive impact on gender expansive students. Without a way to assess gender expression at the population level, it is impossible to create such interventions. Through this report, we address several key questions:

- What health risk behaviors among students are associated with gender nonconformity?
- How does gender nonconformity interact with health risk behaviors among sexual minority students?
- Can YRBSS sites employ this survey item to generate data about gender expansive students?
- How should this gender expression survey item be analyzed to produce statistical inferences that are useful to educators, policymakers, advocates, and public health practitioners?
- What further research is needed to better understand this construct and make the best use of gender expression as a predictor for health risk behaviors?

The federal government has repeatedly made clear that federal non-discrimination protections for students based on sex include protection from discrimination and harassment due to sex-based stereotypes and gender expression (Lhamon 2014). Moreover, the CDC has emphasized the importance of greater integration between health and education to improve students' cognitive, physical, social, and emotional development through its Whole School, Whole Community, Whole Child (WSCC) model (ASCD et al. 2014). With the additional data provided by this survey item, state and local education and health agencies will be better positioned to understand linkages between gender expression and health risk behaviors, allowing them to more effectively seek funding for and implement programs to redress these disparities. As has been demonstrated with sexual minority students (Kann et al. 2011), population-based surveillance research may reveal unexpected linkages or more complex patterns of association than can be assessed in small group research (Wylie et al. 2010). This, in turn, will help educators, policymakers, advocates, and public health

practitioners develop a greater understanding of gender expression and gender nonconformity, allowing them to better address harassment and discrimination, promote inclusive education, foster safety at school, improve access to school-based and school-linked health services, and improve educational outcomes.

LITERATURE REVIEW

Research from convenience samples has suggested that gender nonconformity is associated with victimization in various settings, including: bullying and harassment in school (Harris Interactive & GLSEN 2005; Reisner et al. 2015; Toomey et al. 2009); rejection by peers (Smith et al. 2006); poor relationships with parents (Alanko et al. 2009); sexual harassment (Hill & Kears 2011); and abuse (Robert et al. 2012). This type of victimization has negative health consequences such as higher rates of alcohol, tobacco, and marijuana use (Iorgler et al. 2015; Baum et al. 2013); higher rates of suicidality (Iorgler et al. 2015); decreased educational outcomes (GLSEN & Harris Interactive 2012); increased depression (Toomey et al. 2009); and increased post-traumatic stress (Roberts et al. 2012). Still

TRANSGENDER YOUTH AND GENDER EXPRESSION

Transgender youth are those youth whose gender identity does not align with their sex assigned at birth. While some transgender youth display a high degree of gender nonconformity, others are more gender conforming, and therefore gender nonconformity as a construct cannot precisely capture information about transgender youth. Moreover, the survey item available through the YRBSS lacks the specificity necessary to identify sex assigned at birth of transgender students. Finally, transgender adults are estimated to make up only 0.6% of the population (Flores et al. 2016), however, the number of youth who identify as transgender is unknown. Previous attempts to identify transgender students using questions similar to those used for adults have resulted in a large number of false positives; the state of methodological literature on this topic is still comparatively underdeveloped and lacks consensus on the best method for measurement (GenIUSS 2014). Based on population estimates, it is reasonable to assume that the vast majority of gender expansive students, as defined in this report, are not transgender. For these reasons, this report is not able to comment upon whether gender expression is associated with the health outcomes measured on the YRBSS when examined among transgender students. While a small number of YRBSS sites do measure transgender identity using questions which have not been approved by the CDC, the findings of these sites have not yet been fully assessed for prevalence nor has the reliability of the responses been assessed.

other behaviors that are associated with gender, such as suicide attempts (Langhinrichsen-Rohling et al. 1998), may also be related to gender expression (Friedman et al. 2006).

However, many health risk behaviors included on the YRBSS, such as weapons and fighting risk behaviors, have not been studied in association with gender expression, nor have population-based data been available for such studies. Most research on gender expression among youth has been conducted with sexual minority youth; thus, less is known about gender expression among heterosexual youth. Although gender expression and sexual orientation are associated (Wallien & Cohen-Kettenis 2008), they are also separate constructs. Further, the lack of population-based data has limited the ability of researchers to examine the intersections between sexual orientation and gender expression. Exceptions include research showing that gender nonconformity has an enhancement effect for several sexual minority health risk behaviors, including substance use (Rosario et al. 2008), suicidality (Friedman et al. 2006), and other poor behavioral health outcomes (Toomey et al. 2009). This lack of research is beginning to change, as Iorga et al. (2015) used a large sample (n=2438) of middle and high school children on the East Coast to examine the differences between gender expression and sexual orientation in predicting different health risk behaviors. For both males and females, they found that victimization based on gender expression and based on sexual orientation were independent, and that heterosexual youth who experienced victimization based on gender expression had higher rates of alcohol, tobacco, and marijuana use, as well as suicidality.

In one of the few examples of population-based research on gender expression, Roberts et al. (2014) used the Growing Up Today Study (GUTS), which is a population-based sample, to examine cancer risk behaviors among gender conforming and nonconforming youth, finding that the least masculine males were 45% more likely than the most masculine males to smoke, and the least feminine females were 33% more likely to smoke compared to the most feminine. Similarly, Austin et al. (2016) used this sample to examine obesity risk behaviors in gender conforming and gender nonconforming youth, finding that gender expression is a strong independent predictor of body mass index in adolescents.

Recognizing the need for broader public health research into health risk behaviors associated with gender nonconformity, researchers developed a series of population survey items

employing the construct of socially assigned gender nonconformity (Wylie et al. 2010). The gender expression question selected for the YRBSS measures socially assigned gender expression, not internal self-perceptions about gender. It combines elements of two questions that performed well in cognitive testing (Wylie et al. 2010). This measure has significant strengths, including good results from cognitive testing and pilot testing among youth (GLSEN in press; Greytak et al. 2014). Because gender nonconformity itself is inherently subjective, the survey items developed instead ask individuals how other people would assess their gender expression in terms of masculinity and femininity. While less comprehensive than longer assessments of gender expression such as the Bem Sex Role Inventory (Bem 1976), the survey item has the advantage of being only one question. This question focuses on how others perceive one's gender expression because many preventable causes of health risk behaviors associated with gender expression rely on others' perceptions. For example, systemic discrimination and victimization results from others' assumptions about a person's identity or expression rather than one's own perception (Jones et al. 2008).

Other research has shown that the associations between gender expression and health risk behaviors may be nonlinear (Wylie et al. 2010). For example, it may be androgynous youth who are at greatest or least risk for any given health risk behavior rather than other gender nonconforming youth. This suggests the importance of examining the seven-point scale as a continuous rather than categorical variable (see *Statistical Analysis, below*). Further, health risk behaviors may be associated with *femininity* (among both males and females), *masculinity* (among both males and females), or may be elevated among androgynous (mid-scale males and females) or gender nonconforming (masculine females and feminine males) youth. This suggests the importance of analyzing data by sex (see *Measures* below for a discussion of the limitations of sex as measured on the YRBSS).

This report broadens the available information about gender expression and health risks and outcomes through analyses of data from more than 9,000 secondary school-age students who participated in six Youth Risk Behavior Surveys that included the gender expression survey item. The report is intended to demonstrate the utility of measuring gender expression in population-based surveys of students, analyzing the data in association with the health risk behaviors already measured on such surveys, and using findings to improve public health.

METHODS

YOUTH RISK BEHAVIOR SURVEILLANCE SYSTEM (YRBSS)

The Youth Risk Behavior Surveillance System (YRBSS) is a biennial, school-based survey of adolescents in grades 9 through 12. The YRBSS, which is administered by the CDC, has been conducted since 1991 by the majority of states and some larger municipalities. The survey method is designed to be representative of the population of high school students in that state or municipality. The purpose of the YRBSS is to identify the prevalence and trends of health risk behaviors and to improve policy and decision-making related to youth education, health, and safety. The surveys consist of a set of core questions about demographics, injuries, violence, suicide, sexual behavior, tobacco use, alcohol and other drug use, and dietary behaviors and physical inactivity, supplemented by states and municipalities with optional questions from a list of such questions approved by the CDC (CDC 2013).

The data used in this report comes from four municipalities that used an optional gender expression survey item in the 2013 and 2015 YRBSS cycle. Of these four sites, all four provided data from 2013 (Broward County, Florida; Chicago, Illinois; Los Angeles, California; San Diego, California), two sites provided data from 2015 (Broward County and San Diego), one site had data that was not suitably weighted in 2015 and was therefore discarded (Chicago), and one site declined to provide 2015 data for this study (Los Angeles). A total of 9,746 students participated in these surveys. In order to draw the sample for the YRBSS, sites use a custom software program to draw two-stage cluster samples of schools and classes within sampled schools; the first sampling stage selections are drawn with proportional probability by the number of students enrolled in the school. Like all other sites, the four municipalities included in this study include only students in the funded school district (e.g., the San Diego Unified School District, not greater San Diego).

The four sites studied use passive consent, meaning that students are surveyed unless their parents elect that their children opt out by submitting a form. During the course of the survey, a standardized script is read to students by a survey administrator, and the students then complete self-report questionnaires. Information about the schools and the relevant population are used to weight the data. Data weights are

HOW DATA ARE DESCRIBED IN THIS REPORT

While many reports of this kind make use of precise scientific conventions in language describing results, this report uses colloquial language to make data and analysis more accessible to those who may be unfamiliar with statistical and scientific writing.

One example is the way that the phrase “as likely as” is used in this report. While in scientific writing, saying something is “twice as likely as” always refers to an odds ratio equal to 2, this report refers to “twice as likely” when referring to frequencies rather than odds ratios. For example, if 30% of males use cocaine and 15% of females do, the report might say “males are twice as likely to use cocaine as females,” even though the odds ratio in this case is 2.4, not 2.0. All instances of comparative frequencies refer to an overall difference by gender expression that is statistically significant, even though we do not test each individual odds ratio.

Similarly, when frequencies vary in a complex way based on gender expression and/or the health risk behavior cannot be easily described in terms of ratios, we make use of imprecise terms such as “somewhat more/less likely,” representing a health risk behavior for which there is a difference fewer than ten percentage points (<10% difference) based on gender expression, and “substantially more/less likely,” representing a health risk behavior in which there is a difference equal to or more than ten percentage points ($\geq 10\%$ difference) based on gender expression. Scientists who prefer more precise information may refer to the appendices for detailed reports of the findings or may consult the authors of the report.

Because all of the outcomes listed are binary (yes or no), logistic regressions are used in all analyses unless otherwise specified. Reported coefficients are the odds ratios (exponentiated beta weights). Technically, all increases and decreases are increases in probability of an event. However, in order to be succinct, we have eliminated the word “probability” when describing data. Similarly, all data are self-reported on the YRBSS. However, we do not include the word “reported” in sentences describing the findings or “self-identified” to refer to gender expression categories.

Because the data in this report are cross sectional, we cannot determine a causal direction for the associations found between gender expression and the health risk behaviors measured. Thus, we discuss “associations” rather than “causes” of health risks and outcomes.

created by Westat, the contractor tasked by the CDC with providing technical assistance for the YRBSS. These data are used to create a representative sample for each municipality. Data are weighted and merged in SAS, a commonly used data management and analysis program. The data can be analyzed in a variety of statistical programs that can account for the complex sampling design and weights.

MEASURES

The YRBSS core includes measures of sex, race, age, and grade. In 2013, sites could also include a measure of sexual orientation, “Which of the following best describes you?” with the answer choices “Heterosexual (straight)”, “Gay or Lesbian”, “Bisexual” or “Not sure.” In 2015, this sexual orientation question was moved to the YRBSS core. This sexual orientation question was used by each site in 2013, so all six datasets used in this report include this question. The YRBSS does not include a measure of socioeconomic status. Demographics relating to the sample for this study are found in Table 1.

Note that the sex demographic question used on the YRBSS provides limited information because it does not differentiate sex assigned at birth, which has an effect on the analysis of gender expression by sex. Throughout this report, we will define “males” as individuals who selected male and “females” as individuals who selected female on this sex demographic item.

All health risk behaviors from the YRBSS core were examined; only those with sufficient sample size are included in the findings of this report. In addition, a small number of optional health risk behaviors were analyzed. Appendix III includes a list of health risk behaviors analyzed, including those excluded for reasons of sample size and non-significance.

STATISTICAL ANALYSIS

All statistical analyses were performed in STATA, a commonly used statistical package which can account for the complex sampling design used in the YRBSS (CDC 2014). Data were combined into a single data set across sites and years and checked for agreement with the codebooks provided by each site. In two cases, similar health risk behaviors were combined (fasting, vomiting, and using diet pills to lose weight were combined, as were being teased or harassed for being gay). All outcome variables were dichotomized. Frequencies (weighted and unweighted) were performed on all variables used in analysis. Following the guidance available from the CDC,

proportions and regressions were calculated using the SVY family of procedures (CDC 2014).

Within each sex, the proportion of each gender expression category that had designated the relevant health risk behavior was plotted on a scatter plot (see below). Previous literature suggests that gender nonconformity may be related to health risk behaviors in a linear or parabolic manner (Wylie et al. 2010) and visual examination of scatter graphs suggested that this was true in many cases. Therefore, quadratic relationships were examined for all health risk behaviors and were included in regressions if they added explanatory value to the relationship between gender expression and any of the health risk behaviors. While cubic relationships were also tested, those present were all small, and, given the sample size restrictions, we made the decision not to examine relationships more complex than quadratic terms.

Bivariate analysis revealed no statistically significant relationships between race and gender expression within the samples of males or females. Similarly, there was no statistically significant relationship between age and gender expression among either males or females. This accords with previously published analyses examining the cognitive testing outcomes of related measures (Wylie et al. 2010). Thus, no control variables were used in regression analyses. Logistic regressions were used for all analyses because all outcomes were binary (1=present, 0=absent). In addition to examining bivariate relationships between gender expression and each health risk behavior within each sex group, analyses were also performed within heterosexual and sexual minority samples (*see Sexual Orientation and Gender Expression below*).

Gender expression was treated as a continuous variable (Appendix I), and it was also analyzed in three categories (Appendix II). In this latter analysis, females who selected “somewhat,” “mostly,” or “very” feminine and males who selected “somewhat,” “mostly,” or “very” masculine are categorized as feminine females or masculine males, respectively. Females who selected “somewhat,” “mostly,” or “very” masculine when answering the gender expression question and males who selected “somewhat,” “mostly,” or “very” feminine are referred to as masculine females or feminine males, respectively. Females and males who selected “equally feminine and masculine” are referred to as androgynous.

Unless otherwise specified, the cutoff for statistical significance is a p-value less than or equal to .05. Weighted estimates of the population are rounded to the nearest hundred and percents are rounded to two significant digits. Following the criteria established by the CDC for sexual minority youth (CDC 2013), we do not report statistics that represent fewer than 25 respondents (unweighted) in the denominator. In addition, we do not report any data that include categories with five or fewer respondents in the numerator due to potential concerns about confidentiality. All analyses were checked for sufficient sample size and categories with small samples were combined. Due to the large number of outcomes which had insufficient sample size for “mostly” and “very” masculine females, these two categories have been combined throughout the analysis. All statistical analyses were checked for accuracy by a second analyst.

LINEAR AND HIGHER ORDER ASSOCIATIONS

In order to provide readers with a general understanding of how gender expression is associated with the relevant health risk behavior, in the summary tables we have provided the icons described below to demonstrate the type of association between gender expression and the health risk behavior in question. Example scatter plots of each “shape” noted in the summary tables are shown below.

While no “real world” data fit linear or curvilinear patterns perfectly, the “shape” of an association shows how quickly the probability of the health risk behavior increases as gender nonconformity increases and whether it always increases or whether it decreases after a high point. In linear shapes, the probability increases or decreases steadily as gender nonconformity increases, while in quadratic shapes, the probability increases or decreases much more rapidly before and/or after hitting a high point. Among associations that fit a quadratic model, some may show peaks for the middle or androgynous group, while others show peaks elsewhere. This is why the sentences in tables describing the sample of these associations may compare androgynous students to more masculine and feminine students or may compare one end of the gender expression spectrum to the rest of the spectrum.

DATA KEY



Positive Linear Example - This shape denotes a significant linear relationship between increasing gender nonconformity and an increase in the relevant health risk behavior that is steady throughout the gender expression distribution. For example, more feminine males are more likely to not eat, use diet products, or vomit to lose weight than more masculine males.



Negative Linear Example - This shape denotes a significant linear relationship between increasing gender nonconformity and a decrease in the relevant health risk behavior. For example, more feminine males are less likely to be physically active at least 60 minutes per day, 5 or more days a week, than more masculine males.



Positive Quadratic Example - This shape denotes a significant quadratic relationship wherein increasing gender nonconformity and/or gender conformity is associated with an increase in the relevant health risk behavior. For example, very feminine males are about three times as likely as somewhat masculine and equally feminine/masculine males to carry a gun, and very masculine males are about twice as likely, creating a curved shape.



Negative Quadratic Example - This shape denotes a significant quadratic relationship wherein increasing gender nonconformity and/or gender conformity is associated with a decrease in the relevant health risk behavior. For example, mostly and very masculine females are half as likely as females that are equally masculine and feminine to feel sad or hopeless, and very feminine females are also substantially less likely.



This icon denotes that the data did not show a significant relationship between gender expression and the relevant health risk behavior.

Figure 2: Did Not Eat, Used Diet Products, or Vomited to Lose Weight among Males by Gender Expression

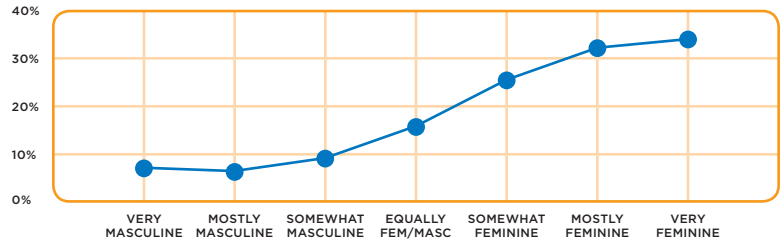


Figure 3: Physically Active at Least 60 Minutes Per Day on 5 or More Days among Males by Gender Expression

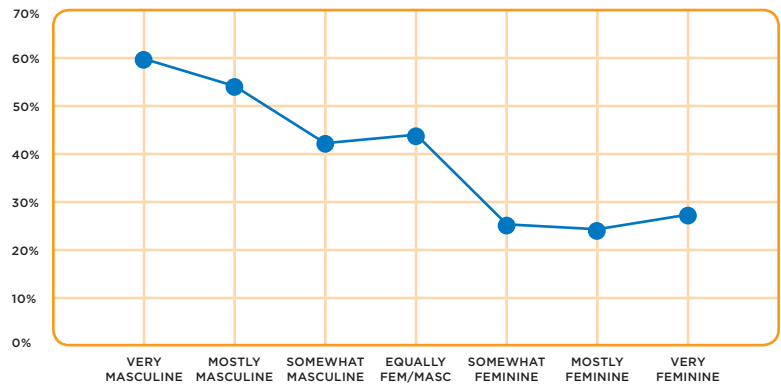


Figure 4: Carried a Gun among Males by Gender Expression

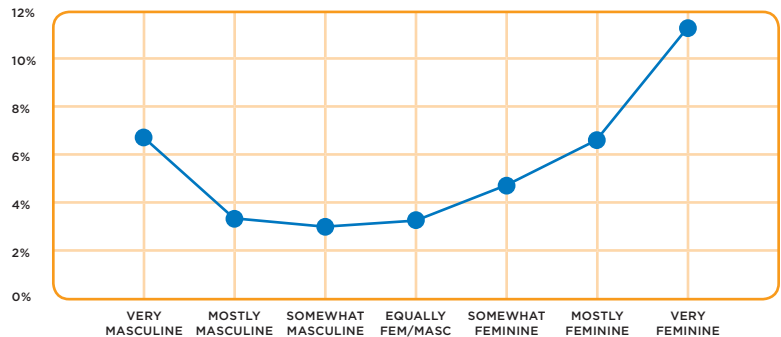
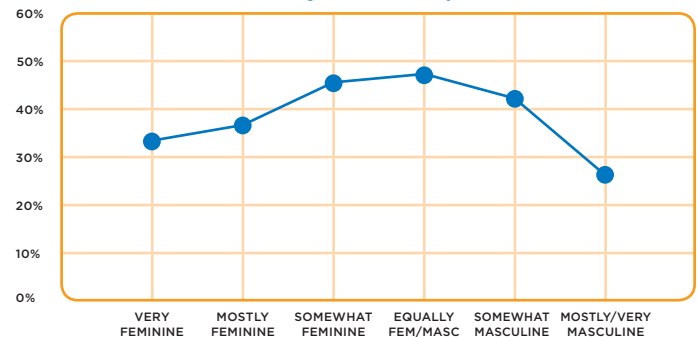


Figure 5: Felt Sad or Hopeless among Females by Gender Expression



FINDINGS

DEMOGRAPHICS

This combined sample includes 9,307 students who have valid data for the gender expression question (4.5% of surveys were missing data on this question). When data are weighted, this represents 414,700 students (Table 1). Most students were between 15 and 17 years old. There were slightly more male students (50.9%) than female students. Most students in this sample were Hispanic/Latino (24.6%), White (24.5%),

Black (23.7%), or Asian/Pacific Islander (19.1%). Sexual minority students comprise 12.4% of the combined sample. Most students had gender expressions which were very, mostly, or somewhat gender conforming (Table 2). There were similar percentages of androgynous males (10.0%) and females (11.2%), and there were a higher percentage of gender nonconforming males (14.7%) than females (3.7%).

TABLE 1: DEMOGRAPHICS OF YRBSS COMBINED DATASET (2013–2015)

		N	WEIGHTED N	PROPORTION	
AGE	14 years old	1,098	52,500	12.0%	
	15 years old	2,338	112,500	25.8%	
	16 years old	2,369	105,400	24.2%	
	17 years old	2,453	101,100	23.2%	
	18 years and older	1,421	64,200	14.7%	
SEX	Female	4,799	214,200	49.1%	
	Male	4,899	222,300	50.9%	
RACE	Am Indian/Alaska Native	52	1,700	0.4%	
	Asian/PI	1,835	81,800	19.1%	
	Black	1,894	101,300	23.7%	
	Hispanic/Latino	2,010	105,000	24.6%	
	White	1,877	104,700	24.5%	
	All Multi.	1,855	33,100	7.7%	
SEXUAL ORIENTATION	Heterosexual	8,270	370,800	87.7%	
	Gay/Lesbian	217	10,000	2.4%	
	Bisexual	560	24,500	5.8%	
	Not Sure	400	17,800	4.2%	
SITE AND YEAR	2013	Chicago	1,581	80,700	18.4%
		Broward County	1,443	68,000	15.5%
		Los Angeles	1,619	162,700	37.1%
		San Diego	1,357	30,000	6.8%
	2015	Broward County	1,413	69,600	15.9%
		San Diego	2,333	27,900	6.4%

TABLE 2: GENDER EXPRESSION AMONG YRBSS RESPONDENTS BY SEX

	MALES			FEMALES		
	UNWEIGHTED N	WEIGHTED N	PROPORTION	UNWEIGHTED N	WEIGHTED N	PROPORTION
VERY FEMININE	278	15,500	7.4%	1,604	73,800	35.8%
MOSTLY FEMININE	133	6,400	3.1%	1,671	70,300	34.1%
SOMEWHAT FEMININE	202	8,800	4.2%	724	30,900	15.0%
EQUALLY FEM/MASC	457	20,800	10.0%	554	23,200	11.2%
SOMEWHAT MASCULINE	630	30,000	14.3%	108	4,600	2.2%
MOSTLY MASCULINE	1,473	64,900	31.3%	78	3,200	1.5%
VERY MASCULINE	1,395	62,500	29.9%			
TOTAL	4,568	208,800		4,739	206,000	

















FINDINGS BY YRBSS CATEGORY

The tables in this section illustrate a summary of the relationship between gender expression, gender nonconformity, and the health risk behaviors measured for this report. These health risk behaviors are divided into nine categories: Weapons and Fighting; Dating and Sexual Violence; Bullying, Teasing, Harassment, and School Performance; Sadness and Suicide; Other Unintentional Injury Risk Behaviors; Tobacco Use; Alcohol Use; Other Drug Use; Sexual Risk Behaviors; HIV-Related Behaviors; Weight and Weight Management; and Physical Activity and Inactivity. For each category, we also describe how the findings for the various health risk behaviors aligns with existing research.

For each health risk behavior below, we have noted whether there is a significant association between the health risk behavior and gender expression and indicated a “shape” to provide a visual representation of the simplified relationship between the health risk behavior and gender expression when measured as a continuous variable (see *Data Key* for more complete explanation of the meaning of different shapes). Appendix I shows the prevalence of each

behavior within each gender expression category and more detailed information about the strength and significance of the association between gender expression and the health risk behaviors. In addition, for each health risk behavior, we have included a summary sentence to provide a broad overview of the data for both males and females. These sentences are based primarily on the three category analysis shown in Appendix II. Note that these charts only contain health risk behaviors for which gender expression has an association for either females, males, or both. Health risk behaviors for which there was no significant association with gender expression are identified in Appendix III.

TABLE 3: WEAPONS AND FIGHTING
Risk Behaviors

	CARRIED A WEAPON	CARRIED A GUN
MALES	 <p>There is no significant relationship between gender expression and carrying a weapon among males.</p>	 <p>Feminine males are nearly twice as likely as masculine males to carry a gun.</p>
FEMALES	 <p>Masculine females are nearly three times more likely and androgynous females are two times more likely than feminine females to carry a weapon.</p>	 <p>Masculine females are eight times more likely than feminine females to carry a gun.</p>
	CARRIED A WEAPON ON SCHOOL PROPERTY	DID NOT GO TO SCHOOL BECAUSE THEY FELT UNSAFE
MALES	 <p>Feminine males are more than twice as likely as masculine males to carry a weapon on school property.</p>	 <p>Feminine males are three times more likely than masculine males to miss school because they feel unsafe.</p>
FEMALES	 <p>Masculine females are seven times more likely and androgynous females are three times more likely than feminine females to carry a weapon on school property.</p>	 <p>Masculine females are one and a half times more likely than feminine females to miss school because they feel unsafe.</p>
	WERE THREATENED OR INJURED WITH A WEAPON ON SCHOOL PROPERTY	WERE IN A PHYSICAL FIGHT
MALES	 <p>Feminine males are nearly three times more likely and androgynous males are nearly two times more likely than masculine males to be threatened or injured with a weapon on school property.</p>	 <p>Androgynous males are slightly less likely than other males to have been in a physical fight.</p>
FEMALES	 <p>Masculine females are nearly three times more likely than feminine females to be threatened or injured with a weapon on school property.</p>	 <p>Masculine females are twice as likely as feminine females to have been in a physical fight.</p>
	WERE INJURED IN A PHYSICAL FIGHT	WERE IN A PHYSICAL FIGHT ON SCHOOL PROPERTY
MALES	 <p>Feminine males are three times more likely than masculine males to have been injured in a physical fight.</p>	 <p>Feminine males are twice as likely as masculine males to have been in a physical fight on school property.</p>
FEMALES	 <p>Masculine females are three times more likely and androgynous females are nearly two times more likely than feminine females to have been injured in a physical fight.</p>	 <p>Masculine females are twice as likely as feminine females to have been in a physical fight on school property.</p>

Weapons and Fighting Risk Behaviors







According to Vaughn et al. (2012), around 3.1% of adolescents had carried a handgun in the past year. Males (4.97%) were much more likely than females (1.14%) to have carried a handgun; however, no available literature was found examining the relationship between gender expression and carrying a weapon.

Overall, gender nonconforming students are most at risk for weapons and fighting risk behaviors, whether they are masculine females or feminine males. Specifically, while there is no significant relationship between gender expression and carrying a weapon among males, masculine females are nearly three times more likely than feminine females to carry a weapon. While both feminine males and masculine females are more likely to carry a gun than are other males and females, the difference is much larger for

masculine females. The same is true for carrying a weapon on school property. Masculine females are more likely to have been in a physical fight, to be injured in a physical fight, and to be in a fight on school property than are other females.

Gender expression and physical fighting among males is somewhat more complex, as masculinity appeared to complicate this association. For example, very masculine, somewhat feminine, and very feminine males are substantially more likely to have been in a physical fight than other males. Very masculine and somewhat/mostly/very feminine males are more likely to be in a physical fight on school property, with feminine males about twice as likely as masculine males. Feminine males are three times more likely to have been injured in a physical fight than masculine males.

TABLE 4: DATING AND SEXUAL VIOLENCE Risk Behaviors

WERE EVER PHYSICALLY FORCED TO HAVE SEXUAL INTERCOURSE		EXPERIENCED PHYSICAL DATING VIOLENCE	
MALES	 Feminine males are nearly four times more likely than masculine males to have been physically forced to have sexual intercourse.	MALES	 Feminine males are twice as likely as masculine males to have experienced physical dating violence.
FEMALES	 Androgynous females are one and a half times more likely than feminine females to have been physically forced to have sexual intercourse.	FEMALES	 There is no significant relationship between gender expression and physical dating violence among females.
EXPERIENCED SEXUAL DATING VIOLENCE			
MALES	 Feminine males are twice as likely as masculine males to have experienced sexual dating violence.		
FEMALES	 Although there is a positive linear association between gender nonconformity and having experienced dating violence among females, the variation was too small to characterize.		









Dating and Sexual Violence Risk Behaviors

According to Silverman et al. (2001), teens are at higher risk of intimate partner violence than adults, and approximately one in five secondary

school-age females report physical or sexual dating violence by a partner. Espelage et al. (2014) found that more than a third of both females and males experienced physical dating violence using a large sample from the Midwest. However, no available literature was found examining the relationship between gender expression and dating and sexual violence risk behaviors.

Overall, the dating and sexual violence risk behaviors measured in the YRBSS and shown in Table 4 are associated with gender nonconformity, with a notable increase in dating and sexual violence among feminine males. However, unlike the case of certain other health risk behaviors, androgynous females are more at risk than more feminine or masculine females for being physically forced to have sexual intercourse.

TABLE 5: BULLYING, TEASING, HARASSMENT, AND SCHOOL PERFORMANCE
Risk Behaviors

	WERE BULLIED ON SCHOOL PROPERTY	WERE ELECTRONICALLY BULLIED
MALES	 Androgynous and feminine males are twice as likely to have been bullied on school property as masculine males.	 Feminine males are three times and androgynous males are two times more likely than masculine males to have been electronically bullied.
FEMALES	 Androgynous females are nearly one and a half times more likely than feminine females to have been bullied on school property.	 Androgynous females are nearly twice as likely as feminine females to have been electronically bullied.
	TEASED OR HARASSED FOR BEING GAY	GET MOSTLY AS AND BS
MALES	 Androgynous and feminine boys are three times more likely than masculine boys to have been teased or harassed for being gay.	 Masculine males are somewhat more likely than other males to get mostly As and Bs.
FEMALES	 Androgynous and masculine females are about twice as likely as feminine females to have been teased or harassed for being gay.	 Masculine females are substantially and androgynous females are somewhat less likely than feminine females to get mostly As and Bs.

Bullying, Teasing, Harassment, and School Performance Risk Behaviors

Peer-based victimization is one of the best-documented health risk behaviors associated with gender expression. Research from convenience samples has suggested that gender nonconformity is associated with bullying and harassment in school (Harris Interactive & GLSEN 2005) and with rejection by peers (Smith & Leaper 2006; Horn 2007). Moreover, such victimization is associated with poorer educational outcomes (GLSEN & Harris Interactive 2012).

Our findings align with this research, showing that gender expansive students are at greater risk for bullying, teasing, and harassment, as shown in Table 5. As with dating and sexual violence risk behaviors, the masculine females do not always have the highest prevalence for each health risk behavior. Androgynous females report bullying on school property and electronic bullying at approximately equal or even greater rates than masculine females. Both androgynous and feminine males are more likely to be bullied at school, bullied electronically, and teased or harassed for being gay than masculine males. Finally, gender expansive students, whether they are males or females, are less likely to say they get mostly As and Bs.





**TABLE 6: SADNESS AND SUICIDE
Risk Behaviors**

	FELT SAD OR HOPELESS		SERIOUSLY CONSIDERED ATTEMPTING SUICIDE	
MALES		Androgynous and feminine males are somewhat more likely than masculine males to feel sad or hopeless.	MALES	
FEMALES		Androgynous females are substantially more likely than feminine females to feel sad or hopeless.	FEMALES	
	MADE A PLAN ABOUT HOW THEY WOULD ATTEMPT SUICIDE		ATTEMPTED SUICIDE	
MALES		Androgynous and feminine males are twice as likely as masculine males to make a plan about how they would attempt suicide.	MALES	
FEMALES		Masculine females are nearly two time and androgynous females are one and a half times more likely than feminine females to make a plan about how they would attempt suicide.	FEMALES	
	NONSUICIDE SELF-INJURY			
MALES		Androgynous and feminine males are twice as likely as masculine males to conduct nonsuicide self-injury.		
FEMALES		Androgynous females are one and a half times more likely than feminine females to conduct nonsuicide self-injury.		

Sadness and Suicide Risk Behaviors

The sadness and suicide risk behaviors shown in Table 6 are more prevalent among gender expansive students, particularly feminine and androgynous males and androgynous females. As with the dating and sexual violence risk behaviors and bullying, teasing, and harassment risk behaviors, androgynous females are frequently at higher risk than more masculine or feminine females. Our findings regarding an association between gender nonconformity and sadness and suicide risk behaviors builds upon the limited existing research in this area (Haas et al. 2014; Friedman et al. 2006; Toomey et al. 2009).

TABLE 7: OTHER UNINTENTIONAL INJURY
Risk Behaviors

	RARELY OR NEVER WORE A SEAT BELT	RODE WITH A DRIVER WHO HAD BEEN DRINKING ALCOHOL
MALES	 <p>Feminine males are nearly three times more likely than masculine males to rarely or never wear a seat belt.</p>	 <p>Feminine males are one and a half times more likely than masculine males to ride with a driver who had been drinking alcohol.</p>
FEMALES	 <p>Masculine females are nearly three times more likely than other females to rarely or never wear a seat belt.</p>	 <p>There is no significant relationship between gender expression and riding with a driver who had been drinking alcohol among females.</p>

Other Unintentional Injury Risk Behaviors

Feminine males are more likely to engage in other forms of risk behavior such as rarely wearing a seat belt and riding with a driver who has been drinking alcohol. Masculine females are also more likely to rarely or never use a seat belt.

**TABLE 8: TOBACCO USE
Risk Behaviors**







EVER TRIED CIGARETTE SMOKING		SMOKED A WHOLE CIGARETTE BEFORE AGE 13 YEARS	
MALES	 Feminine males are substantially and androgynous males are somewhat more likely than masculine males to have smoked a cigarette.	MALES	 Feminine males are more than twice as likely as masculine males to have smoked a cigarette before age 13.
FEMALES	 Masculine females are substantially more likely than feminine females to have smoked a cigarette.	FEMALES	 Masculine females are three times more likely than feminine females to have smoked a cigarette before age 13.
CURRENTLY SMOKED CIGARETTES		SMOKED AT SCHOOL	
MALES	 There is no significant relationship between gender expression and currently smoking cigarettes among males.	MALES	 Feminine males are four times more likely than masculine males to have smoked at school.
FEMALES	 Androgynous and masculine females are about twice as likely as feminine females to currently smoke cigarettes.	FEMALES	 Masculine females are more than four times more likely and androgynous females are two times more likely than feminine females to have smoked at school.
CURRENTLY USE SMOKELESS TOBACCO		CURRENTLY SMOKED CIGARS	
MALES	 Feminine males are five times more likely than masculine males to use smokeless tobacco.	MALES	 Feminine males are one and a half times more likely than masculine males to currently smoke cigars.
FEMALES	 Masculine females are more than five times more likely than feminine females to use smokeless tobacco.	FEMALES	 Masculine females are somewhat more likely than feminine females to currently smoke cigars.

Tobacco Use Risk Behaviors

Gender nonconformity is associated with increased tobacco usage among both males and females. The masculine females are significant more likely than other females to engage in each the examined tobacco use risk behaviors, and there is a similar pattern for feminine males. Although research on gender expansive people and smoking is limited, these findings align with surveys indicating a greater rate of smoking among transgender and gender nonconforming individuals (Grant et al. 2011) and also with

research showing that women are more likely to smoke in sexual and gender minority populations (American Lung Association 2010). However, our findings did reflect existing research indicating that masculine males have a greater prevalence of using smokeless tobacco and cigars (Roberts et al. 2014).

TABLE 9: ALCOHOL USE
Risk Behaviors

EVER DRANK ALCOHOL		DRANK ALCOHOL BEFORE AGE 13 YEARS	
MALES	 Masculine males are somewhat more likely than other males to have ever drunk alcohol.	MALES	 Androgynous and feminine males are somewhat more likely than masculine males to have drunk alcohol before age 13.
FEMALES	 Masculine females are substantially less likely than other females to have ever drunk alcohol.	FEMALES	 Androgynous females are somewhat more likely than feminine females to have drunk alcohol before age 13.
USUALLY OBTAINED THE ALCOHOL THEY DRANK BY SOMEONE GIVING IT TO THEM			
MALES	 Masculine males are nearly twice as likely as androgynous males to obtain alcohol from someone else.		
FEMALES	 There is no significant relationship among females between gender expression and obtaining alcohol from someone else.		











Alcohol Use Risk Behaviors

The alcohol related behaviors shown in to Table 9 have varying relationships to gender expression among males and females. Gender expansive males and females are more likely to say they drank alcohol before age 13 than other males and females. However, feminine males and masculine females also appear to be less likely to have had alcohol than other males or females. While there is no significant relationship among females between gender expression and obtaining alcohol from someone else, masculine males are more likely than other males to have received alcohol from someone else. These mixed results are somewhat unexpected given the existing research on gender expression and alcohol use (Iorgler et al. 2015; Rosario et al. 2008).

TABLE 10: OTHER DRUG USE
Risk Behaviors

TRIED MARIJUANA BEFORE AGE 13 YEARS		CURRENTLY USED MARIJUANA	
MALES	 Feminine males are one and a half times more likely than masculine males to have tried marijuana before age 13.	MALES	 There is no significant relationship among males between gender expression and current use of marijuana.
FEMALES	 Androgynous females are somewhat more likely than feminine females to have tried marijuana before age 13.	FEMALES	 Androgynous females are somewhat more likely than feminine females to currently use marijuana.
EVER USED COCAINE		EVER USED INHALANTS	
MALES	 Feminine males are nearly three times more likely than masculine males to have ever used cocaine.	MALES	 Feminine males are twice as likely as masculine males to have ever used inhalants.
FEMALES	 There is no significant relationship among females between gender expression and having ever used cocaine.	FEMALES	 Androgynous and masculine females are almost twice as likely as feminine females to have ever used inhalants.
EVER USED HEROIN		EVER USED METHAMPHETAMINES	
MALES	 Feminine males are nearly six times more likely than masculine males to have ever used heroin.	MALES	 Feminine males are nearly four times more likely than masculine males to have ever used methamphetamines.
FEMALES	 Masculine females are four times more likely than feminine females to have ever used heroin.	FEMALES	 Masculine females are twice as likely as other females to have ever used methamphetamines.
EVER USED ECSTASY		EVER USED SYNTHETIC CANNABINOIDS	
MALES	 Feminine males are nearly twice as likely as masculine males to have ever used ecstasy.	MALES	 Feminine males are four times more likely than masculine males to have ever used synthetic cannabinoids.
FEMALES	 There is no significant relationship among females between gender expression and having used ecstasy.	FEMALES	 There is no significant relationship among females between gender expression and having used synthetic cannabinoids.

TABLE 10: OTHER DRUG USE (CONTINUED)
Risk Behaviors









EVER TOOK STEROIDS WITHOUT A DOCTOR'S PRESCRIPTION	
MALES	 Feminine males are seven times more likely than masculine males to have ever taken steroids without a prescription.
FEMALES	 There is no significant relationship among females between gender expression and taking nonprescription steroids.
EVER TOOK PRESCRIPTION DRUGS WITHOUT A DOCTOR'S PRESCRIPTION	
MALES	 Feminine males are one and a half times more likely than masculine males to have ever used prescription drugs without a prescription.
FEMALES	 Feminine females are somewhat less likely than other females to have used prescription drugs without a prescription.
EVER INJECTED ANY ILLEGAL DRUG	
MALES	 Feminine males are five times more likely than masculine males to have ever injected an illegal drug.
FEMALES	 There is no significant relationship among females between gender expression and having injected an illegal drug.
EVER USED ILLEGAL DRUGS AT SCHOOL	
MALES	 Feminine males are somewhat more likely than other males to have used illegal drugs at school.
FEMALES	 There is no significant relationship among females between gender expression and having used illegal drugs at school.
EVER USED ANY HARD DRUGS	
MALES	 Feminine males are nearly twice as likely as masculine males to have ever used hard drugs.
FEMALES	 Androgynous females are somewhat more likely than feminine females to have ever used hard drugs.

Other Drug Use Risk Behaviors

Previous literature has found associations between victimization based upon gender expression and drug-related risk behaviors (Iorger et al. 2015; Baum et al. 2013).

As shown in Table 10, while there is a complex pattern of interactions between gender nonconformity and drug use among gender expansive males and females, increasing gender nonconformity is frequently associated with increased drug use risk behaviors. For example, Marijuana use before age 13 is more common among feminine males and masculine females. While current marijuana use is not associated with gender expression among males, it is more prevalent among androgynous females. Other usage of illicit drugs, such as inhalants, heroin, methamphetamines, and prescription drugs, is associated with gender nonconformity among both males and females. While there is no support for an association between ecstasy use, synthetic cannabinoids, steroids, injection drugs, or using illegal drugs at school and gender expression among females, feminine males are more likely to use these substances.

**TABLE 11: SEXUAL
Risk Behaviors**

		EVER HAD SEXUAL INTERCOURSE		HAD SEXUAL INTERCOURSE BEFORE AGE 13 YEARS	
FEMALES	MALES		Feminine males are somewhat more likely than other males to have ever had sexual intercourse.		Feminine males are twice as likely as other males to have had sexual intercourse before age 13.
	MALES		Androgynous females are somewhat more likely than feminine females to have ever had sexual intercourse.		Masculine females are more than four times more likely and androgynous females are two times more likely than feminine females to have had sexual intercourse before age 13.
		HAD SEXUAL INTERCOURSE WITH FOUR OR MORE PERSONS		WERE CURRENTLY SEXUALLY ACTIVE	
FEMALES	MALES		There is no significant relationship. Feminine males are somewhat more likely than other males to have had sexual intercourse with four or more persons.		Feminine males are somewhat more likely than other males to be currently sexually active.
	MALES		Masculine females are two times more likely and androgynous females are one and a half times more likely than feminine females to have had sexual intercourse with four or more persons.		There is no significant relationship among females between gender expression and currently being sexually active.





Sexual Risk Behaviors

With regard to sexual risk behavior in males, we repeatedly see parabolic distributions across gender expression, where the most masculine and feminine males report higher rates of sexual risk behaviors than other males. Such distributions are not always fully evident when simplified to a three category analysis. Among females, gender nonconformity was associated with an increase in sexual risk behaviors, particularly for age of onset of sexual activity and number of sexual partners.

While there is little research directly addressing the relationship between gender expression and sexual risk behavior, the consistent over-

reporting of sexual activity among males and under-reporting among females has led some researchers to speculate that reporting of sexual activity is associated with normative masculinity (Jonason 2008). Therefore, we might expect that masculine youth, whether they are males or females, are more likely to say they have had sexual intercourse and that they have had sexual intercourse before age 13, than are more feminine males and females. This is also the case in this sample, suggesting that this behavior is associated with masculinity rather than gender nonconformity.

TABLE 12: HIV Risk Behaviors

	WERE EVER TESTED FOR HIV	EVER TAUGHT ABOUT HIV IN SCHOOL
MALES	 Feminine males are twice as likely as masculine males to have been tested for HIV.	 Feminine males are substantially less likely than masculine males to have been taught about HIV in school.
FEMALES	 Feminine females are somewhat less likely than other females to have been tested for HIV.	 Masculine females are somewhat less likely than other females to have been taught about HIV in school.

HIV Risk Behaviors

Interestingly, as shown in Table 12, gender nonconformity is associated with an increased likelihood of HIV testing but a decreased likelihood of being taught about HIV in school among males. In females, we see a similar pattern, but it is less pronounced. Sexual health education in the United States frequently fails to teach about sexual health issues relating to sexual minority students (Kosciw et al. 2014), which may have an effect on how gender expansive students receive sex education. While sex education can increase the rate of HIV testing among students (Alford 2008), it is a surprising result that gender nonconformity is associated with both substantially decreased teaching about and substantially increased HIV testing.











TABLE 13: WEIGHT AND WEIGHT MANAGEMENT Risk Behaviors

	OVERWEIGHT OR OBESE	TRIED TO LOSE WEIGHT
MALES	 <p>Feminine males are about half as likely as masculine males to be overweight or obese.</p>	 <p>Feminine males are somewhat more likely than masculine males to have tried to lose weight.</p>
FEMALES	 <p>Androgynous females are substantially more likely than feminine females to be overweight or obese.</p>	 <p>Masculine females are substantially less likely than other females to have tried to lose weight.</p>
	NOT EAT, USE DIET PRODUCTS, OR VOMIT TO LOSE WEIGHT	
MALES	 <p>Feminine males are nearly four times more likely than masculine males to not eat, use diet products, or vomit to lose weight.</p>	
FEMALES	 <p>There is no significant relationship between gender expression and avoiding eating, using diet products, or vomiting to lose weight among females.</p>	

Weight and Weight Management Risk Behaviors

In males, gender nonconformity is associated with both a lesser prevalence of being overweight and a greater likelihood of engaging in risk behaviors relating to weight management such as not eating, using diet products, and vomiting. However, in females there is a very different pattern of association between gender expression and weight and weight management. Androgynous females are more likely to be overweight than masculine or feminine females, and there is no association between risk behaviors relating to weight management and gender expression. Finally, among both females and males, trying to lose weight appears to be associated with femininity. The results in Table 13 largely align with existing research on gender expression and obesity (Austin et al. 2016), except that masculine females were less likely to be overweight than androgynous females.

**TABLE 14: PHYSICAL ACTIVITY
Risk Behaviors**

	WERE PHYSICALLY ACTIVE AT LEAST 60 MINUTES PER DAY ON 5 OR MORE DAYS	WATCHED TELEVISION 3 OR MORE HOURS PER DAY
MALES	 Feminine males are about half as likely as masculine or androgynous males to be physically active.	 Feminine males are somewhat less likely than masculine males to watch television 3 or more hours per day.
FEMALES	 There is no significant relationship among females between gender expression and being physically active.	 Although there is a positive association between gender nonconformity and watching television 3 or more hours per day, the variation was too small to characterize.
	PLAYED VIDEO OR COMPUTER GAMES OR USED A COMPUTER 3 OR MORE HOURS PER DAY	PLAYED ON AT LEAST ONE SPORTS TEAM
MALES	 Androgynous males are substantially more likely than feminine males to play video or computer games 3 or more hours per day.	 Androgynous males are substantially less likely than masculine males to play on at least one sports team.
FEMALES	 Androgynous females are somewhat more likely than feminine females to play video or computer games 3 or more hours per day.	 Masculine females are substantially more likely than feminine females to play on at least one sports team.
	HAD EVER BEEN TOLD BY A DOCTOR OR NURSE THAT THEY HAD ASTHMA	
MALES	 There is no significant relationship among males between gender expression and being diagnosed with asthma.	
FEMALES	 Feminine females are somewhat less likely than other females to be diagnosed with asthma.	

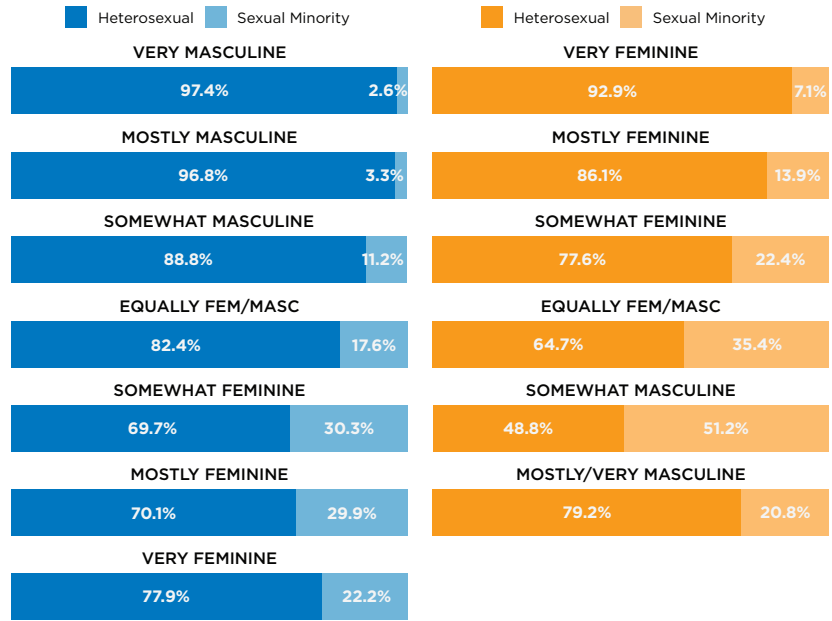
Physical Activity Risk Behaviors

Among the physical activity risk behaviors in Table 14, gender expression in terms of masculinity and femininity appears to interact with sex in complex ways. For both females and males, increasing masculinity is associated with an increasing likelihood of participating in sports and increasing likelihood of watching television 3 or more hours per day. Feminine females are less likely than their peers to have played video games 3 or more hours per day, while androgynous males are more likely to do so than more masculine or feminine males. Among males, greater femininity is associated with physical inactivity, but this pattern is not apparent in females. Our results build on existing research which shows that males exercise more often than females (Brand et al. 2016) and that more masculine males and females are more likely to exercise than more feminine males and females (Roberts et al. 2014).

GENDER EXPRESSION AND SEXUAL ORIENTATION

Sexual orientation is associated with gender nonconformity in this combined dataset, with androgynous females and males, masculine females, and feminine males more likely to be sexual minorities than gender conforming females or males, which aligns with relevant research (Wallien & Cohen-Kettenis 2008). However, our data shows that the majority of gender expansive students are heterosexual. For example, as Figure 6 shows, 79.2% of mostly and very masculine females and 77.9% of very feminine males are heterosexual. Gender expression was associated with the majority of health risk behaviors in each YRBSS category even solely among heterosexual males and females, except for alcohol and drug use risk behaviors.

Figure 6: Sexual Orientation by Gender Expression Among Males and Females

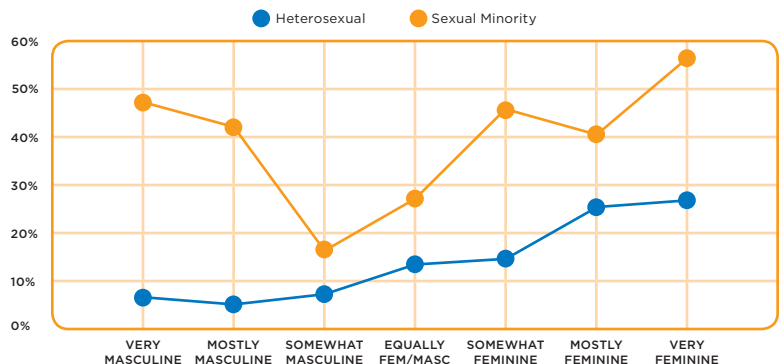


- Among 22 unintentional injury, violence, and school performance risk behaviors examined, 18 had associations with gender expression among only heterosexual males, and 15 had associations with gender expression among only heterosexual females.
- For 4 out of 6 tobacco use risk behaviors examined, there were associations with gender expression for only heterosexual males, and for only heterosexual females, there were associations with gender expression for 5 out of 6 health risk behaviors.
- Among 16 alcohol and drug use risk behaviors examined, 4 had association with gender expression among only heterosexual males, and 2 had associations among only heterosexual females.
- For all 6 out of 6 sexual risk behaviors examined, there were associations with gender expression for only heterosexual males, and for only heterosexual females, there were associations with gender expression for 4 health risk behaviors.
- Among 8 nutrition, physical activity, and weight risk behaviors examined, 6 had associations with gender expression among only heterosexual males, and 5 had associations among only heterosexual females.

expression is associated with health risk behaviors independently of sexual orientation.

Further, by measuring both gender expression and sexual orientation, analysts can understand how gender expression interacts with various health risk behaviors differently among sexual minority students than among heterosexual students. Among physical activity and weight management risk behaviors, for example, gender expression appears to have strong associations that do not necessarily align with interactions between sexual orientation and these health risk behaviors. When examining the likelihood of males to engage in disordered eating, we see that sexual minority males (OR=5.42) are much more likely than heterosexual males to not eat, use diet products, or vomit to lose weight. However, by examining gender expression, it is evident that this pattern is not universal across all sexual minority males (Figure 7).

Figure 7: Did Not Eat, Used Diet Products, or Vomited to Lose Weight among Heterosexual and Sexual Minority Males by Gender Expression

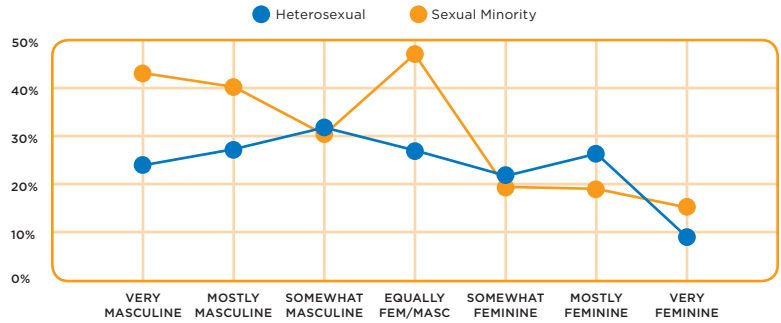


Gender expansive students who are heterosexual also face disparate health risk behaviors, showing that gender

While for heterosexual males, disordered eating is more likely among those with a feminine gender expression, sexual minority males who are masculine or feminine are at greater risk than androgynous sexual minority males. By asking about gender expression, we are more accurately able to identify the students who are at high risk for this outcome (disordered eating), and so better engage such students to achieve better health outcomes.

In some cases, the interaction between sexual orientation, gender expression, and the health risk behavior is more complex. While research shows that sexual minority students experience a heightened rate of obesity (Kann et al. 2011), by examining gender expression, we are able to arrive at a more nuanced understanding. Among heterosexual males, there is an association between obesity and gender expression where masculine males are about three times more likely to be obese than very feminine males. However, among sexual minority males, a different pattern emerges wherein males that are very/mostly masculine or androgynous are more likely to be obese than feminine males (Figure 8). Rather than grouping sexual minority youth together, adding gender expression allow us to better determine which students are at risk and how these health risk behaviors differ among heterosexual and sexual minority students.

Figure 8: Overweight and Obesity among Heterosexual and Sexual Minority Males by Gender Expression



among heterosexual as well as sexual minority students; there is a particularly large gap in the literature related to heterosexual youth and gender expression that needs further research.

LIMITATIONS

YRBSS data are self-report. This is a limitation of all analyses of YRBSS data. However, little is known about how self-report may or may not bias data on gender expression.

There are very small samples of very and mostly masculine females, which means it is more likely that the findings related to this group will not be robust. If more sites begin to measure gender expression, larger combined samples will allow for replication of these findings and mitigation of concerns about small samples.

The four municipalities included in this report are not representative of the United States. For example, there is a much larger proportion of Hispanic/Latino and Asian American/Pacific Islander students in this combined sample than a population-based sample of the United States. Because the gender expression question is not associated with race or ethnicity, this may not affect the findings of this report. However, there are other, unmeasured variables that differ in these four municipalities compared with the rest of the United States. Therefore, the combined data set is not representative of anything but the four municipalities from which the data came. Further, with two of the municipalities in the data set twice, the data set may be biased towards those municipalities. If a larger, more diverse set of YRBSS sites adds the gender expression question, this will improve the generalizability of the findings.

Because the data in this report are cross sectional, we cannot determine a causal direction for the associations found between gender expression and the health risks behaviors measured. Thus, we discuss associations between events but not the causal direction.

CONCLUSIONS AND RECOMMENDATIONS

The four sites that measured gender expression in 2013 and 2015 have allowed for the creation of a large population-based combined dataset that is able to provide information about gender expansive students. This combined dataset has just 4.5% missing data for this survey item, slightly less than for other sensitive health-related survey items such as height and weight (6.00%). It demonstrates that gender nonconformity is more prevalent among males than females and is associated with sexual minority status. This report also shows the importance of gender expression as a predictor of health risk behaviors among adolescent students, independent of other variables such as sex and sexual orientation.

Our analysis also shows that many of these associations are nonlinear, suggesting that while the most gender nonconforming students may be most at risk for some behaviors, in other cases androgynous students (particularly females) are more at risk than the most masculine or feminine students. Finally, this dataset shows that gender expression predicts health risk behaviors

RECOMMENDATIONS FOR EDUCATORS, POLICYMAKERS, ADVOCATES, AND PUBLIC HEALTH PRACTITIONERS

Based on our analysis of the YRBSS gender expression survey item and its association with health risk behaviors outlined in this report, we have identified a number of recommendations regarding inclusion and analysis of this survey item.

1. The gender expression survey item approved as an optional item by the CDC is a suitable measure to examine gender expression and gender nonconformity, and it should be used on YRBSS surveys at the state and municipal level.

Because gender expression predicts a wide variety of health risk behaviors, state and municipal YRBSS surveys should include a question to assess gender expression on all questionnaires. The gender expression survey item approved as an optional item by the CDC is a suitable measure to examine gender expression and gender nonconformity among adolescent students. It has a low non-response rate (4.5%), predicts outcomes consistent with theoretical constructs, performs consistently across sites, identifies an adequate sample to produce reportable data, and has undergone cognitive testing. Educators, policymakers, advocates, and public health practitioners interested in improving health and education outcomes among students can use the data obtained through this survey item to address health risk behaviors associated with gender expression (masculinity and femininity) as well as disparate health risk behaviors faced by gender expansive youth.

2. Analysts can most productively examine gender expression as a continuous variable; however, when small samples preclude this, gender expression can be analyzed in three categories for each sex.

This report shows that gender expression is an important predictor of a wide variety of health risk behaviors among students. In some cases, the relationship between gender expression and the health risk behavior is linear; however, in many cases it is curvilinear. This suggests that sites with sufficient sample size should analyze the gender expression question as a continuous variable for both males and females, rather than dichotomizing it like many health risk behaviors are dichotomized in YRBSS reports. Sites that do not have sufficient sample size to examine the gender expression question in its original, continuous form should instead analyze it in three categories for each sex by including the

three most feminine categories (i.e., “somewhat,” “mostly,” and “very” feminine), the equally feminine and masculine category, and then the three most masculine categories (i.e., “somewhat,” “mostly,” and “very” masculine). This preserves the distinction between the categories and allows analysts to see when there is a disparate outcome for androgynous students as well as the most gender conforming and nonconforming groups (see Appendix II).

3. The gender expression survey item should be used in addition to survey items concerning sexual orientation identity and behavior.

While gender nonconformity is more common among sexual minority students, many heterosexual students are also gender nonconforming. In fact, this report shows that the majority of gender expansive students are heterosexual. Sexual identity questions cannot take the place of gender expression questions; each predicts risks and outcomes differently and the presence of both questions allows a better understanding of health risk behaviors. Moreover, using the gender expression survey item with the sexual orientation survey items allows for a deeper and more nuanced analysis. Research shows that health risk behaviors associated with sexual minority youth are frequently enhanced as gender nonconformity increases. For other health risk behaviors, comparison with gender expression allows for more particularized identification of risk among sexual minority students, which may differ from heterosexual students.

4. Gender expression data should be used to support program development to improve education and health outcomes among students facing disparate health risk behaviors, including gender expansive students.

The gender expression question will help educators, policymakers, advocates, and public health practitioners to develop a greater understanding of gender expression and gender nonconformity and how they relate to health risks among students. Data from sites that have used the question show that gender expansive students are less likely than their peers to succeed academically. Therefore, sites that include the gender expression YRBSS question are better situated to understand the depth and breadth of the problems faced by gender expansive students, to create or modify programs and policies to meet their particular needs, and to improve their academic success. If state and local education and health agencies have no way to identify the health risks facing gender expansive students, they will be unable to address the needs of these vulnerable students.

Health and education programs can use these data in three ways: First, to better understand and work to combat gender stereotypes which undermine health and education. An example of this might be conducting a health promotion campaign to address disordered eating behaviors to lose weight, for which more feminine males and feminine females are at greater risk. Understanding these connections, the campaign might convey that femininity, whether expressed by males or females, does not necessitate excessive thinness. Second, to better target programs and funding in order to address students that are most vulnerable to health risk behaviors by taking into account gender nonconformity. For example, health and education programs should frame gender nonconformity as a positive attribute in order to combat victimization related to gender nonconformity among both males and females. Third, to raise awareness about gender expansive students and the health risk behaviors which have a disproportionate impact on this population.

Here are several examples about how this data can be used to inform programmatic work:

Bullying and Harassment. Feminine male students, like LGBT students and students with disabilities, are at heightened risk for bullying and harassment. Schools should include this population in anti-bullying interventions and specifically include gender expression as a protected characteristic.

Weapons in School. Although many schools target interventions to reduce weapons in school toward males, our results show that masculine females are far more likely to bring weapons to school than other females. By broadening prevention efforts to include this population, schools can better target programs and improve safety.

Substance Use. Gender expansive students are at greater risk for usage of particular substances. For example, masculine females are more likely to smoke at school, use smokeless tobacco, and have used heroin, while feminine males are more likely to have used methamphetamines. This information can help schools to identify health risks and target prevention and treatment programs.

RECOMMENDATIONS FOR FUTURE RESEARCH

This report represents only an initial foray into the scope and depth of population surveillance research this gender expression survey item makes possible. Each of the various categories of health risk behaviors in the YRBSS requires a more in-depth analysis of the different patterns of association between gender expression and gender nonconformity, with a closer look at differences in association for males and females. The field would also benefit from a more detailed analysis of how gender expression interacts with sexual orientation (through both identity and behavior survey items). Because this is one of the first analyses of gender expression data collected through a population-based survey, further research is needed to understand how cultural bias affects youth responses and whether there is a significant impact on results for any health risk behaviors, such as those relating to sexual risk. Finally, the YRBSS gender expression question is not able to identify transgender students, and additional research is needed to identify suitable survey measures to assess health risk behaviors among this population.

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APPENDIX I – COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION



WEAPONS AND FIGHTING AMONG MALES BY GENDER EXPRESSION								
HEALTH RISK BEHAVIOR	VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS
CARRIED A WEAPON	16.34%	14.60%	14.98%	12.49%	18.13%	12.84%	18.40%	NS
CARRIED A GUN	6.54%	3.43%	3.11%	3.35%	4.66%	6.47%	11.60%	GE= 0.415 ** GE2= 1.133 ***
CARRIED A WEAPON ON SCHOOL PROPERTY	3.54%	2.34%	3.77%	3.60%	5.52%	7.03%	7.87%	GE= 1.185 **
DID NOT GO TO SCHOOL BECAUSE THEY FELT UNSAFE AT SCHOOL OR ON THEIR WAY TO OR FROM SCHOOL	5.60%	3.78%	7.84%	8.34%	15.72%	12.75%	19.07%	GE= 1.311 ***
WERE THREATENED OR INJURED WITH A WEAPON ON SCHOOL PROPERTY	6.37%	3.22%	6.37%	9.64%	12.33%	15.86%	14.35%	GE= 1.247 ***
WERE IN A PHYSICAL FIGHT	30.14%	23.95%	20.62%	23.99%	35.71%	19.75%	30.01%	GE= 0.705 ** GE2= 1.047 *
WERE INJURED IN A PHYSICAL FIGHT	4.22%	2.96%	4.31%	3.86%	9.70%	7.46%	13.18%	GE= 0.789 ns GE2= 1.060 *
WERE IN A PHYSICAL FIGHT ON SCHOOL PROPERTY	12.70%	7.10%	8.19%	9.00%	20.18%	14.04%	25.40%	GE= 0.570 ** GE2= 1.096 ***

DATING AND SEXUAL VIOLENCE AMONG MALES BY GENDER EXPRESSION								
HEALTH RISK BEHAVIOR	VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS
WERE EVER PHYSICALLY FORCED TO HAVE SEXUAL INTERCOURSE	5.48%	3.87%	4.74%	8.16%	11.48%	10.94%	21.42%	GE= 0.814 ns GE2= 1.063 *
EXPERIENCED PHYSICAL DATING VIOLENCE	6.39%	4.52%	8.52%	9.46%	14.53%	9.32%	14.10%	GE= 1.195 **
EXPERIENCED SEXUAL DATING VIOLENCE	6.28%	4.31%	5.07%	6.77%	15.03%	3.87%	13.17%	GE= 1.157 *

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION

BULLYING, TEASING, HARASSMENT, AND SCHOOL PERFORMANCE AMONG MALES BY GENDER EXPRESSION									
HEALTH RISK BEHAVIOR		VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS
WERE BULLIED ON SCHOOL PROPERTY		7.68%	10.38%	13.65%	18.36%	25.79%	17.18%	20.92%	GE= 1.751 *** GE2= 0.956 *
WERE ELECTRONICALLY BULLIED		4.87%	5.85%	7.26%	13.20%	16.85%	12.49%	16.61%	GE= 1.282 ***
TEASED FOR BEING GAY		5.54%	7.56%	7.38%	17.68%	25.35%	16.91%	18.08%	GE= 1.867 ** GE2= 0.955 *
HARASSED FOR BEING GAY		5.71%	6.60%	11.26%	18.07%	20.17%	18.18%	14.93%	GE= 2.259 *** GE2= 0.930 **
TEASED OR HARASSED FOR BEING GAY		5.59%	7.27%	8.65%	17.83%	23.52%	17.44%	17.23%	GE= 1.978 *** GE2= 0.947 **
GET MOSTLY AS AND BS		70.19%	71.63%	68.76%	62.14%	66.43%	64.52%	63.77%	GE=0.936**

SADNESS AND SUICIDE AMONG MALES BY GENDER EXPRESSION									
HEALTH RISK BEHAVIOR		VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS
FELT SAD OR HOPELESS		15.28%	17.50%	24.83%	27.01%	26.18%	25.31%	25.19%	GE= 1.566 *** GE2= 0.959 **
SERIOUSLY CONSIDERED ATTEMPTING SUICIDE		6.03%	7.79%	12.59%	14.53%	22.17%	16.83%	13.86%	GE= 2.019 *** GE2= 0.938 **
MADE A PLAN ABOUT HOW THEY WOULD ATTEMPT SUICIDE		6.87%	6.89%	10.88%	14.46%	13.35%	10.93%	17.85%	GE= 1.209 ***
ATTEMPTED SUICIDE		4.58%	3.41%	5.41%	9.60%	14.38%	17.13%	13.22%	GE= 1.312 ***
NONSUICIDE SELF-INJURY		7.56%	9.11%	12.65%	17.81%	15.82%	19.33%	19.32%	GE= 1.218 ***

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION

OTHER UNINTENTIONAL INJURY RISK BEHAVIORS AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS
RARELY OR NEVER WORE A SEAT BELT	7.38%	5.41%	5.52%	10.10%	10.07%	14.51%	20.40%	GE= 0.771 ns GE2= 1.062 **
RODE WITH A DRIVER WHO HAD BEEN DRINKING ALCOHOL	22.09%	19.01%	17.82%	23.91%	28.28%	26.90%	33.96%	GE= 0.816 ns GE2= 1.041 **

TOBACCO USE AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS
EVER TRIED CIGARETTE SMOKING	32.61%	32.68%	30.68%	41.99%	46.89%	45.88%	43.37%	GE= 1.106 ***
SMOKED A WHOLE CIGARETTE BEFORE AGE 13 YEARS	7.35%	5.90%	6.79%	9.30%	15.87%	14.75%	18.38%	GE= 1.223 ***
CURRENTLY SMOKED CIGARETTES	8.14%	7.18%	7.42%	6.21%	14.74%	13.10%	8.27%	NS
SMOKED AT SCHOOL	2.21%	1.16%	1.76%	2.87%	7.11%	7.96%	6.14%	GE= 1.306 ***
CURRENTLY USE SMOKELESS TOBACCO	3.66%	1.75%	3.11%	4.08%	14.51%	13.29%	14.42%	GE= 1.404 ***
CURRENTLY SMOKED CIGARS	9.37%	7.89%	7.05%	8.48%	16.81%	13.38%	14.25%	GE= 1.102 **

ALCOHOL USE AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS
EVER DRANK ALCOHOL	61.81%	61.50%	56.59%	56.57%	64.99%	58.28%	49.82%	GE= 0.939 *
DRANK ALCOHOL BEFORE AGE 13 YEARS	19.94%	16.66%	16.38%	23.64%	29.09%	26.52%	20.49%	GE= 1.057 *
USUALLY OBTAINED THE ALCOHOL THEY DRANK BY SOMEONE GIVING IT TO THEM	31.35%	36.14%	31.30%	18.64%	21.76%	18.79%	23.09%	GE= 0.875 *





*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION




OTHER DRUG USE AMONG MALES BY GENDER EXPRESSION								
HEALTH RISK BEHAVIOR	VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS
TRIED MARIJUANA BEFORE AGE 13 YEARS	12.79%	7.86%	8.41%	12.05%	18.73%	17.40%	14.37%	GE= 0.761 ns GE2= 1.046 *
CURRENTLY USED MARIJUANA	25.74%	24.78%	19.68%	23.47%	31.21%	20.65%	23.01%	NS
EVER USED COCAINE	7.16%	4.73%	7.18%	8.82%	18.71%	18.62%	13.76%	GE= 1.216 ***
EVER USED INHALANTS	6.79%	5.83%	7.81%	11.20%	18.25%	18.69%	11.37%	GE= 1.189 ***
EVER USED HEROIN	3.53%	0.95%	2.52%	4.74%	17.73%	16.73%	9.97%	GE= 1.401 ***
EVER USED METHAMPHETAMINES	4.21%	2.74%	4.27%	6.62%	14.17%	16.46%	11.44%	GE= 1.307 ***
EVER USED ECSTASY	8.68%	7.56%	8.02%	11.02%	14.84%	21.07%	12.99%	GE= 1.135 ***
EVER USED SYNTHETIC CANNABINOIDS	5.00%	7.30%	7.08%	6.55%	23.02%	20.51%	33.45%	GE= 1.442 ***
EVER TOOK STEROIDS WITHOUT A DOCTOR'S PRESCRIPTION	2.68%	1.28%	1.75%	6.18%	13.07%	13.99%	13.61%	GE= 1.495 ***
EVER TOOK PRESCRIPTION DRUGS WITHOUT A DOCTOR'S PRESCRIPTION	13.70%	11.72%	11.66%	13.23%	21.00%	24.71%	16.67%	GE= 1.081 **
EVER INJECTED ANY ILLEGAL DRUG	2.08%	0.83%	3.30%	3.70%	10.74%	13.19%	6.88%	GE= 1.401 ***
EVER USED ILLEGAL DRUGS AT SCHOOL	30.31%	33.14%	34.74%	28.87%	38.17%	34.52%	40.96%	GE= 1.058 *
EVER USED ANY HARD DRUGS	17.32%	14.47%	16.62%	18.48%	32.60%	37.94%	24.61%	GE= 1.141 ***

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION

SEXUAL BEHAVIOR AMONG MALES BY GENDER EXPRESSION										
HEALTH RISK BEHAVIOR	VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS		
EVER HAD SEXUAL INTERCOURSE	50.90%	39.24%	36.31%	40.85%	50.40%	49.83%	47.65%	GE= 0.621 *** GE2= 1.066 ***		
HAD SEXUAL INTERCOURSE BEFORE AGE 13 YEARS	11.18%	5.41%	5.21%	6.03%	15.86%	12.88%	15.41%	GE= 0.466 *** GE2= 1.117 ***		
HAD SEXUAL INTERCOURSE WITH FOUR OR MORE PERSONS	20.67%	10.45%	9.52%	14.46%	13.17%	17.74%	24.74%	GE= 0.442 *** GE2= 1.119 ***		
WERE CURRENTLY SEXUALLY ACTIVE	32.59%	24.43%	19.24%	26.51%	32.46%	32.30%	35.72%	GE= 0.601 *** GE2= 1.074 ***		

HIV TESTING AND INFORMATION AMONG MALES BY GENDER EXPRESSION										
HEALTH RISK BEHAVIOR	VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS		
WERE EVER TESTED FOR HIV	20.61%	14.32%	9.18%	20.04%	18.40%	37.99%	31.90%	GE= 0.584 *** GE2= 1.090 ***		
EVER TAUGHT ABOUT HIV IN SCHOOL	83.27%	85.44%	83.33%	80.71%	70.73%	65.79%	53.14%	GE= 1.266 * GE2= 0.940 ***		

WEIGHT AND WEIGHT MANAGEMENT AMONG MALES BY GENDER EXPRESSION										
HEALTH RISK BEHAVIOR	VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS		
OVERWEIGHT OR OBESE	25.18%	28.83%	31.44%	31.19%	20.81%	21.73%	11.24%	GE= 1.588 *** GE2= 0.926 ***		
TRIED TO LOSE WEIGHT	32.44%	36.08%	38.60%	36.38%	38.52%	42.55%	47.21%	GE= 1.091 ***		
NOT EAT, USE DIET PRODUCTS OR VOMIT TO LOSE WEIGHT	8.17%	7.15%	9.63%	15.53%	25.37%	31.70%	34.03%	GE= 1.406 ***		





*** p<.001 ** p<.05 * p<.01 +p<.1




APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION

PHYSICAL ACTIVITY AMONG MALES BY GENDER EXPRESSION									
HEALTH RISK BEHAVIOR		VERY MASCULINE	MOSTLY MASCULINE	SOMEWHAT MASCULINE	EQUALLY FEM/MASC	SOMEWHAT FEMININE	MOSTLY FEMININE	VERY FEMININE	LOGISTIC REGRESSION RESULTS
WERE PHYSICALLY ACTIVE AT LEAST 60 MINUTES PER DAY ON 5 OR MORE DAYS		60.24%	53.50%	42.05%	42.94%	24.92%	24.74%	26.64%	GE= 0.763 ***
WATCHED TELEVISION 3 OR MORE HOURS PER DAY		34.29%	31.34%	33.56%	31.56%	23.17%	21.36%	27.36%	GE= 0.935 **
PLAYED VIDEO OR COMPUTER GAMES OR USED A COMPUTER 3 OR MORE HOURS PER DAY		34.94%	42.18%	47.56%	46.51%	36.86%	29.17%	24.13%	GE= 1.761 *** GE2= 0.920 ***
PLAYED ON AT LEAST ONE SPORTS TEAM		64.34%	55.92%	48.49%	46.47%	57.17%	49.82%	48.21%	GE= 0.639 *** GE2= 1.046 ***
HAD EVER BEEN TOLD BY A DOCTOR OR NURSE THAT THEY HAD ASTHMA		20.19%	22.01%	22.48%	22.27%	22.37%	23.50%	27.49%	NS

*** p<.001 ** p<.05 * p<.01 +p<.1







APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION






WEAPONS AND FIGHTING AMONG FEMALES BY GENDER EXPRESSION								
HEALTH RISK BEHAVIOR		VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
CARRIED A WEAPON		3.73%	5.79%	5.24%	12.22%	12.69%	17.75%	GE= 1.424 ***
CARRIED A GUN		0.69%	1.00%	1.33%	2.33%	7.63%		GE= 1.731 ***
CARRIED A WEAPON ON SCHOOL PROPERTY		0.99%	1.26%	1.66%	2.86%	8.17%	10.05%	GE= 1.637 ***
DID NOT GO TO SCHOOL BECAUSE THEY FELT UNSAFE AT SCHOOL OR ON THEIR WAY TO OR FROM SCHOOL		8.25%	7.06%	7.18%	9.52%	11.13%	14.75%	GE= 0.729 ns GE2= 1.070 *
WERE THREATENED OR INJURED WITH A WEAPON ON SCHOOL PROPERTY		4.50%	4.23%	4.42%	6.68%	7.96%	18.80%	GE= 0.691 ns GE2= 1.101 *
WERE IN A PHYSICAL FIGHT		13.68%	15.11%	17.46%	19.51%	21.53%	42.58%	GE= 1.213 ***
WERE INJURED IN A PHYSICAL FIGHT		2.66%	2.10%	2.85%	4.71%	8.58%		GE= 0.691 ns GE2= 1.111 *
WERE IN A PHYSICAL FIGHT ON SCHOOL PROPERTY		6.84%	4.76%	6.34%	8.02%	5.88%	22.66%	GE= 0.566 * GE2= 1.126 **

DATING AND SEXUAL VIOLENCE AMONG FEMALES BY GENDER EXPRESSION								
HEALTH RISK BEHAVIOR		VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
WERE EVER PHYSICALLY FORCED TO HAVE SEXUAL INTERCOURSE		10.01%	7.12%	8.55%	13.43%	11.18%	14.30%	GE= 0.734 ns GE2= 1.071 *
EXPERIENCED PHYSICAL DATING VIOLENCE		9.09%	9.96%	8.88%	11.26%	10.19%	16.96%	NS
EXPERIENCED SEXUAL DATING VIOLENCE		11.91%	14.13%	19.01%	16.23%	19.38%	9.82%	GE= 1.117 *

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION

BULLYING, TEASING, HARASSMENT, AND SCHOOL PERFORMANCE AMONG FEMALES BY GENDER EXPRESSION								
HEALTH RISK BEHAVIOR		VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
WERE BULLIED ON SCHOOL PROPERTY		14.30%	15.66%	18.47%	21.58%	21.66%	21.89%	GE= 1.155 **
WERE ELECTRONICALLY BULLIED		11.72%	11.47%	12.11%	19.88%	11.71%	11.38%	GE= 1.116 *
TEASED FOR BEING GAY		7.99%	8.77%	10.33%	16.21%		21.16%	GE= 1.286 **
HARASSED FOR BEING GAY		8.42%	7.31%	10.80%	14.39%	13.78%	14.88%	GE= 1.210 *
TEASED OR HARASSED FOR BEING GAY		8.11%	8.30%	10.51%	15.55%	20.01%	16.14%	GE= 1.258 ***
GET MOSTLY AS AND BS		80.54%	76.60%	69.63%	67.19%	71.37%	53.94%	GE= 0.795 ***

SADNESS AND SUICIDE AMONG FEMALES BY GENDER EXPRESSION								
HEALTH RISK BEHAVIOR		VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
FELT SAD OR HOPELESS		32.71%	37.97%	45.28%	48.06%	41.07%	25.78%	GE= 1.858 *** GE2= 0.917 ***
SERIOUSLY CONSIDERED ATTEMPTING SUICIDE		13.45%	17.34%	25.79%	28.68%	30.56%	17.39%	GE= 2.060 *** GE2= 0.923 *
MADE A PLAN ABOUT HOW THEY WOULD ATTEMPT SUICIDE		11.83%	14.30%	19.96%	22.97%	34.73%	15.14%	GE= 1.279 ***
ATTEMPTED SUICIDE		9.23%	8.91%	13.90%	16.07%	17.16%	14.29%	GE= 1.221 ***
NONSUICIDE SELF-INJURY		16.81%	22.13%	30.41%	32.37%	37.64%	18.44%	GE= 2.050 *** GE2= 0.919 *

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION

OTHER UNINTENTIONAL INJURY RISK BEHAVIORS AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
RARELY OR NEVER WORE A SEAT BELT	6.36%	4.79%	4.84%	4.89%	14.24%	15.50%	GE= 0.496 ** GE2= 1.143 ***
RODE WITH A DRIVER WHO HAD BEEN DRINKING ALCOHOL	23.26%	22.42%	24.31%	24.78%	25.86%	22.05%	NS

TOBACCO USE AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
EVER TRIED CIGARETTE SMOKING	27.72%	29.09%	33.00%	34.70%	36.74%	44.54%	GE= 1.130 ***
SMOKED A WHOLE CIGARETTE BEFORE AGE 13 YEARS	3.88%	4.06%	5.53%	4.23%	7.06%	21.08%	GE= 0.721 ns GE2= 1.095 *
CURRENTLY SMOKED CIGARETTES	4.72%	5.45%	6.64%	9.69%	12.20%	16.53%	GE= 1.306 ***
SMOKED AT SCHOOL	1.30%	1.00%	1.90%	2.64%	5.86%		GE= 1.451 **
CURRENTLY USE SMOKELESS TOBACCO	1.23%	1.34%	0.92%	2.04%	7.02%		GE= 0.484 ns GE2= 1.185 **
CURRENTLY SMOKED CIGARS	3.69%	4.41%	4.48%	5.76%	8.17%		GE= 1.187 *

ALCOHOL USE AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
EVER DRANK ALCOHOL	62.03%	68.37%	69.73%	68.13%	56.74%	52.68%	GE= 1.722 *** GE2= 0.912 ***
DRANK ALCOHOL BEFORE AGE 13 YEARS	13.49%	16.79%	19.15%	20.69%	14.39%	23.00%	GE= 1.144 ***
USUALLY OBTAINED THE ALCOHOL THEY DRANK BY SOMEONE GIVING IT TO THEM	40.11%	40.90%	42.64%	40.03%	27.97%		NS

*** p<.001 ** p<.05 * p<.01 +p<.1





APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION

OTHER DRUG USE AMONG FEMALES BY GENDER EXPRESSION								
HEALTH RISK BEHAVIOR		VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
TRIED MARIJUANA BEFORE AGE 13 YEARS		6.64%	7.04%	7.75%	9.75%	7.54%	12.55%	GE= 1.124 *
CURRENTLY USED MARIJUANA		19.39%	21.15%	22.70%	25.46%	17.91%	30.14%	GE= 1.095 *
EVER USED COCAINE		4.32%	3.83%	4.32%	6.05%	8.30%	8.67%	NS
EVER USED INHALANTS		7.81%	7.70%	10.31%	14.12%	17.66%	11.63%	GE= 1.220 ***
EVER USED HEROIN		1.42%	1.46%	0.74%	2.67%	5.26%	5.26%	GE= 1.295 *
EVER USED METHAMPHETAMINES		3.13%	2.17%	2.67%	3.03%	5.71%	5.71%	GE= 0.583 ns GE2= 1.112 *
EVER USED ECSTASY		6.85%	8.41%	5.60%	10.37%	10.80%	8.76%	NS
EVER USED SYNTHETIC CANNABINOIDS		5.27%	4.92%	6.78%	7.92%	2.45%	2.45%	NS
EVER TOOK STEROIDS WITHOUT A DOCTOR'S PRESCRIPTION		2.22%	1.72%	1.93%	3.13%	3.62%	3.62%	NS
EVER TOOK PRESCRIPTION DRUGS WITHOUT A DOCTOR'S PRESCRIPTION		8.48%	10.09%	10.17%	11.31%	17.00%	10.64%	GE= 1.114 *
EVER INJECTED ANY ILLEGAL DRUG		1.69%	0.83%	1.52%	3.06%	1.40%	1.40%	NS
EVER USED ILLEGAL DRUGS AT SCHOOL		27.26%	27.68%	28.35%	32.56%	26.39%	24.73%	NS
EVER USED ANY HARD DRUGS		14.71%	15.45%	16.21%	21.65%	24.23%	13.39	GE= 1.115 **



*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION




SEXUAL BEHAVIOR AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
EVER HAD SEXUAL INTERCOURSE	32.79% 	33.11%	34.16%	39.94%	36.84%	37.21%	GE= 1.072 *
HAD SEXUAL INTERCOURSE BEFORE AGE 13 YEARS	1.64% 	1.75%	2.53%	4.15%	8.73%	8.73%	GE= 1.512 ***
HAD SEXUAL INTERCOURSE WITH FOUR OR MORE PERSONS	4.24% 	5.59%	6.82%	8.73%	6.21%	16.68%	GE= 1.272 ***
WERE CURRENTLY SEXUALLY ACTIVE	24.08% 	22.97%	21.36%	26.89%	27.00%	27.24%	NS

HIV TESTING AND INFORMATION AMONG FEMALES BY GENDER EXPRESSION


HEALTH RISK BEHAVIOR	VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
WERE EVER TESTED FOR HIV	18.71% 	13.88%	15.21%	19.91%	24.94%	18.18%	GE= 0.693 * GE2= 1.072 **
EVER TAUGHT ABOUT HIV IN SCHOOL	81.54% 	86.07%	81.92%	82.89%	78.61%	70.26%	GE= 1.502 *** GE2= 0.924 ***

WEIGHT AND WEIGHT MANAGEMENT AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
OVERWEIGHT OR OBESE	29.99% 	35.95%	45.39%	45.31%	48.07%	27.69%	GE= 1.905 *** GE2= 0.920 **
TRIED TO LOSE WEIGHT	58.90% 	61.82%	62.56%	61.10%	60.91%	35.76%	GE= 1.463 ** GE2= 0.931 **
NOT EAT, USE DIET PRODUCTS OR VOMIT TO LOSE WEIGHT	20.67% 	17.51%	21.81%	27.00%	15.90%	25.20%	NS

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX I - COMBINED GENDER EXPRESSION DATA ANALYSIS ACROSS DISTRIBUTION

PHYSICAL ACTIVITY AMONG FEMALES BY GENDER EXPRESSION								
HEALTH RISK BEHAVIOR		VERY FEMININE	MOSTLY FEMININE	SOMEWHAT FEMININE	EQUALLY FEM/MASC	SOMEWHAT MASCULINE	MOSTLY/VERY MASCULINE	LOGISTIC REGRESSION RESULTS
WERE PHYSICALLY ACTIVE AT LEAST 60 MINUTES PER DAY ON 5 OR MORE DAYS		33.36%	33.50%	30.57%	38.43%	26.29%	44.30%	NS
WATCHED TELEVISION 3 OR MORE HOURS PER DAY		33.55%	28.78%	30.42%	32.29%	35.23%	42.71%	GE= 0.715 ** GE2= 1.064 **
PLAYED VIDEO OR COMPUTER GAMES OR USED A COMPUTER 3 OR MORE HOURS PER DAY		32.99%	41.83%	47.68%	48.08%	47.44%	43.96%	GE= 1.792 *** GE2= 0.930 ***
PLAYED ON AT LEAST ONE SPORTS TEAM		42.90%	43.79%	39.91%	46.00%	57.45%	53.66%	GE= 0.849 ns GE2= 1.040 *
HAD EVER BEEN TOLD BY A DOCTOR OR NURSE THAT THEY HAD ASTHMA		18.74%	17.53%	21.40%	23.35%	23.07%	19.00%	GE= 1.078 *

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

WEAPONS AND FIGHTING AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
CARRIED A WEAPON	15.33%	15.37%	(13.84%-17.02%)	12.49%	(9.41%-16.40%)	17.21%	(13.89%-21.13%)
CARRIED A GUN	5.03%	4.60**	(3.61%-5.85%)	3.35%	(1.85%-5.99%)	8.57***	(6.06%-11.99%)
CARRIED A WEAPON ON SCHOOL PROPERTY	3.69%	3.08**	(2.56%-3.72%)	3.60%	(2.11%-6.07%)	7.02***	(4.91%-9.93%)
DID NOT GO TO SCHOOL BECAUSE THEY FELT UNSAFE	7.18%	5.26***	(4.35%-6.35%)	8.34%	(5.59%-12.25%)	16.81***	(13.69%-20.49%)
WERE THREATENED OR INJURED WITH A WEAPON ON SCHOOL PROPERTY	6.81%	5.06***	(4.31%-5.93%)	9.64*	(6.88%-13.37%)	14.10***	(10.27%-19.04%)
WERE IN A PHYSICAL FIGHT	26.17%	25.84%	(23.43%-28.41%)	23.99%	(18.74%-30.16%)	29.79%	(23.22%-37.32%)
WERE INJURED IN A PHYSICAL FIGHT	4.75%	3.71**	(2.73%-5.04%)	3.86%	(2.14%-6.85%)	10.97***	(7.93%-15.00%)
WERE IN A PHYSICAL FIGHT ON SCHOOL PROPERTY	11.14%	9.52***	(8.08%-11.20%)	9.00%	(6.45%-12.43%)	21.46***	(17.14%-26.53%)

DATING AND SEXUAL VIOLENCE AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
WERE EVER PHYSICALLY FORCED TO HAVE SEXUAL INTERCOURSE	6.65%	4.68***	(3.74%-5.84%)	8.16%	(5.40%-12.15%)	16.35***	(11.52%-22.69%)
EXPERIENCED PHYSICAL DATING VIOLENCE	7.33%	5.99***	(4.82%-7.43%)	9.46%	(5.74%-15.18%)	13.17***	(9.33%-18.27%)
EXPERIENCED SEXUAL DATING VIOLENCE	6.30%	5.29**	(4.13%-6.74%)	6.77%	(3.64%-12.23%)	11.60***	(8.44%-15.73%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

BULLYING, TEASING, HARASSMENT, AND SCHOOL PERFORMANCE AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
WERE BULLIED ON SCHOOL PROPERTY	12.37%	9.92%***	(8.34%-11.75%)	18.36%**	(13.70%-24.17%)	21.50%***	(16.60%-27.38%)
WERE ELECTRONICALLY BULLIED	7.88%	5.73%***	(4.80%-6.82%)	13.20%***	(9.62%-17.85%)	15.82%***	(12.02%-20.55%)
TEASED FOR BEING GAY	9.44%	6.70%***	(5.34%-8.37%)	17.68%***	(11.84%-25.58%)	19.85%***	(14.71%-26.25%)
HARASSED FOR BEING GAY	10.07%	7.24%***	(5.97%-8.77%)	18.07%***	(12.43%-25.52%)	17.44%***	(13.63%-22.04%)
TEASED OR HARASSED FOR BEING GAY	9.64%	6.86%***	(5.75%-8.16%)	17.83%***	(13.53%-23.13%)	19.06%***	(15.52%-23.20%)
GET MOSTLY AS AND BS	69.08%	70.60%*	(66.71%-74.21%)	62.14%	(52.76%-70.68%)	64.96%	(56.06%-72.93%)

SADNESS AND SUICIDE AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
FELT SAD OR HOPELESS	19.94%	17.99%***	(16.50%-19.58%)	27.01%**	(22.21%-32.42%)	25.50%***	(21.13%-30.42%)
SERIOUSLY CONSIDERED ATTEMPTING SUICIDE	9.89%	8.00%***	(6.78%-9.41%)	14.53%***	(11.25%-18.57%)	16.92%***	(13.36%-21.18%)
MADE A PLAN ABOUT HOW THEY WOULD ATTEMPT SUICIDE	9.36%	7.64%***	(6.43%-9.05%)	14.46%*	(9.56%-21.29%)	15.10%***	(11.62%-19.38%)
ATTEMPTED SUICIDE	6.02%	4.24%***	(3.41%-5.25%)	9.60%*	(6.04%-14.91%)	14.40%***	(11.41%-18.00%)
NONSUICIDE SELF-INJURY	11.54%	9.26%***	(7.64%-11.19%)	17.81%**	(13.34%-23.38%)	18.33%***	(14.74%-22.58%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

OTHER UNINTENTIONAL INJURY RISK BEHAVIORS AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
RARELY OR NEVER WORE A SEAT BELT	8.00%	6.21%***	(5.17%-7.44%)	10.10%	(7.29%-13.82%)	16.15%***	(13.61%-19.06%)
RODE WITH A DRIVER WHO HAD BEEN DRINKING ALCOHOL	21.93%	20.01%***	(18.02%-22.16%)	23.91%	(18.91%-29.74%)	30.81%***	(25.87%-36.23%)

TOBACCO USE AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
EVER TRIED CIGARETTE SMOKING	34.91%	32.27%***	(29.91%-34.73%)	41.99%***	(37.21%-46.93%)	44.90%***	(39.56%-50.35%)
SMOKED A WHOLE CIGARETTE BEFORE AGE 13 YEARS	8.22%	6.63%***	(5.28%-8.31%)	9.30%	(6.33%-13.47%)	16.88%***	(13.24%-21.29%)
CURRENTLY SMOKED CIGARETTES	7.91%	7.60%	(6.29%-9.16%)	6.21%	(3.76%-10.10%)	11.11%*	(8.28%-14.76%)
SMOKED AT SCHOOL	2.49%	1.69%***	(1.24%-2.30%)	2.87%	(1.34%-6.03%)	6.80%***	(4.49%-10.17%)
CURRENTLY USE SMOKELESS TOBACCO	4.54%	2.77%***	(2.12%-3.62%)	4.08%	(2.10%-7.79%)	14.21%***	(10.95%-18.24%)
CURRENTLY SMOKED CIGARS	9.27%	8.32%*	(7.00%-9.86%)	8.48%	(5.56%-12.75%)	14.80%***	(11.58%-18.73%)

ALCOHOL USE AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
EVER DRANK ALCOHOL	59.67%	60.69%+	(58.20%-63.12%)	56.57%	(51.48%-61.53%)	56.04%	(49.96%-61.94%)
DRANK ALCOHOL BEFORE AGE 13 YEARS	19.39%	17.91%***	(16.25%-19.70%)	23.64%*	(19.45%-28.41%)	24.27%*	(20.68%-28.26%)
USUALLY OBTAINED THE ALCOHOL THEY DRANK BY SOMEONE GIVING IT TO THEM	30.37%	33.37%**	(27.86%-39.37%)	18.64%**	(11.78%-28.22%)	21.35%+	(13.71%-31.69%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

OTHER DRUG USE AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
TRIED MARIJUANA BEFORE AGE 13 YEARS	10.97%	9.93%**	(8.53%-11.53%)	12.05%	(8.55%-16.73%)	16.24%***	(12.92%-20.22%)
CURRENTLY USED MARIJUANA	24.22%	24.20%	(21.81%-26.76%)	23.47%	(17.66%-30.48%)	24.90%	(20.30%-30.15%)
EVER USED COCAINE	7.85%	6.16%***	(5.08%-7.45%)	8.82%	(5.76%-13.28%)	16.20%***	(13.08%-19.89%)
EVER USED INHALANTS	8.21%	6.59%***	(5.58%-7.76%)	11.20%	(7.04%-17.36%)	14.88%***	(11.84%-18.54%)
EVER USED HEROIN	4.20%	2.28%***	(1.71%-3.03%)	4.74%	(2.62%-8.44%)	13.51%***	(10.15%-17.75%)
EVER USED METHAMPHETAMINES	5.27%	3.61%***	(2.60%-4.99%)	6.62%	(4.16%-10.39%)	13.26%***	(10.25%-17.00%)
EVER USED ECSTASY	9.38%	8.09%***	(6.75%-9.68%)	11.02%	(7.43%-16.03%)	15.18%***	(12.00%-19.01%)
EVER USED SYNTHETIC CANNABINOIDS	9.09%	6.36%***	(4.70%-8.55%)	6.55%	(3.43%-12.13%)	26.70%***	(19.55%-35.30%)
EVER TOOK STEROIDS WITHOUT A DOCTOR'S PRESCRIPTION	4.00%	1.93%***	(1.41%-2.62%)	6.18%+	(3.48%-10.73%)	13.53%***	(10.01%-18.06%)
EVER TOOK PRESCRIPTION DRUGS WITHOUT A DOCTOR'S PRESCRIPTION	13.59%	12.50%**	(10.91%-14.28%)	13.23%	(9.71%-17.76%)	19.61%***	(15.92%-23.92%)
EVER INJECTED ANY ILLEGAL DRUG	3.03%	1.79%***	(1.25%-2.57%)	3.70%	(2.08%-6.48%)	9.30%***	(6.54%-13.07%)
EVER USED ILLEGAL DRUGS AT SCHOOL	32.83%	32.31%	(30.25%-34.43%)	28.87%	(24.10%-34.16%)	38.80%*	(33.35%-44.55%)
EVER USED ANY HARD DRUGS	18.21%	16.01%***	(14.31%-17.86%)	18.48%	(13.07%-25.49%)	29.70%***	(24.65%-35.29%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

SEXUAL BEHAVIOR AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
EVER HAD SEXUAL INTERCOURSE	43.56%	43.25%	(39.92%-46.64%)	40.85%	(34.93%-47.05%)	49.06%	(42.22%-55.93%)
HAD SEXUAL INTERCOURSE BEFORE AGE 13 YEARS	8.20%	7.63%	(6.31%-9.20%)	6.03%	(3.37%-10.57%)	14.99%**	(9.82%-22.20%)
HAD SEXUAL INTERCOURSE WITH FOUR OR MORE PERSONS	14.79%	14.26%	(12.30%-16.49%)	14.46%	(10.39%-19.77%)	19.36%+	(13.80%-26.47%)
WERE CURRENTLY SEXUALLY ACTIVE	27.34%	26.64%+	(24.28%-29.14%)	26.51%	(21.26%-32.52%)	33.86%*	(28.51%-39.67%)

HIV TESTING AND INFORMATION AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
WERE EVER TESTED FOR HIV	18.12%	15.71%***	(13.60%-18.08%)	20.04%	(13.94%-27.96%)	29.48%***	(24.18%-35.41%)
EVER TAUGHT ABOUT HIV IN SCHOOL	80.69%	84.18%***	(82.39%-85.81%)	80.71%	(75.49%-85.03%)	60.88%***	(55.48%-66.02%)

WEIGHT AND WEIGHT MANAGEMENT AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
OVERWEIGHT OR OBESE	26.56%	27.87%*	(24.99%-30.95%)	31.19%	(25.17%-37.92%)	16.24%***	(12.44%-20.92%)
TRIED TO LOSE WEIGHT	36.43%	35.10%*	(32.74%-37.55%)	36.38%	(30.89%-42.25%)	43.70%***	(38.24%-49.32%)
NOT EAT, USE DIET PRODUCTS OR VOMIT TO LOSE WEIGHT	12.15%	8.04%***	(6.66%-9.67%)	15.53%	(10.94%-21.57%)	31.21%***	(26.02%-36.91%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

PHYSICAL ACTIVITY AMONG MALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL MALES	MASCULINE MALES	95%CI	ANDROGYNOUS MALES	95%CI	FEMININE MALES	95%CI
WERE PHYSICALLY ACTIVE AT LEAST 60 MINUTES PER DAY ON 5 OR MORE DAYS	48.96%	54.04%***	(51.36%-56.70%)	42.94%*	(37.22%-48.86%)	25.74%***	(21.46%-30.54%)
WATCHED TELEVISION 3 OR MORE HOURS PER DAY	31.66%	32.93%*	(30.36%-35.60%)	31.56%	(25.28%-38.60%)	24.88%***	(21.81%-28.23%)
PLAYED VIDEO OR COMPUTER GAMES OR USED A COMPUTER 3 OR MORE HOURS PER DAY	39.32%	40.32%+	(38.33%-42.33%)	46.51%*	(39.75%-53.41%)	28.86%***	(24.62%-33.50%)
PLAYED ON AT LEAST ONE SPORTS TEAM	55.78%	57.86%***	(55.46%-60.22%)	46.47%**	(41.10%-51.93%)	51.10%+	(45.86%-56.32%)
HAD EVER BEEN TOLD BY A DOCTOR OR NURSE THAT THEY HAD ASTHMA	21.97%	21.37%	(19.46%-23.42%)	22.27%	(17.38%-28.07%)	25.16%	(20.19%-30.87%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

WEAPONS AND FIGHTING AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
CARRIED A WEAPON	6.02%	4.82%***	(4.00%-5.80%)	12.22%***	(9.10%-16.23%)	14.71%***	(10.12%-20.91%)
CARRIED A GUN	1.34%	0.93%***	(0.60%-1.43%)	2.33%	(1.15%-4.67%)	7.63%***	(4.25%-13.31%)
CARRIED A WEAPON ON SCHOOL PROPERTY	1.69%	1.22%***	(0.87%-1.70%)	2.86%*	(1.70%-4.78%)	8.93%***	(5.07%-15.25%)
DID NOT GO TO SCHOOL BECAUSE THEY FELT UNSAFE	7.99%	7.58%*	(6.48%-8.86%)	9.52%	(7.15%-12.56%)	12.61%*	(8.26%-18.78%)
WERE THREATENED OR INJURED WITH A WEAPON ON SCHOOL PROPERTY	4.94%	4.38%***	(3.34%-5.71%)	6.68%+	(4.66%-9.49%)	12.37%***	(7.68%-19.33%)
WERE IN A PHYSICAL FIGHT	15.91%	14.88%***	(13.28%-16.64%)	19.51%	(15.12%-24.82%)	30.57%***	(22.68%-39.79%)
WERE INJURED IN A PHYSICAL FIGHT	2.96%	2.47%***	(1.80%-3.39%)	4.71%*	(3.19%-6.91%)	8.58%***	(5.08%-14.15%)
WERE IN A PHYSICAL FIGHT ON SCHOOL PROPERTY	6.40%	5.92%**	(4.84%-7.22%)	8.02%	(5.99%-10.66%)	12.55%**	(8.08%-18.99%)

DATING AND SEXUAL VIOLENCE AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
WERE EVER PHYSICALLY FORCED TO HAVE SEXUAL INTERCOURSE	9.29%	8.59%***	(7.48%-9.86%)	13.43%***	(11.15%-16.10%)	12.46%	(7.88%-19.15%)
EXPERIENCED PHYSICAL DATING VIOLENCE	9.75%	9.40%	(7.89%-11.17%)	11.26%	(7.77%-16.04%)	13.21%	(8.34%-20.28%)
EXPERIENCED SEXUAL DATING VIOLENCE	14.26%	13.96%	(12.24%-15.88%)	16.23%	(12.04%-21.52%)	15.11%	(9.42%-23.33%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

BULLYING, TEASING, HARASSMENT, AND SCHOOL PERFORMANCE AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
WERE BULLIED ON SCHOOL PROPERTY	16.49%	15.58%**	(14.05%-17.25%)	21.58%**	(17.96%-25.69%)	21.75%	(14.90%-30.63%)
WERE ELECTRONICALLY BULLIED	12.60%	11.68%***	(10.36%-13.15%)	19.88%***	(15.99%-24.44%)	11.58%	(7.30%-17.88%)
TEASED FOR BEING GAY	9.89%	8.68%***	(7.11%-10.55%)	16.21%**	(11.22%-22.85%)	21.16%**	(13.01%-32.50%)
HARASSED FOR BEING GAY	9.48%	8.46%**	(6.57%-10.83%)	14.39%**	(10.96%-18.66%)	14.22%	(8.13%-23.68%)
TEASED OR HARASSED FOR BEING GAY	9.76%	8.61%***	(7.33%-10.08%)	15.55%***	(11.97%-19.97%)	18.43%**	(12.64%-26.10%)
GET MOSTLY AS AND BS	74.75%	76.57%**	(73.44%-79.42%)	67.19%*	(59.36%-74.17%)	62.40%+	(47.95%-74.93%)

SADNESS AND SUICIDE AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
FELT SAD OR HOPELESS	38.21%	37.06%***	(34.62%-39.57%)	48.06%***	(43.88%-52.28%)	34.80%	(26.92%-43.61%)
SERIOUSLY CONSIDERED ATTEMPTING SUICIDE	18.78%	17.19%***	(15.46%-19.07%)	28.68%***	(25.29%-32.33%)	25.28%	(17.83%-34.53%)
MADE A PLAN ABOUT HOW THEY WOULD ATTEMPT SUICIDE	15.69%	14.24%***	(12.75%-15.87%)	22.97%**	(18.66%-27.93%)	26.79%**	(18.00%-37.88%)
ATTEMPTED SUICIDE	10.83%	9.94%***	(8.60%-11.46%)	16.07%**	(12.43%-20.53%)	16.03%+	(10.86%-23.02%)
NONSUICIDE SELF-INJURY	23.04%	21.48%***	(19.37%-23.75%)	32.37%***	(26.66%-38.65%)	30.40%	(21.33%-41.30%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

OTHER UNINTENTIONAL INJURY RISK BEHAVIORS AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
RARELY OR NEVER WORE A SEAT BELT	5.75%	5.46%+	(4.55%-6.55%)	4.89%	(3.23%-7.34%)	14.75%***	(9.47%-22.27%)
RODE WITH A DRIVER WHO HAD BEEN DRINKING ALCOHOL	23.34%	23.11%	(21.03%-25.32%)	24.78%	(20.88%-29.13%)	24.31%	(17.49%-32.73%)

TOBACCO USE AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
EVER TRIED CIGARETTE SMOKING	30.23%	29.22%**	(26.97%-31.58%)	34.70%+	(29.25%-40.59%)	39.99%*	(32.40%-48.10%)
SMOKED A WHOLE CIGARETTE BEFORE AGE 13 YEARS	4.56%	4.25%*	(3.41%-5.27%)	4.23%	(2.71%-6.53%)	13.04%***	(8.57%-19.36%)
CURRENTLY SMOKED CIGARETTES	6.17%	5.36%***	(4.44%-6.45%)	9.69%***	(7.02%-13.25%)	13.98%***	(8.53%-22.08%)
SMOKED AT SCHOOL	1.60%	1.29%**	(0.76%-2.17%)	2.64%*	(1.46%-4.73%)	5.86%**	(2.59%-12.70%)
CURRENTLY USE SMOKELESS TOBACCO	1.53%	1.22%**	(0.81%-1.84%)	2.04%	(1.11%-3.72%)	7.02%***	(3.55%-13.40%)
CURRENTLY SMOKED CIGARS	4.45%	4.12%*	(3.26%-5.19%)	5.76%	(3.59%-9.11%)	8.17%+	(4.50%-14.36%)

ALCOHOL USE AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
EVER DRANK ALCOHOL	65.80%	65.95%	(63.86%-67.98%)	68.13%	(62.54%-73.24%)	55.11%**	(46.18%-63.72%)
DRANK ALCOHOL BEFORE AGE 13 YEARS	16.44%	15.81%*	(14.12%-17.67%)	20.69%*	(16.00%-26.32%)	17.96%	(12.19%-25.66%)
USUALLY OBTAINED THE ALCOHOL THEY DRANK BY SOMEONE GIVING IT TO THEM	40.41%	40.89%	(37.61%-44.25%)	40.03%	(29.74%-51.29%)	27.97%	(14.97%-46.13%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

OTHER DRUG USE AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
TRIED MARIJUANA BEFORE AGE 13 YEARS	7.40%	7.00%*	(5.74%-8.50%)	9.75%+	(7.31%-12.90%)	9.59%	(5.60%-15.95%)
CURRENTLY USED MARIJUANA	21.30%	20.68%*	(18.25%-23.35%)	25.46%*	(21.27%-30.17%)	23.01%	(16.07%-31.80%)
EVER USED COCAINE	4.50%	4.12%*	(3.39%-5.01%)	6.05%	(3.71%-9.70%)	8.45%*	(4.64%-14.89%)
EVER USED INHALANTS	9.13%	8.21%***	(7.23%-9.30%)	14.12%**	(10.45%-18.81%)	15.21%*	(9.19%-24.13%)
EVER USED HEROIN	1.62%	1.31%**	(0.97%-1.77%)	2.67%+	(1.38%-5.12%)	5.26%*	(1.83%-14.18%)
EVER USED METHAMPHETAMINES	2.82%	2.66%	(2.15%-3.29%)	3.03%	(1.64%-5.53%)	5.71%*	(2.77%-11.40%)
EVER USED ECSTASY	7.71%	7.26%+	(6.08%-8.64%)	10.37%	(6.81%-15.48%)	9.98%	(5.70%-16.91%)
EVER USED SYNTHETIC CANNABINOIDS	5.62%	5.42%	(4.05%-7.21%)	7.92%	(4.26%-14.26%)	2.45%	(0.84%-6.94%)
EVER TOOK STEROIDS WITHOUT A DOCTOR'S PRESCRIPTION	2.16%	1.97%	(1.45%-2.68%)	3.13%	(1.79%-5.41%)	3.62%	(1.38%-9.16%)
EVER TOOK PRESCRIPTION DRUGS WITHOUT A DOCTOR'S PRESCRIPTION	9.83%	9.43%+	(8.03%-11.04%)	11.31%	(8.10%-15.58%)	14.40%	(8.64%-23.02%)
EVER INJECTED ANY ILLEGAL DRUG	1.51%	1.31%*	(0.97%-1.79%)	3.06%*	(1.63%-5.66%)	1.40%	(0.42%-4.51%)
EVER USED ILLEGAL DRUGS AT SCHOOL	28.10%	27.62%	(25.30%-30.07%)	32.56%	(27.39%-38.19%)	25.71%	(18.54%-34.49%)
EVER USED ANY HARD DRUGS	16.16%	15.27%***	(13.71%-16.99%)	21.65%**	(17.75%-26.13%)	19.82%	(13.22%-28.62%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

SEXUAL BEHAVIOR AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
EVER HAD SEXUAL INTERCOURSE	34.05%	33.17%**	(30.11%-36.36%)	39.94%**	(33.99%-46.19%)	36.99%	(27.82%-47.20%)
HAD SEXUAL INTERCOURSE BEFORE AGE 13 YEARS	2.35%	1.84%**	(1.34%-2.54%)	4.15%*	(2.48%-6.87%)	8.73%**	(4.04%-17.82%)
HAD SEXUAL INTERCOURSE WITH FOUR OR MORE PERSONS	5.83%	5.25%**	(4.44%-6.21%)	8.73%*	(5.93%-12.67%)	10.38%*	(5.97%-17.45%)
WERE CURRENTLY SEXUALLY ACTIVE	23.71%	23.15%*	(20.97%-25.48%)	26.89%+	(22.24%-32.11%)	27.10%	(20.17%-35.35%)

HIV TESTING AND INFORMATION AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
WERE EVER TESTED FOR HIV	16.79%	16.10%*	(14.31%-18.08%)	19.91%	(15.23%-25.60%)	22.21%	(15.57%-30.65%)
EVER TAUGHT ABOUT HIV IN SCHOOL	83.06%	83.43%	(80.98%-85.62%)	82.89%	(78.05%-86.85%)	75.28%*	(66.23%-82.54%)

WEIGHT AND WEIGHT MANAGEMENT AMONG FEMALES BY GENDER EXPRESSION

HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
OVERWEIGHT OR OBESE	36.43%	35.10%**	(33.24%-37.00%)	45.31%**	(40.48%-50.22%)	39.75%	(31.19%-48.99%)
TRIED TO LOSE WEIGHT	60.38%	60.72%	(59.01%-62.41%)	61.10%	(55.74%-66.21%)	50.59%*	(41.15%-59.99%)
NOT EAT, USE DIET PRODUCTS OR VOMIT TO LOSE WEIGHT	20.39%	19.61%*	(18.10%-21.22%)	27.00%**	(22.40%-32.16%)	19.31%	(12.58%-28.46%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX II - COMBINED GENDER EXPRESSION DATA ANALYSIS IN THREE CATEGORIES

PHYSICAL ACTIVITY AMONG FEMALES BY GENDER EXPRESSION							
HEALTH RISK BEHAVIOR	ALL FEMALES	FEMININE FEMALES	95%CI	ANDROGYNOUS FEMALES	95%CI	MASCULINE FEMALES	95%CI
WERE PHYSICALLY ACTIVE AT LEAST 60 MINUTES PER DAY ON 5 OR MORE DAYS	33.57%	32.92%+	(29.92%-36.07%)	38.43%*	(33.96%-43.10%)	33.60%	(26.59%-41.42%)
WATCHED TELEVISION 3 OR MORE HOURS PER DAY	31.49%	31.08%	(29.16%-33.06%)	32.29%	(28.01%-36.89%)	38.27%	(30.15%-47.10%)
PLAYED VIDEO OR COMPUTER GAMES OR USED A COMPUTER 3 OR MORE HOURS PER DAY	40.41%	39.15%**	(36.96%-41.38%)	48.08%**	(43.09%-53.11%)	46.05%	(38.29%-54.01%)
PLAYED ON AT LEAST ONE SPORTS TEAM	43.60%	42.72%*	(40.10%-45.39%)	46.00%	(40.93%-51.16%)	55.94%**	(47.99%-63.59%)
HAD EVER BEEN TOLD BY A DOCTOR OR NURSE THAT THEY HAD ASTHMA	19.35%	18.72%*	(17.20%-20.35%)	23.35%	(18.87%-28.53%)	21.42%	(14.94%-29.73%)

*** p<.001 ** p<.05 * p<.01 +p<.1

APPENDIX III – HEALTH RISK BEHAVIORS TESTED FOR ASSOCIATION WITH GENDER EXPRESSION (INCLUDED AND EXCLUDED)

YRBSS CATEGORY	INCLUDED HEALTH RISK BEHAVIORS	EXCLUDED HEALTH RISK BEHAVIORS
UNINTENTIONAL INJURIES, VIOLENCE, BULLYING AND HARASSMENT, AND SCHOOL PERFORMANCE	<ul style="list-style-type: none"> • Rarely or never wore a seat belt • Rode with a driver who had been drinking alcohol • Carried a weapon • Carried a gun • Carried a weapon on school property • Did not go to school because they felt unsafe at school or on their way to or from school • Were threatened or injured with a weapon on school property • Were in a physical fight • Were injured in a physical fight • Were in a physical fight on school property • Were ever physically forced to have sexual intercourse • Experienced physical dating violence • Experienced sexual dating violence • Were bullied on school property • Were electronically bullied • Felt sad or hopeless • Seriously considered attempting suicide • Made a plan about how they would attempt suicide • Attempted suicide • Nonsuicide self-injury¹ • Teased or harassed for being gay*¹ • Get mostly As and Bs 	<ul style="list-style-type: none"> • Rarely or never wore a bicycle helmet² • Drove when drinking alcohol² • Texted or e-mailed while driving a car or other vehicle² • Injured in a suicide attempt³
TOBACCO USE	<ul style="list-style-type: none"> • Ever tried cigarette smoking • Smoked a whole cigarette before age 13 years • Currently smoked cigarettes • Smoked at school • Currently use smokeless tobacco • Currently smoked cigars 	<ul style="list-style-type: none"> • Smoked > 10 cigarettes per day³ • Tried to quit smoking³

*Derived variable

¹Not included in core; subset of cities collected data

²Excluded because no significant relationship was found between the health risk behavior and gender expression for either males or females

³Excluded due to small sample size

APPENDIX III - HEALTH RISK BEHAVIORS TESTED FOR ASSOCIATION WITH GENDER EXPRESSION (INCLUDED AND EXCLUDED)

YRBSS CATEGORY	INCLUDED HEALTH RISK BEHAVIORS	EXCLUDED HEALTH RISK BEHAVIORS
ALCOHOL AND OTHER DRUG USE	<ul style="list-style-type: none"> • Ever drank alcohol • Drank alcohol before age 13 years • Usually obtained the alcohol they drank by someone giving it to them • Tried marijuana before age 13 years • Currently used marijuana • Ever used cocaine • Ever used inhalants • Ever used heroin • Ever used methamphetamines • Ever used ecstasy • Ever used synthetic cannabinoids • Ever took steroids without a doctor's prescription • Ever took prescription drugs without a doctor's prescription • Ever injected any illegal drug • Ever illegal drugs at school • Ever used any hard drugs* 	<ul style="list-style-type: none"> • Currently drank alcohol² • Drank five or more drinks of alcohol in a row² • Ever used marijuana² • Drank alcohol or used drugs before last sexual intercourse² • Reported that the largest number of drinks they had in a row was 10 or more³
NUTRITION, PHYSICAL ACTIVITY, AND OBESITY	<ul style="list-style-type: none"> • Overweight or obese • Tried to lose weight • Not eat, use diet products or vomit to lose weight* • Were physically active at least 60 minutes per day on 5 or more days • Watched television 3 or more hours per day • Played video or computer games or used a computer 3 or more hours per day • Played on at least one sports team • Had ever been told by a doctor or nurse that they had asthma 	<ul style="list-style-type: none"> • Attended physical education classes on 1 or more days²
SEXUAL RISK BEHAVIOR	<ul style="list-style-type: none"> • Ever had sexual intercourse • Had sexual intercourse before age 13 years • Had sexual intercourse with four or more persons • Were currently sexually active • Were ever tested for HIV • Ever taught about HIV in school 	<ul style="list-style-type: none"> • Used a condom² • Used birth control pills²

*Derived variable

¹Not included in core; subset of cities collected data

²Excluded because no significant relationship was found between the health risk behavior and gender expression for either males or females

³Excluded due to small sample size