UCLA School of Law Williams Institute

FOOD INSECURITY AMONG LGBTQ YOUTH

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This brief provides new information about food insecurity among LGBTQ youth. Inadequate access to food has been observed more often among LGBT than non-LGBT adults;[1] however, less is known about access to food among youth.

Food insecurity, food insufficiency, and hunger are related experiences that are defined[2] as follows:

> **Food insecurity** indicates inadequate or uncertain access to food due to insufficient income or other resources. Prior research shows that food insecurity negatively impacts learning and health.[3]
>
> **Food insufficiency** refers to food inadequacies that lead to not having enough to eat. While food insecurity includes worrying about food running out (even if it has not yet run out) and having reduced quality or variety of foods (even if the amount of food is sufficient), food insufficiency is a very low level of food

[1] Conron, K.J., Guardado, R., O'Neill, K., & Wilson, B.D.M. (2022). *Food Insufficiency Among LGBT Adults During the COVID-19 Pandemic.* The Williams Institute, UCLA, Los Angeles, CA. https://williamsinstitute.law.ucla.edu/wp-content/uploads/LGBT-Food-Insufficiency-Apr-2022.pdf

[2] A USDA Economic Research Service. (2021). *Food Security in the U.S.: Measurement: What is Food Insufficiency?* https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement/#insufficiency Accessed February 2023.

[3] Coleman-Jensen, A., McFall, W., & Nord, M. (2013). Food Insecurity in households with children: Prevalence, severity, and household characteristics. U.S. Department of Agriculture, Economic Research Service, EIB-113. Retrieved from https://www.ers.usda.gov/webdocs/publications/43763/37672_eib-113.pdf?v=0. ; Narula, S., Scholes, J., Simon, M., & Zureick, A. (2013). *Nourishing change: Fulfilling the right to food in the United States*. Technical report, New York University School of Law. Cook, J. T., & Frank, D. A. (2008). Food Security, Poverty, and Human Development in the United States. *Annals of the New York Academy of Sciences*, *1136*(1), 193–209. https://doi.org/10.1196/annals.1425.001; Coughenour, C., Kleven, B. C., Gakh, M., Stephen, H., Chien, L.-C., Labus, B., & Whaley, R. (2021). School absenteeism is linked to household food insecurity in school catchment areas in Southern Nevada. *Public Health Nutrition*, *24*(15), 5074–5080. https://doi.org/10.1017/S136898002100063X; Jyoti, D. F., Frongillo, E. A., & Jones, S. J. (2005). Food Insecurity Affects School Children's Academic Performance, Weight Gain, and Social Skills. *The Journal of Nutrition*, *135*(12), 2831–2839. https://doi.org/10.1093/jn/135.12.2831

security, that is, when a person does not have enough to eat.[4]

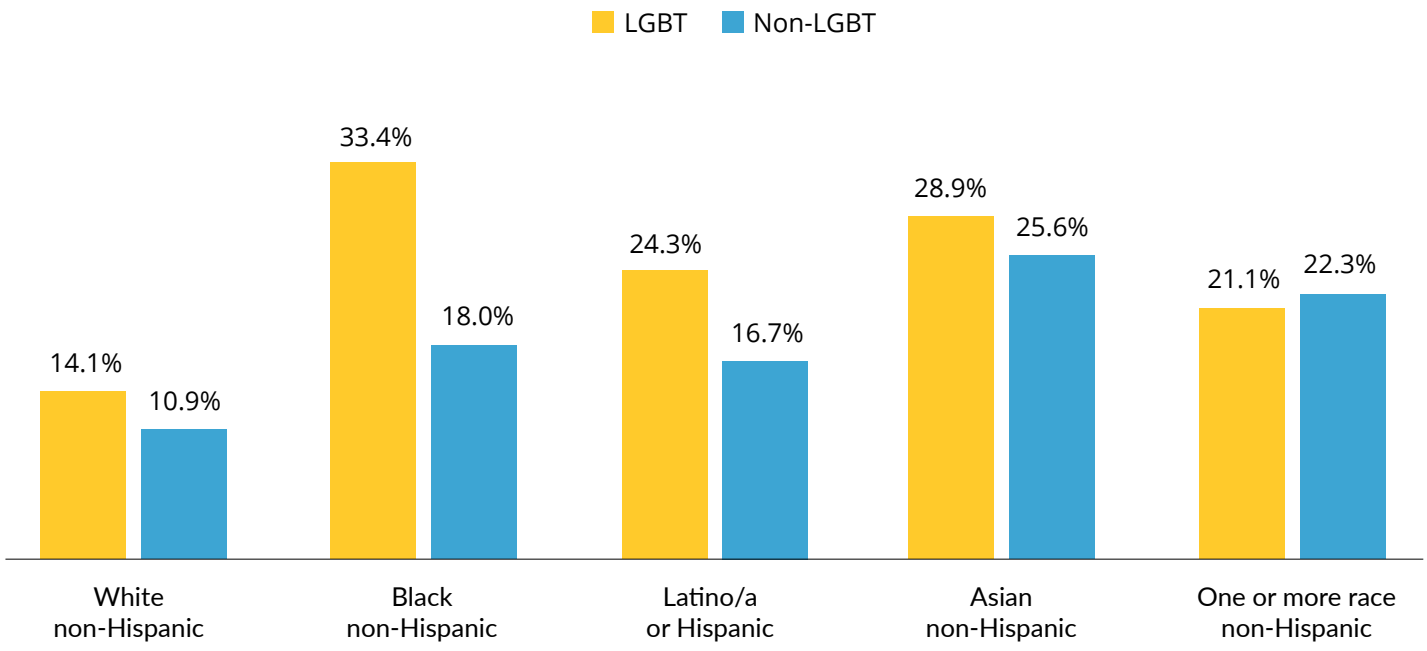
Hunger refers to a potential consequence of food insufficiency. Hunger is "discomfort, illness, weakness, or pain" caused by "prolonged, involuntary lack of food." Food insufficiency does not necessarily cause hunger, but hunger is a possible outcome of food insufficiency.

This brief presents new analyses about the experience of self-reported hunger due to insufficient food at home among LGBT and non-LGBT high school youth using data collected on state Youth Risk Behavior Surveys. For LGBT and non-LGBT 18- to 24-year-olds, we use data from the U.S. Census Bureau's Household Pulse Survey about food insufficiency experienced within the past seven days.

HUNGER AMONG HIGH SCHOOL YOUTH

- One in five (20.1%) LGBT high schoolers in a three-state sample experienced hunger in the last 30 days because there was not enough food at home. In comparison, 15.7% of their non-LGBT peers experienced hunger because there was not enough food at home.[5]
- Nationally, an estimated 371,000 LGBT high school students experience hunger due to food insecurity.[6]
- Racial inequities in hunger due to food insecurity exist for LGBT and non-LGBT youth alike.[7]

Percentage of high school youth reporting hunger by LGBT status and race-ethnicity, Youth Risk Behavior Survey, 2017-2019



[4] A USDA Economic Research Service. (2021). *Food Security in the U.S.: Measurement: What is Food Insufficiency?* https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement/#insufficiency Accessed February 2023.

[5] The difference in the proportions of LGBT and non-LGBT high school students experiencing hunger was not statistically different using an alpha of <0.05 (p=0.05). Analyses of YRBS data conducted by the Williams Institute. Please refer to the methods section for further detail.

[6] Population estimates generated by the Williams Institute. Please refer to methods for further detail.

[7] Analyses of the YRBS data conducted by the Williams Institute. The prevalence of hunger varied across racial-ethnic groups and is the least common about White youth and was more prevalent among youth of color—among both LGBT and non-LGBT youth. Differences between White, non-Hispanic and Black and White, non-Hispanic and Asian LGBT youth were statistically significant at p<0.05. Among non-LGBT youth, differences between White, non-Hispanic and all youth of color groups were statistically significant at p<0.05.

- More Black LGBT high school students report hunger than their non-LGBT Black peers (33.4% vs. 18.0%).[8]

- School-based meals served through the National School Lunch Program and the School Breakfast Program are a reliable food source for millions of U.S. students; however, accessing school-based meals is more difficult for LGBTQ youth.
  - About one in three LGBT high school youth has been bullied at school in the past year—about twice as many as their non-LGBT peers[9]—which increases the likelihood of skipping school,[10] avoiding the cafeteria, and missing meals to be safe.[11]
  - Nearly a third of LGBTQ+ youth (32.2%) who completed GLSEN's 2021 National School Climate Survey missed a day of school in the past month because they felt unsafe or uncomfortable. More than one in ten (11.3%) missed four or more days of school.[12]
  - More than one in five (22.2%) LGBTQ+ youth avoided lunchrooms and cafeterias because they felt unsafe or uncomfortable.[13]
- Strategies to improve access to food for high school LGBTQ youth include, at minimum, preventing school-based bullying and ensuring that LGBTQ youth can access food through the National School Lunch Program.[14]
- National surveillance of hunger among high school students by sexual orientation and gender identity is essential. Information about the experiences of intersex youth is also needed.

[8] Analyses of the YRBS data conducted by the Williams Institute. Differences between Black LGBT and Black non-LGBT youth were statistically significant at $p<0.05$.

[9] Johns, M. M., Lowry, R., Richard, Haderxhanaj, L. T., et al. (2020). *Trends in Violence Victimization and Suicide Risk by Sexual Identity Among High School Students — Youth Risk Behavior Survey, United States, 2015–2019*.MMWR Suppl 2020;69(Suppl-1):19–27. DOI: http://dx.doi.org/10.15585/mmwr.su6901a3external icon; Johns M.M., Lowry, R., Andrzejewski J., et al. Transgender Identity and Experiences of Violence Victimization, Substance Use, Suicide Risk, and Sexual Risk Behaviors Among High School Students — 19 States and Large Urban School Districts, 2017. MMWR 2019; 68:67–71. http://dx.doi.org/10.15585/mmwr.mm6803a3 https://www.cdc.gov/mmwr/volumes/69/su/pdfs/su6901a3-H.pdf; https://www.cdc.gov/mmwr/volumes/68/wr/mm6803a3.htm

[10] Steiner, R. J. & Rasberry, C. N. (2015). Brief report: Associations between in-person and electronic bullying victimization and missing school because of safety concerns among U.S. high school students. *Journal of Adolescence*, *43*, 1–4. https://doi.org/10.1016/j.adolescence.2015.05.005 https://stacks.cdc.gov/view/cdc/117704

[11] Kosciw, J.G., Clark, C. M., & Menard, L. (2022). *The 2021 National School Climate Survey: The Experiences of LGBTQ+ Youth in Our Nation's Schools*. https://www.glsen.org/sites/default/files/2022-10/NSCS-2021-Full-Report.pdf

[12] Kosciw, J.G., Clark, C. M., & Menard, L. (2022). *The 2021 National School Climate Survey: The Experiences of LGBTQ+ Youth in Our Nation's Schools*. https://www.glsen.org/sites/default/files/2022-10/NSCS-2021-Full-Report.pdf

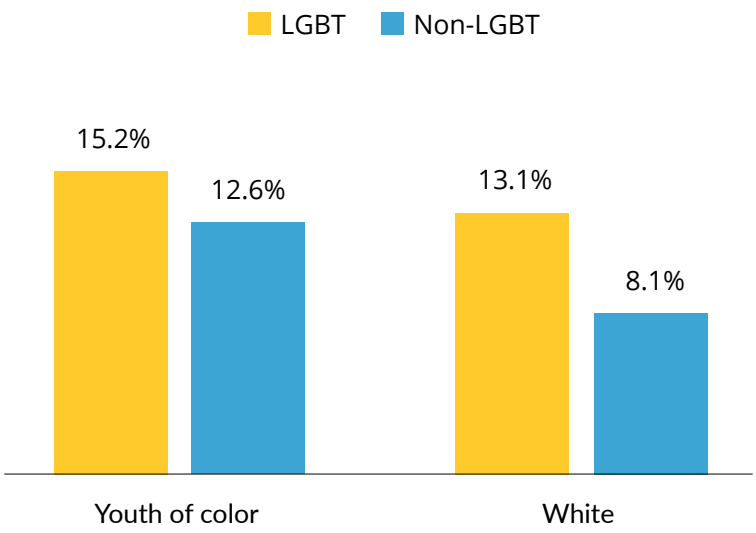
[13] Kosciw, J.G., Clark, C. M., & Menard, L. (2022). *The 2021 National School Climate Survey: The Experiences of LGBTQ+ Youth in Our Nation's Schools*. https://www.glsen.org/sites/default/files/2022-10/NSCS-2021-Full-Report.pdf

[14] Akhtar, S, & Deabler, K. (2022). *Twenty-two States Are Trying to Deny Free School Lunch to LGBTQ Students*. National Center for Law and Economic Justice, New York, CA. https://nclej.org/news/twenty-two-states-are-trying-to-deny-free-school-lunch-to-lgbtq-students https://nclej.org/news/twenty-two-states-are-trying-to-deny-free-school-lunch-to-lgbtq-students

FOOD INSUFFICIENCY AMONG YOUTH AGES 18-24

- More 18- to 24-year-old LGBT youth experienced food insufficiency, sometimes or often not having enough to eat, in the past week compared to their non-LGBT peers (13.9% vs. 10.1%).[15]
- An estimated 703,000 LGBT 18- to 24-year-olds do not have enough to eat.[16]
- Among food insufficient LGBT and non-LGBT older youth, more than half report that they could not afford to buy more food.[17]
    - About one-third of older LGBT and non-LGBT youth who were in the workforce between mid-July 2021 and the end of 2022 were not working in the past week.[18]
    - A larger proportion of older LGBT than non-LGBT youth reported difficulty paying for household expenses (16.6% vs. 12.0%) in the last week—including, but not limited to food, rent or mortgage, car payments, medical expenses, and student loans.[19]
- Racial inequities in food insufficiency exist among LGBT and non-LGBT 18- to 24-year-olds. Among LGBT and non-LGBT older youth, more youth of color experience food insufficiency than their White, non-Hispanic peers.[20]

Percentage of 18- to 24-year-olds reporting food insufficiency by LGBT status and race, Household Pulse Survey, 2021-2022



Note: Differences between White, non-Hispanic youth and youth of color were statistically significant at p<0.05 among both LGBT and non-LGBT groups.

[15] Analyses of Household Pulse data conducted by the Williams Institute. Please refer to methods for further detail.

[16] Population estimates generated by the Williams Institute. Please refer to methods for further detail.

[17] Analyses conducted by the Williams Institute.

[18] Analyses conducted by the Williams Institute.

[19] Analyses conducted by the Williams Institute.

[20] Analyses conducted by the Williams Institute. Differences between White, non-Hispanic youth and youth of color were statistically significant at p<0.05 among both LGBT and non-LGBT groups.

- Direct strategies to improve access to food for 18- to 24-year-old LGBTQ people may include SNAP outreach and enrollment and increasing access to food pantries in secular settings (e.g., college campuses, community-based youth programs).
    - Only 22.6% of income-eligible LGBT adults ages 18 and up or their household members are enrolled in SNAP.[21]
    - LGBTQ people may feel unwelcome at religiously affiliated food pantries and more comfortable accessing pantries at secular organizations that communicate their interest in serving them.[22]
- Additional strategies to improve access to food for older LGBTQ youth may include economic interventions such as unrestricted cash transfers—which are currently being tested with homeless youth in New York City.[23]

[21] Conron, K.J., Guardado, R., O'Neill, K., & Wilson, B.D.M. (2022). *Food Insufficiency Among LGBT Adults During the COVID-19 Pandemic*. The Williams Institute, UCLA, Los Angeles, CA. https://williamsinstitute.law.ucla.edu/wp-content/uploads/LGBT-Food-Insufficiency-Apr-2022.pdf. Data are reported for adults of all ages given challenges ascertaining economic independence/dependence of young adult respondents to the Household Pulse Survey.

[22] Wilson, B.D.M., Badgett, M. V. L., & Gomez, A. G. H. (2020). *Experiences with Food Insecurity and Food Programs Among LGBTQ People*. The Williams Institute, Los Angeles, CA. https://williamsinstitute.law.ucla.edu/wp-content/uploads/LGBTQ-Food-Bank-Jun-2020.pdf; Russomanno, J. & Jabson Tree, J.M. (2020). Food insecurity and food pantry use among transgender and gender non-conforming people in the Southeast United States. *BMC Public Health 20*, 590.

[23] Chapin Hall at The University of Chicago. (2021). *Public-Private Partnership Launches the First Direct Cash Transfer Study for Addressing Young Adult Homelessness*. Chicago, IL. https://www.chapinhall.org/news/public-private-partnership-launches-the-first-direct-cash-transfer-study-for-addressing-young-adult-homelessness/ https://www.nyc.gov/office-of-the-mayor/news/444-21/recovery-all-us-city-new-york-chapin-hall-point-source-youth-launch-goundbreaking

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ABOUT THE WILLIAMS INSTITUTE

The Williams Institute on Sexual Orientation and Gender Identity Law and Public Policy at UCLA School of Law advances law and public policy through rigorous, independent research and scholarship, and disseminates its work through a variety of education programs and media to judges, legislators, lawyers, other policymakers and the public. These studies can be accessed at the Williams Institute website.

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APPENDIX: TABLES AND METHODS BY SURVEY

YOUTH RISK BEHAVIOR SURVEY

Methods

This analysis uses pooled cross-sectional data from the 2017 and 2019 Youth Risk Behavior Surveys (YRBS).[24] The YRBS is a school-based survey developed by the Centers for Disease Control and Prevention to monitor the health status and health behaviors of youth across the United States. State surveys are conducted annually with 9th through 12th graders enrolled in public schools through a partnership between the CDC and states. The survey includes core questions provided by the CDC, as well as optional questions, including sexual orientation identity, transgender status, and hunger.

In 2017 and 2019, several states included a sexual orientation identity question to identify LGB youth, some integrated a question about hunger, and a handful included a transgender status question. The sexual orientation identity question is, "Which of the following best describes you? Heterosexual (straight), gay or lesbian, bisexual, or not sure." Respondents who selected gay or lesbian or bisexual were classified as LGB, while those who selected heterosexual (straight) were coded as straight and those who selected "not sure" were excluded from the analytic sample.

Hunger was assessed through a single question, "During the past 30 days, how often did you go hungry because there was not enough food in your home?" Participants who indicated that they always, most of the time, or sometimes went hungry in the past 30 days were coded as experiencing hunger.[25] Transgender status was determined through responses to the question, "Some people describe themselves as transgender when their sex at birth does not match the way they think or feel about their gender. Are you transgender?" No; Yes, I am transgender; Not sure if I am transgender, Don't know what the question is asking." Those who selected "Yes, I am transgender" were classified as transgender, those who responded "No" were classified as not transgender (i.e., cisgender), and those who selected "Not sure", or "Don't know" were excluded from the analytic sample. Youth who were LGB or transgender were classified as LGBT while youth who were straight and not transgender were classified as non-LGBT.

In 2017 and 2019, Arkansas and Arizona included sexual orientation and hunger. In 2017 and 2019, Colorado, Delaware, and Hawaii included sexual orientation, hunger, and transgender status questions these questions. Findings for LGB and non-LGB youth are presented from the five-state sample (Tables 1A and 2A) whereas findings for LGBT and non-LGBT youth are reported from the three-state sample (Tables 1B and 2B). Findings from the three-state sample (Colorado, Delaware, and Hawaii) were nearly identical to findings from the five-state sample which also included Arkansas and Arizona.

[24] *YRBSS Overview*. Centers for Disease Control and Prevention, Adolescent and School Health. https://www.cdc.gov/healthyyouth/data/yrbs/overview.htm.

[25] Krupsky, K. L., Sliwa, S., Seligman, H., Brown, A. D., Liese, A. D., Demissie, Z., & Barnidge, E. (2022). Adolescent Health Risk Behaviors, Adverse Experiences, and Self-reported Hunger: Analysis of 10 States from the 2019 Youth Risk Behavior Surveys. *Journal of Hunger & Environmental Nutrition*, *0*(0), 1–17. https://doi.org/10.1080/19320248.2022.2088263

Analytics samples were limited to 23,053 survey respondents who could be classified as LGB or non-LGB in the five-state sample and 15,880 respondents who could be classified as LGBT and non-LGBT and also answered the hunger question in the five- and three-state samples, respectively. Descriptive analyses were conducted using Stata v17.1 statistical software. Analyses included design-based F-tests (Rao-Scott chi-square tests) of differences in proportions to assess whether outcomes varied across groups at an alpha of 0.05.[26] Confidence intervals (95% CI) were included to communicate the degree of uncertainty around an estimate due to sampling error.

Non-overlapping confidence intervals were deemed indicative of statistically significant differences in two proportions at an alpha of 0.05. In instances where confidence intervals appeared close, nominal logistic regression was conducted to evaluate whether differences between White, non-Hispanic and other racial-ethnic groups were statistically significantly different. All analyses were weighted to represent high school youth in the states included in the sample using sampling weights as well as design variables provided by the CDC. As per guidance from the CDC, sampling weights were divided by the number of years that a state was included in an analytic sample.[27] All sample sizes (n) are unweighted.

Population Estimation

To estimate the number of LGBT youth in high school who experienced hunger in the last year (370,997), we multiplied the percentage (20.1%) of LGBT-identified youth who reported hunger in the three-state 2017-2019 pooled Youth Risk Behavior Survey (YRBS) sample and applied it to an estimate of the number of LGBT youth in school (1,845,758). We calculated the number of LGBT youth in high school by multiplying the percentage (11.61%) of LGBT-identified youth in a pooled 15-state 2017-2019 YRBS sample by the estimated number of people (ages 10 to 19) enrolled in high school in the United States in 2020 (N=15,898,000) as per the US Census Bureau (Source: Enrollment Status of the Population 3 Years and Over, by Sex, Age, Race, Hispanic Origin, Foreign Born, and Foreign-Born Parentage: October 2020; Current Population Survey, School Enrollment Supplement available at www.census.gov/programs-surveys/cps.html). We followed the same method to produce ranges for population estimates based on percentages contained in the 95% confidence intervals. All estimates were rounded to the nearest 1,000.

[26] J. N. K. Rao, A. J. Scott, On chi-squared tests for multiway contingency tables with cell proportions estimated from survey data. *Ann. Stat. 12*, 46–60 (1984).

[27] *2019 Combining YRBS Data Across Years and Sites*. (2020). https://www.cdc.gov/healthyyouth/data/yrbs/pdf/2019/2019_YRBS_combining_data.pdf

Tables

Table 1A. Weighted characteristics of high school youth (N=23,053), overall and by LGB status, Youth Risk Behavior Surveys, 2017-2019, 5-State Sample (Arkansas, Arizona, Colorado, Delaware, Hawaii)

	OVERALL N=23,053		LGB N=2,481		STRAIGHT N=20,572		F TEST#
	%	95% CI	%	95% CI	%	95% CI	P-VALUE
Grade							
9-10th	51.4	47.7, 55.1	49.7	45.3,54.2	51.6	47.9, 55.4	0.27
11th-12th	48.6	44.9, 52.3	50.3	45.8,54.7	48.4	44.6, 52.1	
Sex							
Male	50.9	49.0, 52,7	30.0	27.5, 32.6	53.7	51.9, 55.6	**<0.01**
Female	49.1	47.3, 51.0	70.0	67.4, 72.5	46.3	44.4, 48.1	
Race-ethnicity							
White, non-Hispanic	48.8	45.9, 51.6	47.4	43.2, 51.6	48.9	46.0, 51.8	0.07
Black, non-Hispanic	8.3	6.8, 10.0	8.7	6.4, 11.6	8.3	6.9, 9.9	
Asian, non-Hispanic	5.0	4.0, 6.2	3.3	2.4, 4.6	5.2	4.2, 6.4	
Latino/a or Hispanic	30.3	27.6, 33.2	32.2	28.5, 36.2	30.1	27.3, 33.0	
Any other race alone or more than one race	7.7	6.7, 8.8	8.4	6.8, 10.3	7.6	6.5, 8.8	
State							
Arkansas	18.4	16.1, 21.1	20.2	15.9, 25.4	18.2	15.8, 20.8	
Arizona	40.7	38.2, 43.4	41.5	36.7, 46.6	40.6	38.0, 43.3	0. 45
Colorado	30.1	27.4, 32.9	28.6	24.1, 33.5	30.3	27.6, 33.1	
Delaware	5.0	3.7, 6.6	4.5	3.2, 6.3	5.1	3.8, 6.7	
Hawaii	5.8	4.0, 8.3	5.1	3.5, 7.6	5.9	4.1, 8.4	
Went hungry in the past 30 days							
Sometimes to always	14.9	13.7, 16.2	20.1	17.2, 23.5	14.2	13.0, 15.6	**<0.001**
Rarely or never	85.1	83.8, 86.3	79.9	76.5, 82.8	85.8	84.4, 87.0	

CI: Confidence Interval. Bold p-values are statistically significant.

F test for test of difference in proportions.

Table 2A. Prevalence of hunger among high school youth (N=23,053) by select demographic characteristics, overall and by LGB status in the Youth Risk Behavior Surveys, 2017-2019, 5-State Sample (Arkansas, Arizona, Colorado, Delaware, Hawaii)

	OVERALL N=23,053		LGB N=2,481		STRAIGHT N=20,572		F TEST[#]
	%	95% CI	%	95% CI	%	95% CI	P VALUE
Grade							
9th-10th	14.2	12.8, 15.7	21.8	17.1, 27.4	13.3	11.9, 14.8	**<0.001**
11th-12th	15.7	13.9, 17.6	18.6	14.9, 22.8	15.3	13.4, 17.3	0.11
Sex							
Male	14.5	13.1, 16.0	18.5	13.0, 25.6	14.3	12.8, 15.8	0.17
Female	15.3	13.9, 16.9	20.8	17.2, 25.0	14.2	12.7, 15.9	**<0.001**
Race-ethnicity							
White, non-Hispanic	10.9	9.4, 12.5	16.7	12.3, 22.4	10.1	8.6, 11.9	**<0.01**
Black, non-Hispanic	15.9	13.2, 19.1	20.1	12.2, 31.4	15.4	12.7, 18.6	0.31
Asian, non-Hispanic	23.9	20.5, 27.6	23.4	15.4, 34.0	23.9	20.4, 27.8	0.92
Latino/a or Hispanic	21.3	18.9, 24.0	24.5	18.9, 24.0	20.8	18.1, 23.9	0.44
Any other race alone, or more than one race	17.2	14.7, 19.9	23.5	18.3, 29.6	16.3	13.8, 19.2	**<0.01**
State							
Arkansas	9.0	7.6, 10.6	17.4	12.3, 24.2	7.9	6.4, 9.7	**<0.001**
Arizona	15.9	13.7, 18.4	21.6	15.5, 29.2	15.1	13.0, 17.5	**0.03**
Colorado	14.2	11.5, 17.4	18.0	10.8, 28.4	13.8	11.3, 16.7	0.24
Delaware	14.0	12.5, 15.7	18.6	13.4, 25.1	13.4	11.9, 15.1	0.06
Hawaii	23.8	22.0, 25.8	26.0	21.5, 31.1	23.6	21.8, 25.5	0.26

CI: Confidence Interval. Bold p-values are statistically significant.

[#] F test for test of difference in proportions.

Table 1B. Weighted characteristics of high school youth (N=15,880), overall and by LGBT status, Youth Risk Behavior Surveys, 2017-2019, 3-State Sample (Colorado, Delaware, Hawaii)

	ALL N=15,880		LGBT N=1,735		NON-LGBT N= 14,145		F TEST[#]
	%	95% CI	%	95% CI	%	95% CI	P-VALUE
Grade							
9-10th	52.5	49.0, 56.0	48.8	44.1, 53.6	53.0	49.2, 56.7	0.10
11th-12th	47.5	44.0, 51.0	51.2	46.4, 55.9	47.0	43.3, 50.8	
Sex							
Male	50.7	48.2, 53.2	25.5	22.0, 29.4	54.0	51.5, 56.5	**<0.001**
Female	49.3	46.8, 51.8	74.5	70.6, 78.0	46.0	43.5, 48.5	
Race-ethnicity							
White, non-Hispanic	50.0	44.9, 55.5	48.8	42.9, 54.7	50.2	44.8, 55.6	**<0.01**
Black, non-Hispanic	6.0	4.8, 7.5	4.1	2.7, 6.0	6.3	4.9, 7.9	
Asian, non-Hispanic	8.3	6.7, 10.3	5.7	4.2, 7.8	8.6	6.9, 10.7	
Latino/a or Hispanic	25.8	21.4, 30.7	29.5	24.5, 35.5	25.3	20.8, 30.4	
Any other race alone, or more than one race	9.9	8.4, 11.6	11.7	9.3, 14.6	9.6	8.1, 11.4	
State							
Colorado	73.7	66.7, 79.7	74.0	66.1, 80.5	73.6	66.6, 79.6	
Delaware	12.2	9.5, 15.6	12.0	8.7, 16.3	12.2	9.5, 15.7	0.95
Hawaii	14.1	10.3, 19.0	14.0	9.9, 19.5	14.1	10.3, 19.0	
Went hungry in the past 30 days							
Sometimes to always	16.2	14.8, 18.1	20.1	15.3, 25.9	15.7	14.1, 17.5	0.05
Rarely or never	83.8	81.9, 85.5	79.7	74.1, 84.7	84.3	82.3, 85.9	

CI: Confidence Interval. Bold p-values are statistically significant.

[#] F test for test of difference in proportions.

Table 2B. Prevalence of hunger among high school youth (N=15,880) by select demographic characteristics, overall and by LGBT status, in the Youth Risk Behavior Survey, 2017-2019, 3-State Sample (Colorado, Delaware, Hawaii)

	ALL N=15,880		LGBT N=1,735		NON-LGBT N= 14,145		F TEST[#]
	%	95% CI	%	95% CI	%	95% CI	P-VALUE
Grade							
9th-10th	16.2	14.2, 18.5	22.8	16.3, 30.8	15.4	13.6, 17.5	**0.01**
11th-12th	16.2	14.0, 18.6	17.3	12.5, 23.4	16.1	13.9, 18.5	0.65
Sex							
Male	15.6	13.3, 18.2	20.9	13.5, 30.8	15.3	12.9, 18.0	0.17
Female	16.8	14.8, 19.1	19.8	14.2, 27.0	16.3	14.4, 18.3	0.22
Race-ethnicity							
White, non-Hispanic	11.3	9.6, 13.2	14.1	8.0, 23.6	10.9	9.2, 13.0	0.39
Black, non-Hispanic	19.4	15.6, 23.9	33.4	20.1, 50.1	18.0	14.5, 22.2	**0.02**
Asian, non-Hispanic	25.9	22.5, 29.6	28.9	20.0, 39.7	25.6	22.2, 29.4	0.50
Latino/a or Hispanic	22.1	19.6, 24.9	21.2	14.9, 29.1	22.3	19.5, 25.3	0.78
Any other race alone, or more than one race	17.7	13.7, 22.6	16.7	12.9, 21.5	24.3	15.9, 35.3	0.74
State							
Colorado	14.2	11.5, 17.3	17.8	10.7, 28.0	13.7	11.3, 16.6	0.26
Delaware	14.1	12.5, 15.8	18.4	13.3, 24.9	13.5	11.9, 15.2	0.08
Hawaii	23.8	21.9, 25.8	27.7	23.0, 32.9	23.3	21.5, 25.2	**0.04**

CI: Confidence Interval. Bold p-values are statistically significant.

[#] F test for test of difference in proportions.

HOUSEHOLD PULSE SURVEY

Methods

This analysis uses repeated cross-sectional data[28] collected between July 21 to November 14, 2022 by the U.S. Census Bureau on the Household Pulse Phases 3.2-3.6 Survey[29] (weeks 34-51). The Household Pulse Survey was developed to assess the impact of COVID-19 on employment, food and housing security, and the physical and mental well-being of the U.S. population. Households were enumerated via the Census Bureau's Master Address File (MAF); email addresses and cell phone numbers were appended to create a contact sampling frame for the survey which represented 81% of households in the MAF. [30] Group quarters such as homeless shelters, nursing homes, and college dormitories were not sampled. Online surveys were conducted in English and Spanish with 26,557 U.S. adults ages 18 to 24. The response rate for weeks 34-51 ranged from 5.4% to 6.5%.[31]

Questions about sex assigned at birth (What sex were you assigned at birth, on your original birth certificate?) and current gender identity (Do you currently describe yourself as male, female, or transgender?) were added to the Household Pulse Survey starting in week 34 and were used to classify respondents as transgender and cisgender. Respondents who selected transgender as their gender identity were classified as transgender. In the remaining sample that selected male or female gender identity responses and whose sex was not imputed by the Census Bureau (e.g., AGENID_BIRTH=2), those who selected a gender identity (male or female) that differed from their sex assigned at birth (male or female) were classified as transgender. Respondents who selected gender identity options (male or female) that were the same as their sex assigned at birth (male or female) were classified as cisgender. Those who selected "none of these" as their response to the gender identity question were excluded from classification.

Imputed sex was not used to classify transgender and cisgender respondents given concerns about the validity of the imputed sex data. Descriptive analyses conducted by Dr. Bill Jesdale indicate that the demographic characteristics of those classified as transgender based on imputed sex look more similar to those of cisgender respondents than to those of transgender respondents who answered the sex assigned at birth question.[32] In addition, following prior analyses of Pulse data conducted by the Williams Institute,[33] 27 transgender respondents who reported living in households of 10+ members were excluded from the analytic sample.

A question about sexual orientation identity (Which of the following best represents how you think of yourself?) was added to the Household Pulse Survey starting in week 34 and was used to classify respondents as lesbian, gay, or bisexual (LGB) and straight based on their selection of these response options (gay or lesbian; straight, that

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[28] United States Census Bureau. (2021). *Household Pulse Survey Public Use File (PUF).* https://www.census.gov/programs-surveys/household-pulse-survey/datasets.html

[29] United States Census Bureau. (2021) *Household Pulse Survey Technical Documentation*. https://www.census.gov/programs-surveys/household-pulse-survey/technical-documentation.html#phase3.2

[30] United States Census Bureau. (2021). *Source of the Data and Accuracy of the Estimates for the Household Pulse Survey – Phase 3.2*. https://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/Phase3-2_Source_and_Accuracy_Week39.pdf

[31] United States Census Bureau. (2021). *Source of the Data and Accuracy of the Estimates for the Household Pulse Survey – Phase 3.2*. https://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/Phase3-2_Source_and_Accuracy_Week39.pdf

[32] Jesdale, B.M. (2021). *Counting Gender Minority Populations in the Household Pulse Survey (The AGENID=2 Memo).* National LGBT Cancer Network. https://cancer-network.org/wp-content/uploads/2021/10/Counting-GM-People-in-Pulse-Data.pdf

[33] Conron, K.J., Guardado, R., O'Neill, K., & Wilson, B.D.M. (2022). *Food Insufficiency Among LGBT Adults During the COVID-19 Pandemic.* The Williams Institute, UCLA, Los Angeles, CA. https://williamsinstitute.law.ucla.edu/wp-content/uploads/LGBT-Food-Insufficiency-Apr-2022.pdf

is not gay or lesbian; bisexual). Respondents who selected "something else" as their identity were excluded from classification based on prior research indicating that this group is heterogeneous, and, without a follow-up write-in, cannot be classified as sexual minority or as straight.[34] Respondents who were transgender and/or LGB were classified as LGBT while respondents who were cisgender and straight were classified as non-LGBT.

Food insufficiency was assessed with a single question, "In the last 7 days, which of these statements best describes the food eaten in your household?" Using criteria articulated by the USDA,[35] participants who indicated that they sometimes or often did not have enough to eat were considered food insufficient. Although not a focus of this report, the USDA also considers those who had enough, but not always the kinds of food that they wanted to eat marginally food insufficient and those who reported that they had had enough of the kinds of food that they wanted to eat food sufficient.

The analytic sample was limited to 24,242 survey respondents ages 18-24 who could be classified as LGBT or non-LGBT based on the criteria described above and who answered the Household Pulse Survey question about food insufficiency. Descriptive analyses were conducted using Stata v17.1 statistical software. Analyses included design-based F-tests (Rao-Scott chi-square tests) of differences in proportions to assess whether outcomes varied across groups at an alpha of 0.05.[36] Confidence intervals (95% CI) were included to communicate the degree of uncertainty around an estimate due to sampling error.

Non-overlapping confidence intervals were deemed indicative of statistically significant differences in two proportions at an alpha of 0.05. In instances where confidence intervals appeared close, t-tests were conducted to evaluate whether two proportions were indeed different. All analyses were weighted to represent adults ages 18-24 and up living in U.S. households using person-level weights provided by the Census Bureau. All sample sizes (n) are unweighted.

Population Estimation

To estimate the number of LGBT 18–24-year-olds who experienced food insufficiency in the prior week (n=703,449), we multiplied the percentage (14.9%) of LGBT-identified 18–24-year-olds who reported sometimes or often not having enough to eat in the prior week in a pooled sample Household Pulse Survey (Weeks July 21 2021 to Nov 14 2022) and applied it to an estimate of the number of LGBT 18-to-24 year olds in the US (4,721,133). We calculated the number of LGBT 18-to-24-year-olds by multiplying the percentage (15.4%) of LGBT-identified older youth in a pooled 37-state 2020-2021 Behavioral Risk Factor Surveillance Survey (BRFSS) sample by the estimated number of people ages 18 to 24 in the United States in the American Community Survey (N=30,656,707) 2019 three-year estimates produced by the U.S. Census Bureau and accessed through IPUMS USA (available at https://usa.ipums.org/usa/acs.shtml). We followed the same method to produce ranges for population estimates based on percentages contained in the 95% confidence intervals. All estimates were rounded to the nearest 1,000.

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[34] Division of Health Interview Statistics, National Center for Health Statistics. (July 2014). *A Brief Quality Assessment of the NHIS Sexual Orientation Data*. Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. https://www.cdc.gov/nchs/data/nhis/qualityso2013508.pdf. Accessed February 23, 2022; Eliason, M. J., Radix, A., McElroy, J. A., Garbers, S., & Haynes, S. G. (2016). The "Something Else" of Sexual Orientation: Measuring Sexual Identities of Older Lesbian and Bisexual Women Using National Health Interview Survey Questions. *Women's health issues: Official publication of the Jacobs Institute of Women's Health*, *26 Suppl 1*, S71–S80.

[35] USDA Economic Research Service. (2021). *Food Security in the U.S.: Measurement: What is Food Insufficiency?* https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement/#insufficiency. Accessed November 2021.

[36] J. N. K. Rao, A. J. Scott, On chi-squared tests for multiway contingency tables with cell proportions estimated from survey data. *Ann. Stat. 12*, 46–60 (1984).

Tables

Table 1. Sociodemographic characteristics of LGBT and non-LGBT participants ages 18-24 (N=24,173) in the Household Pulse Survey, July 21, 2021 to November 14, 2022 (Weeks 34-51)

	LGBT N=6,970		NON-LGBT N=17,203		F TEST[#]
	%	95% CI	%	95% CI	P-VALUE
Gender					
Cisgender man	32.9	30.8, 35.1	59.8	58.5, 61.1	**<0.001**
Cisgender woman	55.3	53.1, 57.3	40.2	38.9, 41.5	
Transgender, all reported gender identities	11.8	10.5, 13.2	--	--	
Race-ethnicity					
White, non-Hispanic	62.4	60.3, 64.5	56.0	54.6,57.4	**<0.001**
Black, non-Hispanic	4.7	4.0, 5.5	6.9	6.2, 7.6	
Asian, non-Hispanic	5.1	4.2, 6.1	7.4	6.8, 8.1	
Latino/a or Hispanic	21.8	19.8 23.9	25.6	24.2, 23.8	
Any other race alone, or more than one race	6.1	5.4, 6.9	4.2	3.8, 4.6	
Education					
High school or less	38.2	36.0, 40.5	42.0	40.5, 43.5	**0.002**
Associates or some college	49.0	46.9, 51.1	44.9	43.5, 46.2	
Bachelor's or more	12.8	11.8, 13.8	13.2	12.5, 13.8	
Employment past 7 days (work for pay or profit) *Among those in the workforce n=24,150*					
Yes	64.8	62.6, 66.8	65.5	64.1, 66.9	0.56
No	35.2	33.2, 37.4	34.5	33.1, 35.9	
Mean household size	3.0	2.9, 3.0	3.1	3.0, 3.1	**<0.01**
Difficulty paying for household expenses					
Not difficult to somewhat difficult	72.7	70.9, 75.1	63.5	62.2, 64.8	**<0.001**
Very difficult	16.5	14.9, 18.3	12.0	11.1, 12.9	
Region					
Northeast	15.0	13.6, 16.4	14.3	13.4, 15.3	0.76
South	36.9	34.9, 39.0	38.0	36.6, 39.4	
Midwest	21.0	19.6, 22.5	20.9	19.9, 22.0	
West	27.1	25.3, 29.0	26.8	25.5, 28.1	

CI: Confidence Interval. Bold p-values are statistically significant.

[#] F test for test of difference in proportions.

Table 2. Food sufficiency, food resource utilization, and perceived reasons for food insufficiency among LGBT and non-LGBT participants ages 18-24 (N=24,173) in the Household Pulse Survey, July 21, 2021 to November 14, 2022 (Weeks 34-51)

	LGBT N=6,970		NON-LGBT N=17,203		F TEST[#]
	%	95% CI	%	95% CI	P-VALUE
Food insufficiency in the last 7 days					
Enough food of the kinds wanted	53.8	51.7,55.9	63.5	62.2,64.9	**<0.01**
Enough food but not always kinds wanted	32.3	30.3,34.4	26.4	25.1,27.7	
Sometimes or often not enough to eat	13.9	12.5,15.4	10.1	9.2, 10.9	
Free groceries or a free meal last 7 days (self or household member)					
Yes	7.5	6.2, 9.0	5.3	4.7, 5.9	**0.002**
No	92.4	90.7, 93.8	94.7	94.0, 95.3	
Why did you not have enough to eat? *Among respondents who sometimes or often did not have enough to eat* n= 9,032					
Couldn't afford to buy more food	54.6	51.4,57.8	53.3	50.8,55.8	**<0.001**
Couldn't get out to buy food	16.5	14.2,19.0	10.5	9.1,12.2	
Safety concerns	10.3	8.7,12.1	8.0	6.6,9.6	
No reason	18.6	16.4,21.1	28.2	25.9,30.5	

CI: Confidence Interval. Bold p-values are statistically significant. Bold p-values are statistically significant.

[#] F test for test of difference in proportions.

Table 3. Food sufficiency within race and LGBT status groups among participants ages 18-24 (N=24,173) in the Household Pulse Survey, July 21, 2021 to November 14, 2022 (Weeks 34-51)

	ENOUGH FOOD N= 15,094		ENOUGH FOOD BUT NOT OF THE DESIRED KIND N= 6,666		SOMETIMES OR OFTEN NOT ENOUGH TO EAT N= 2,413		F TEST[#]
	%	95% CI	%	95% CI	%	95% CI	P-VALUE
Race and LGBT identity							
White, Non-LGBT	67.9	66.2,69.5	24.0	22.6,25.6	8.1	7.2,9.1	**<0.001**
White, LGBT	56.3	53.8,58.7	30.7	28.5,32.9	13.1	11.5,14.8	
Youth of Color, Non-LGBT	58.0	55.7,60.3	29.4	27.2,31.7	12.6	11.1,14.2	
Youth of Color, LGBT	49.8	45.9,53.6	35.0	31.2,39.0	15.2	12.8,18.1	

CI: Confidence Interval. Bold p-values are statistically significant.

[#] F test for test of difference in proportions.

Row percentages total 100%.