

Smoking and Mental Health: Associations between Adolescent E-cigarette Use and Feelings and Behaviors toward Suicide

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INTRODUCTION

- Tobacco use remains a principal cause of morbidity and mortality in the U.S., and often begins in teenage years.¹
- Electronic cigarette use among adolescents promotes nicotine dependence and results in more dangerous combustible tobacco use.²
- Smoking has been found to predict suicidal ideation and behavior among adolescents.³
- Suicide is also the second leading cause of death among high school-aged youths 14–18 years, and between 2009–2018, suicide rates among this age group increased from 6.0 to 9.7 per 100,000 population.⁴
- This study examined the association between current adolescent e-cigarette use and suicidal feelings and behaviors, compared to non-e-cigarette users.

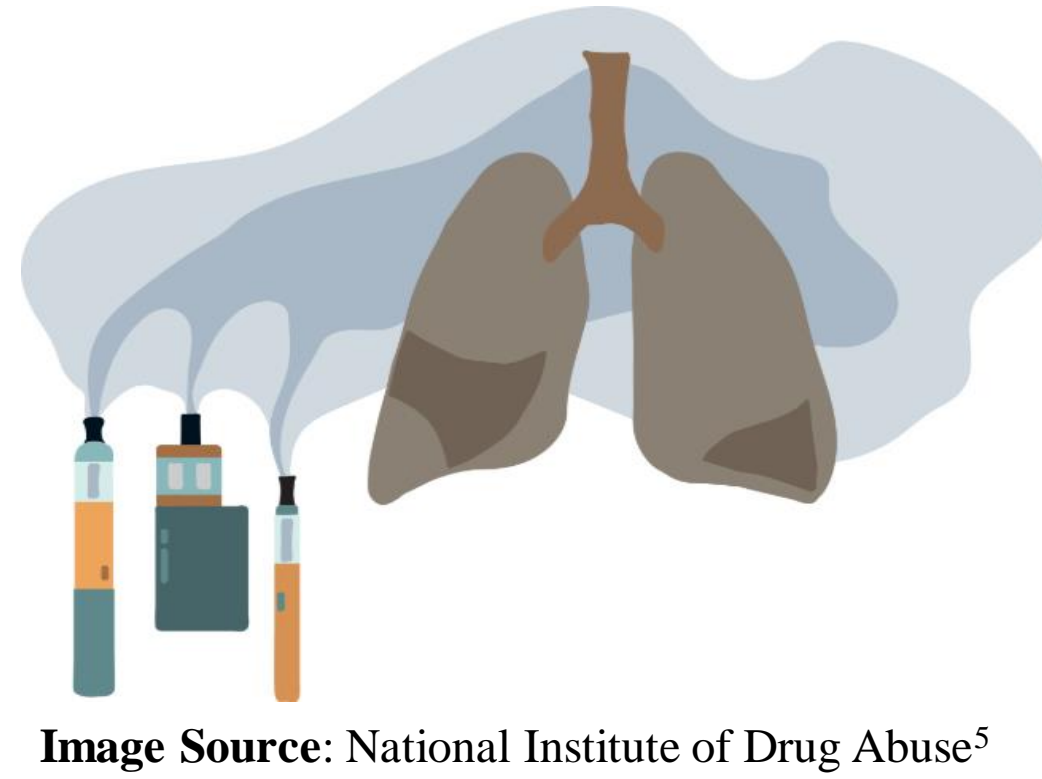


Image Source: National Institute of Drug Abuse⁵

METHODOLOGY

Design

- Cross-sectional analysis of data from the 2019 National Youth Risk Behavior Survey (NYRBS).

Sample

- 13,677 respondents completed the NYRBS and of these 11,929 were between 13 and 17 years of age and qualified for the study.
- 11,172 answered whether they currently used e-cigarettes, and this was the final sample size used in the study.
- Current e-cigarette users** were defined as those who reported 1) having ever used an electronic vapor product, and 2) used an electronic vapor product in the past 30 days prior to the survey.

Measures

- The measure for feelings toward suicide was how often participants reported feeling hopeless or sad every day for two weeks, within the past twelve months.
- Measures of suicide behavior were how often responders reported having 1) ever seriously considered attempting suicide, 2) made a plan to attempt suicide, 3) actually attempted suicide, and 4) needed to be treated by a doctor or nurse after an injurious suicide attempt.

Analysis

- Descriptive statistics to characterize the sample population.
- Chi-square analysis to determine differences between current and non-e-cigarette users.

RESULTS

Demographic Characteristics of the Sample

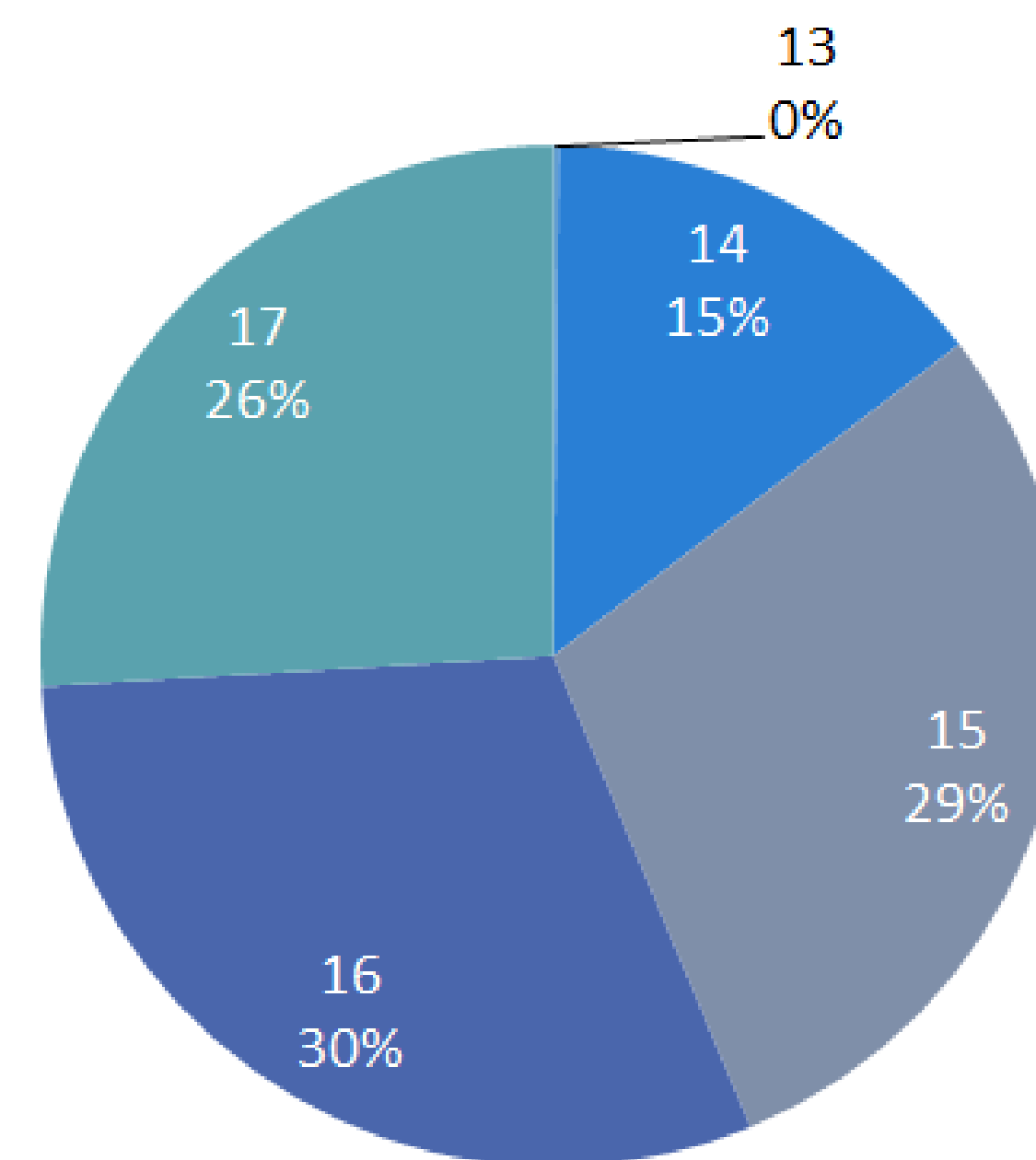


Figure 1. Age

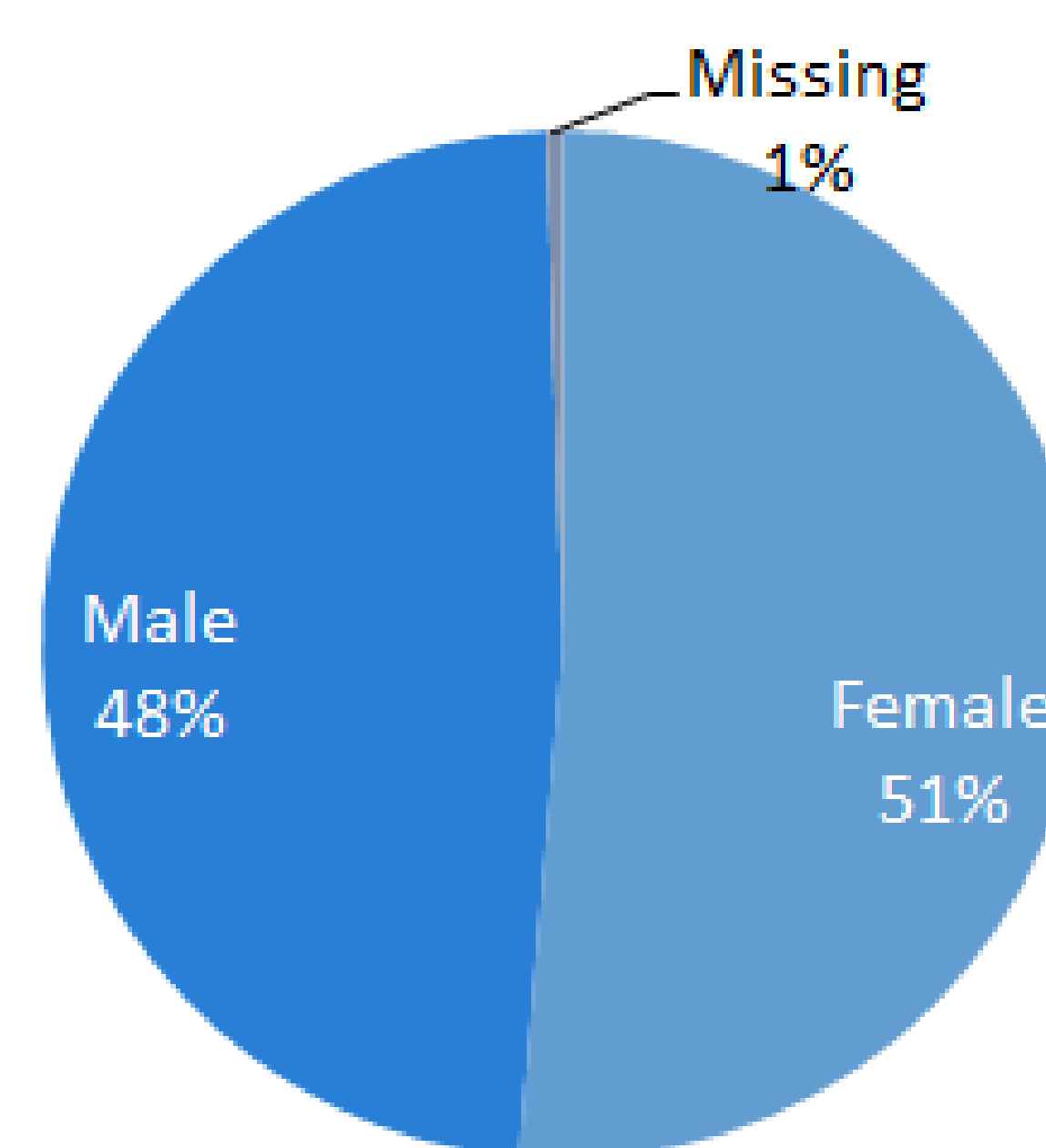


Figure 2. Sex

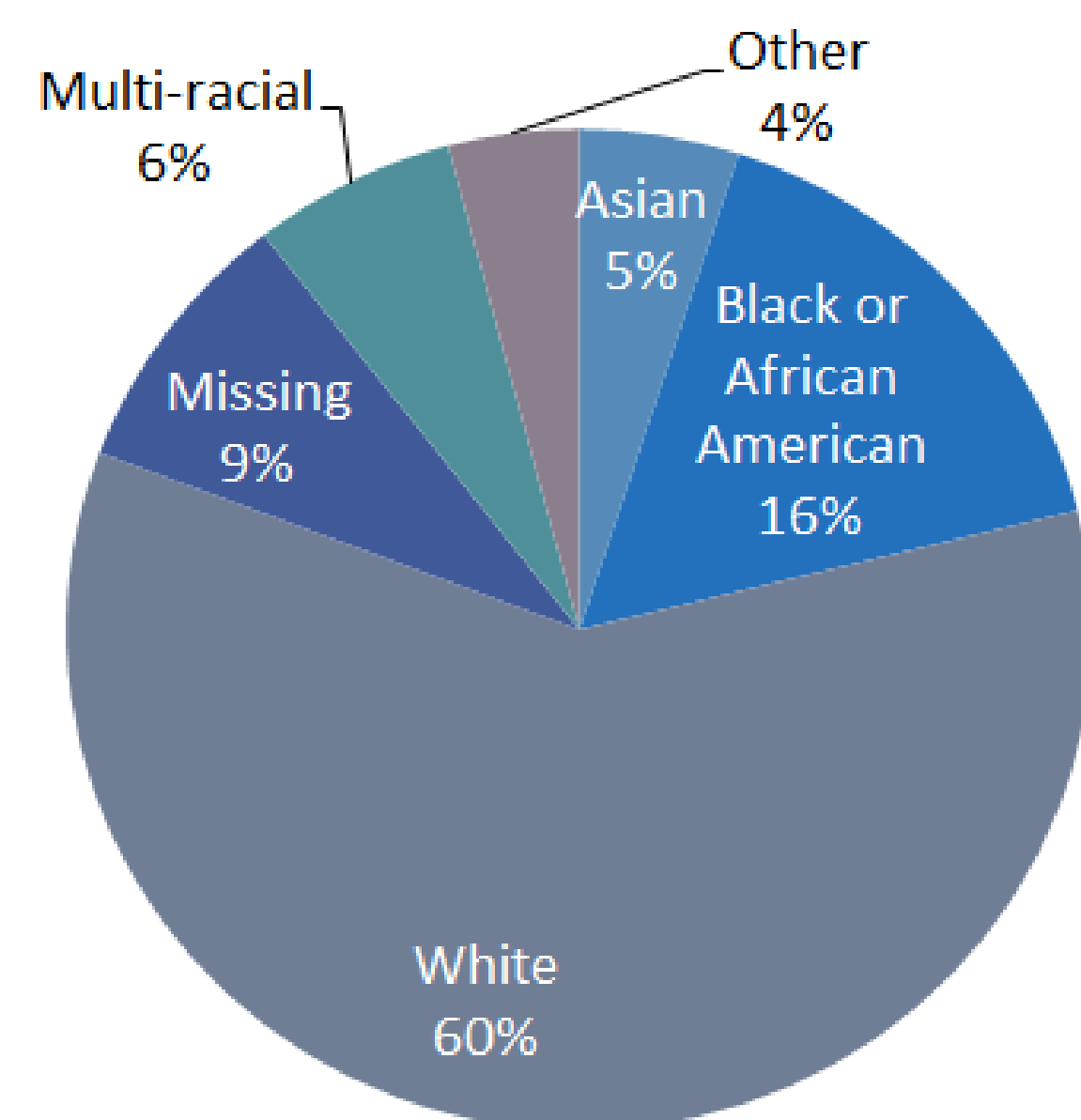


Figure 3. Race

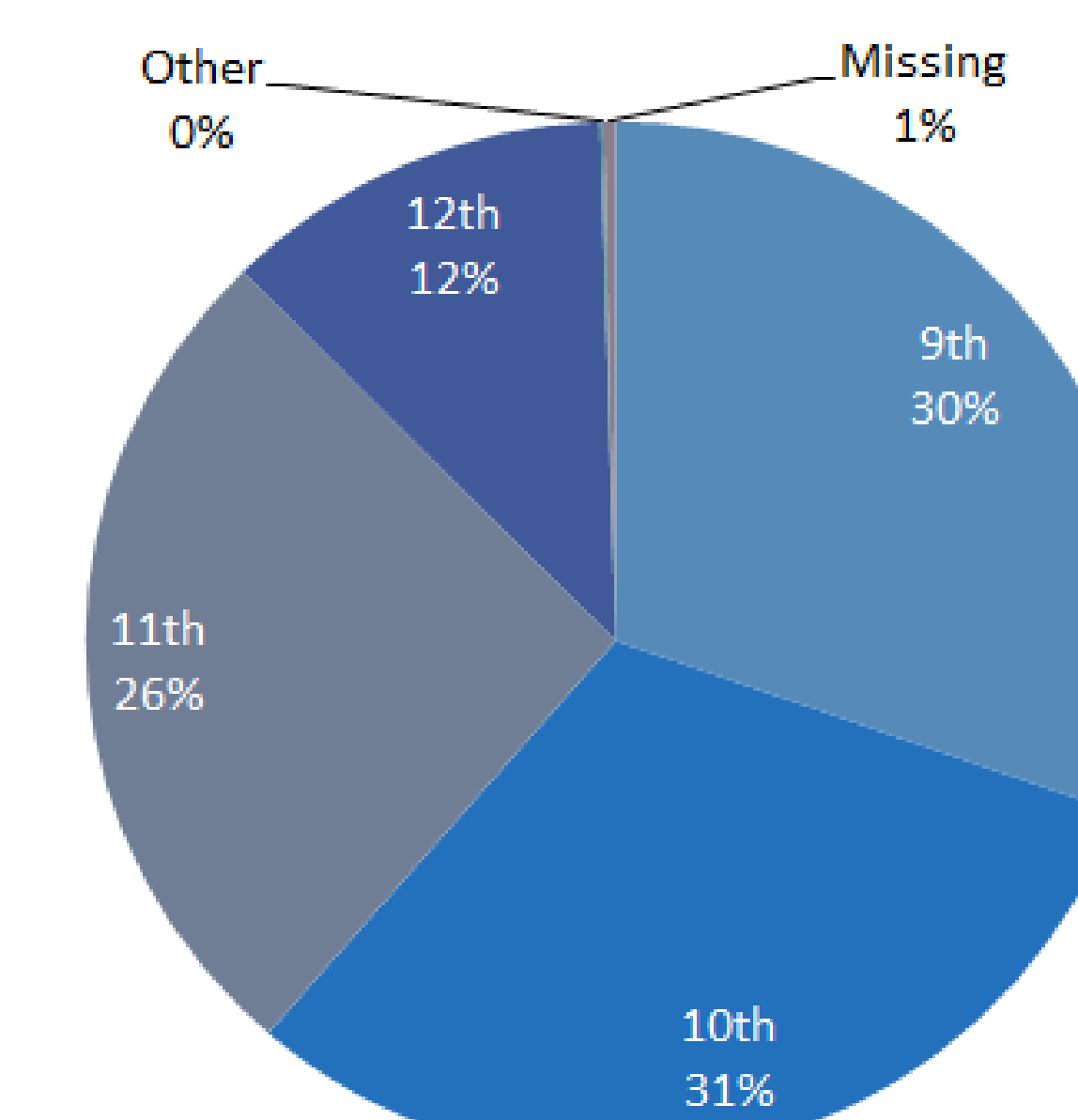


Figure 4. Grade Level

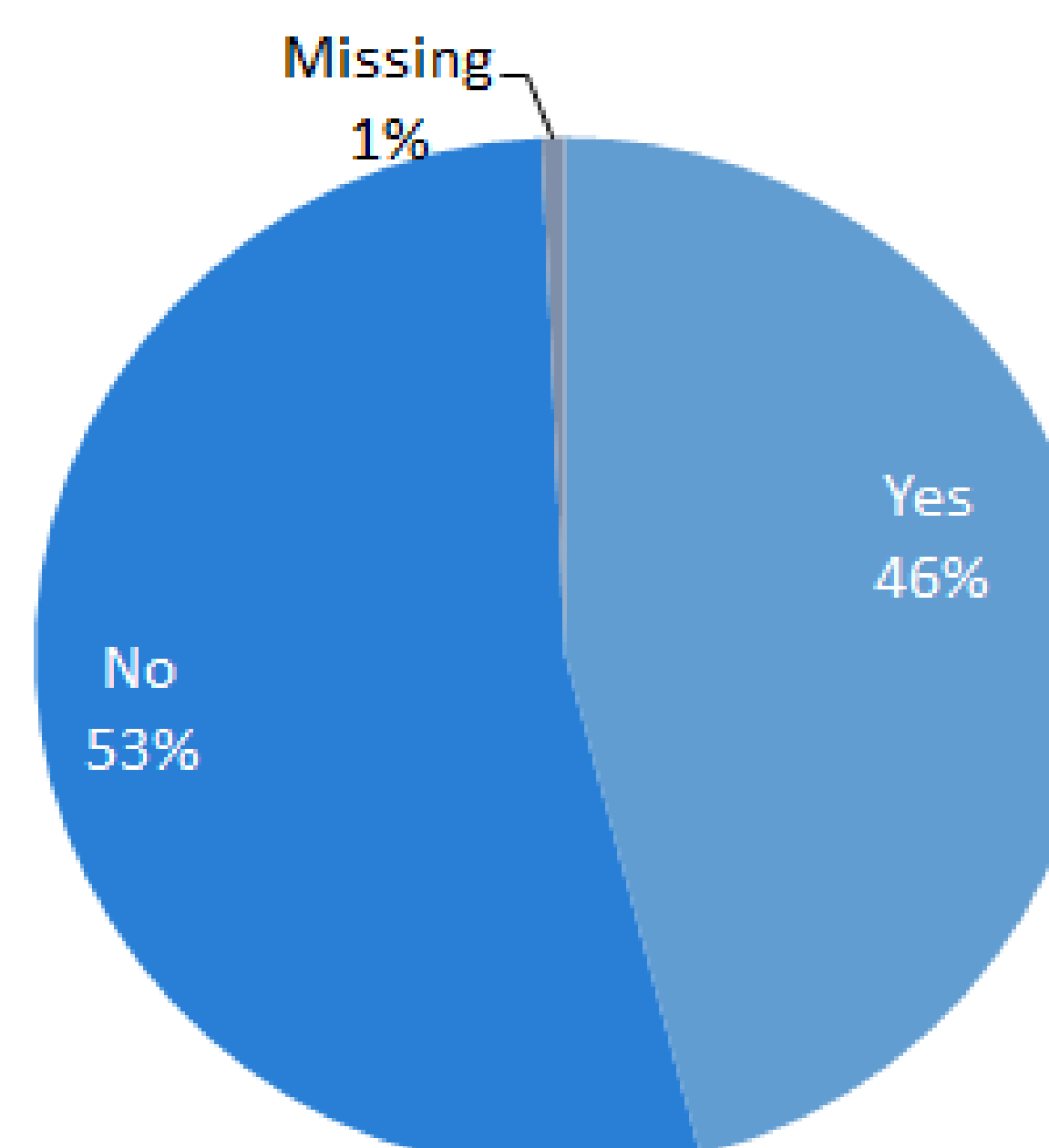


Figure 5. Ever Electronic Cigarette Use

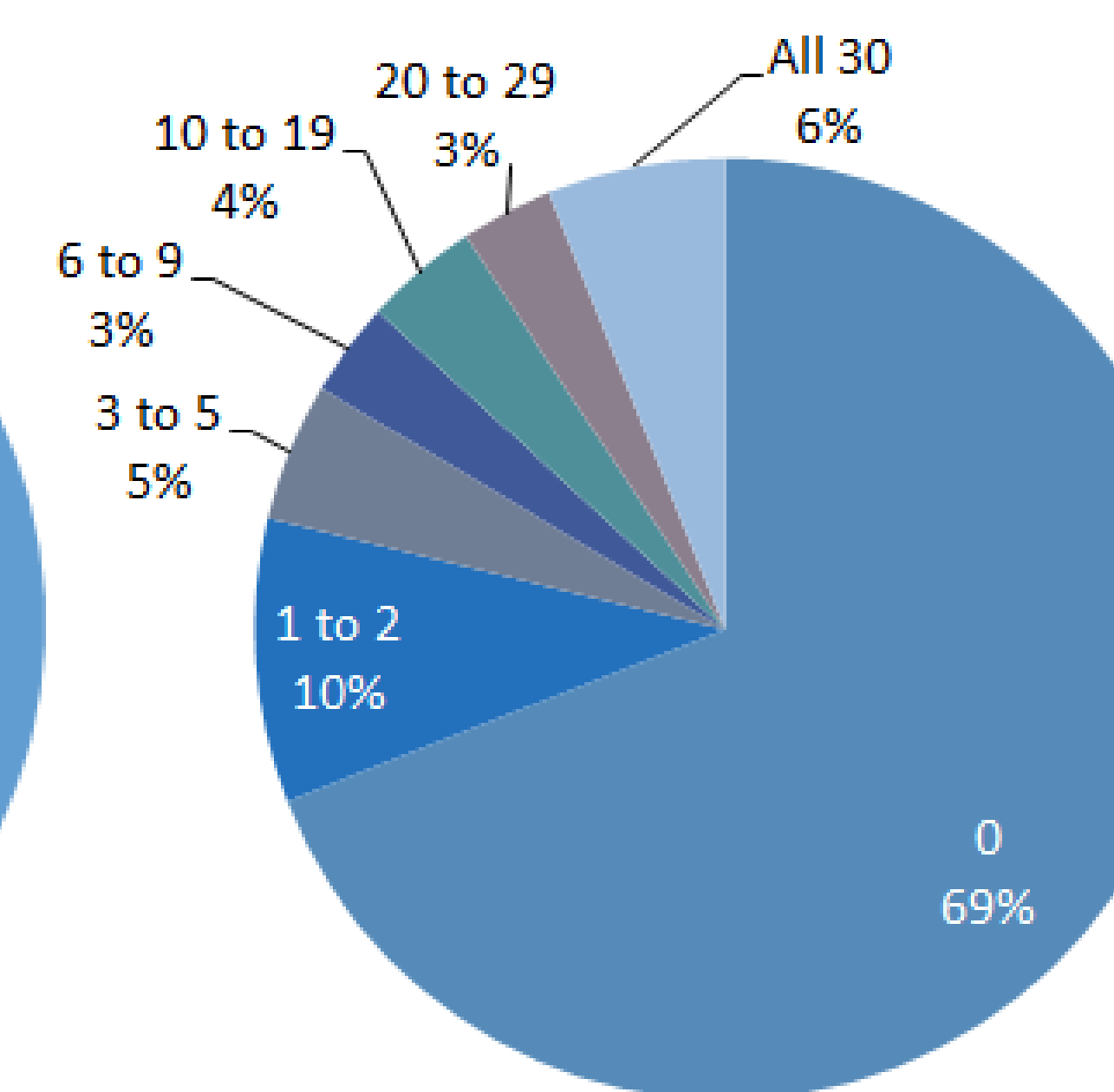


Figure 6. Current Electronic Cigarette Use (1-30 days)

RESULTS (CONT.)

Table 1. Results of Chi-square Analysis Assessing the Relationship between Smoking Status and Feelings and Behaviors Toward Suicide

	E-cig users (n=3,459)	Non-E-Cig-Users (n=7,713)	p-value
Feeling sad or helpless			
Yes	1,636 (47.3%)	2,355 (30.6%)	p<0.001*
No	1,764 (50.7%)	5,269 (68.4%)	
Considered attempting suicide			
Yes	955 (27.6%)	1,180 (15.3%)	p<0.001*
No	2,447 (70.4%)	6,454 (83.7%)	
Made a suicide plan			
Yes	789 (22.8%)	968 (12.6%)	p<0.001*
No	2,598 (75.2%)	6,670 (86.7%)	
Attempted suicide			
Yes	416 (12.2%)	413 (5.3%)	p<0.001*
No	2,280 (65.8%)	5,518 (71.1%)	
Had an injurious suicide attempt			
Yes	102 (2.9%)	68 (0.9%)	p<0.001*
No	227 (65.8%)	255 (3.3%)	

* p < 0.05 considered significant

CONCLUSIONS

- This study found that electronic cigarette users were more likely to report suicide-related feelings and behaviors, compared to nonusers.
- These results should inform targeted prevention and cessation interventions to discourage electronic cigarette use and address mental health among adolescents.
- Further, longitudinal studies remain important to better understand electronic cigarette use and its long-term influence on mental health.

References:

- Office of the Surgeon General. (2020). Smoking Cessation: A Report of the Surgeon General. U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General.
- Dunbar, M. S., Tucker, J. S., Ewing, B. A., Pedersen, E. R., Miles, J. N., Shih, R. A., & D'Amico, E. J. (2017). Frequency of E-cigarette Use, Health Status, and Risk and Protective Health Behaviors in Adolescents. *Journal of Addiction Medicine*, 11(1), 55–62.
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- Ivey-Stephenson, A. Z., Demissie, Z., Crosby, A. E., Stone, D. M., Gaylor, E., Wilkins, N., Lowry, R., & Brown, M. (2020). Suicidal Ideation and Behaviors Among High School Students—Youth Risk Behavior Survey, United States, 2019. *MMWR Supplements*, 69(1), 47–55.
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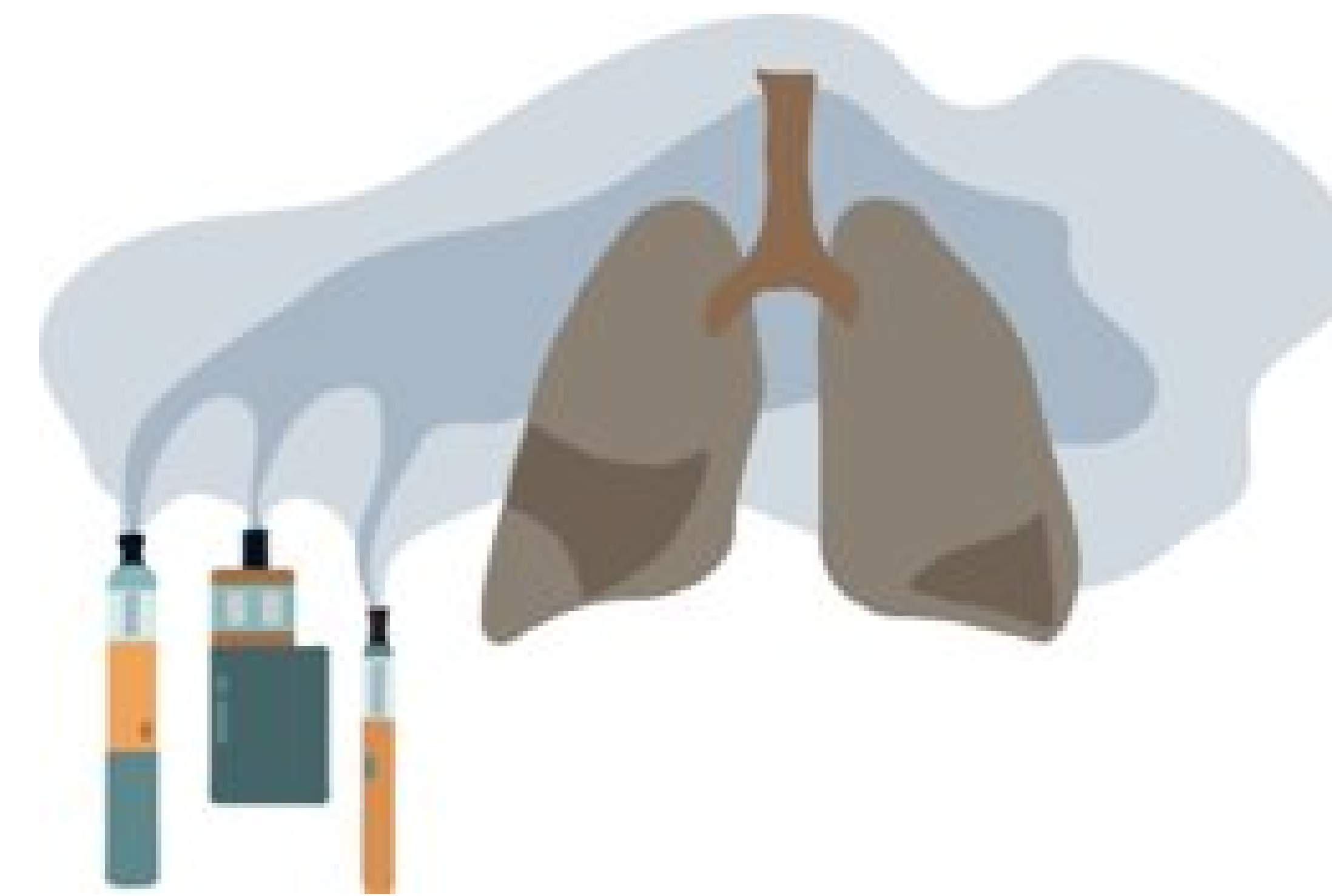


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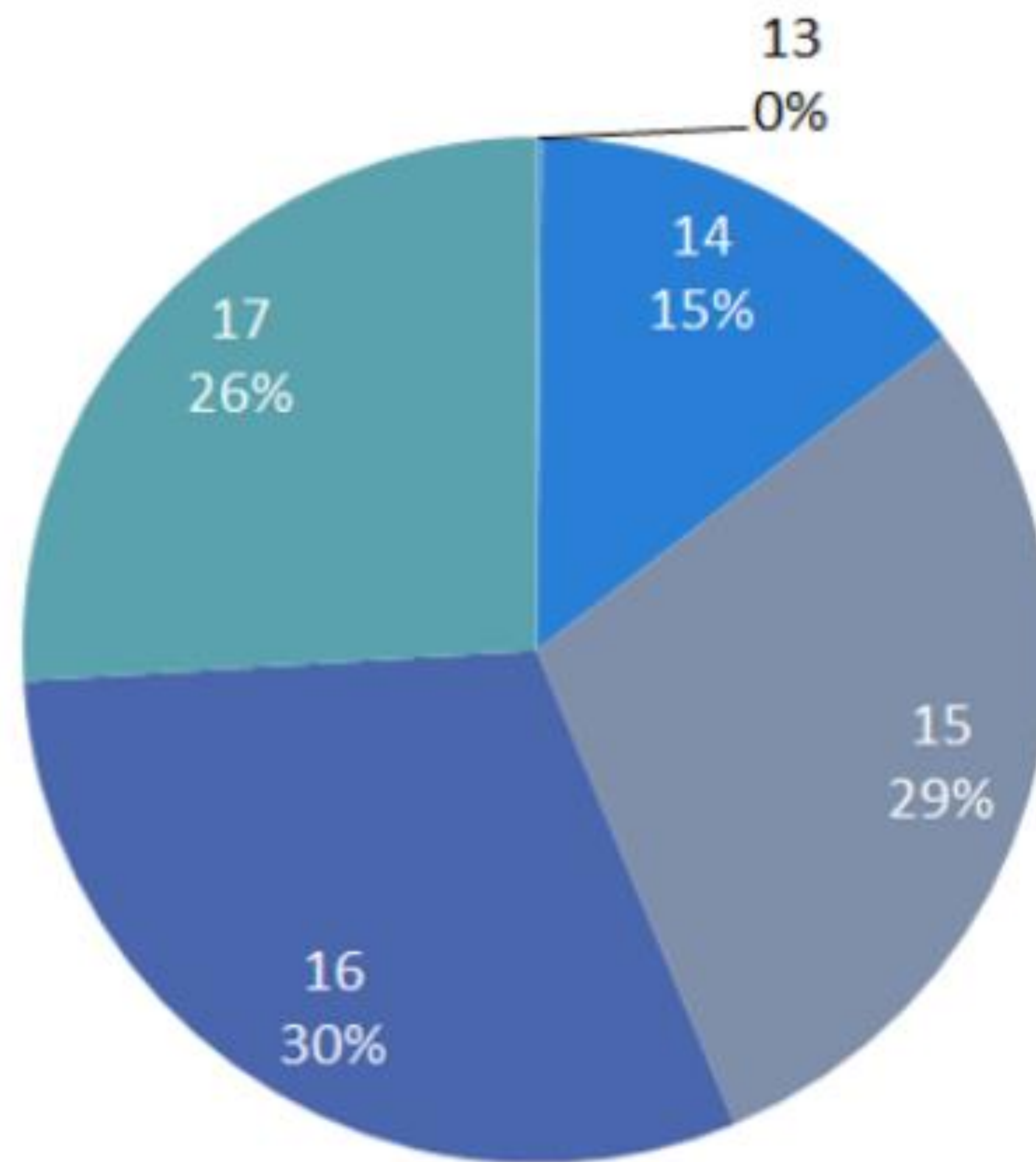


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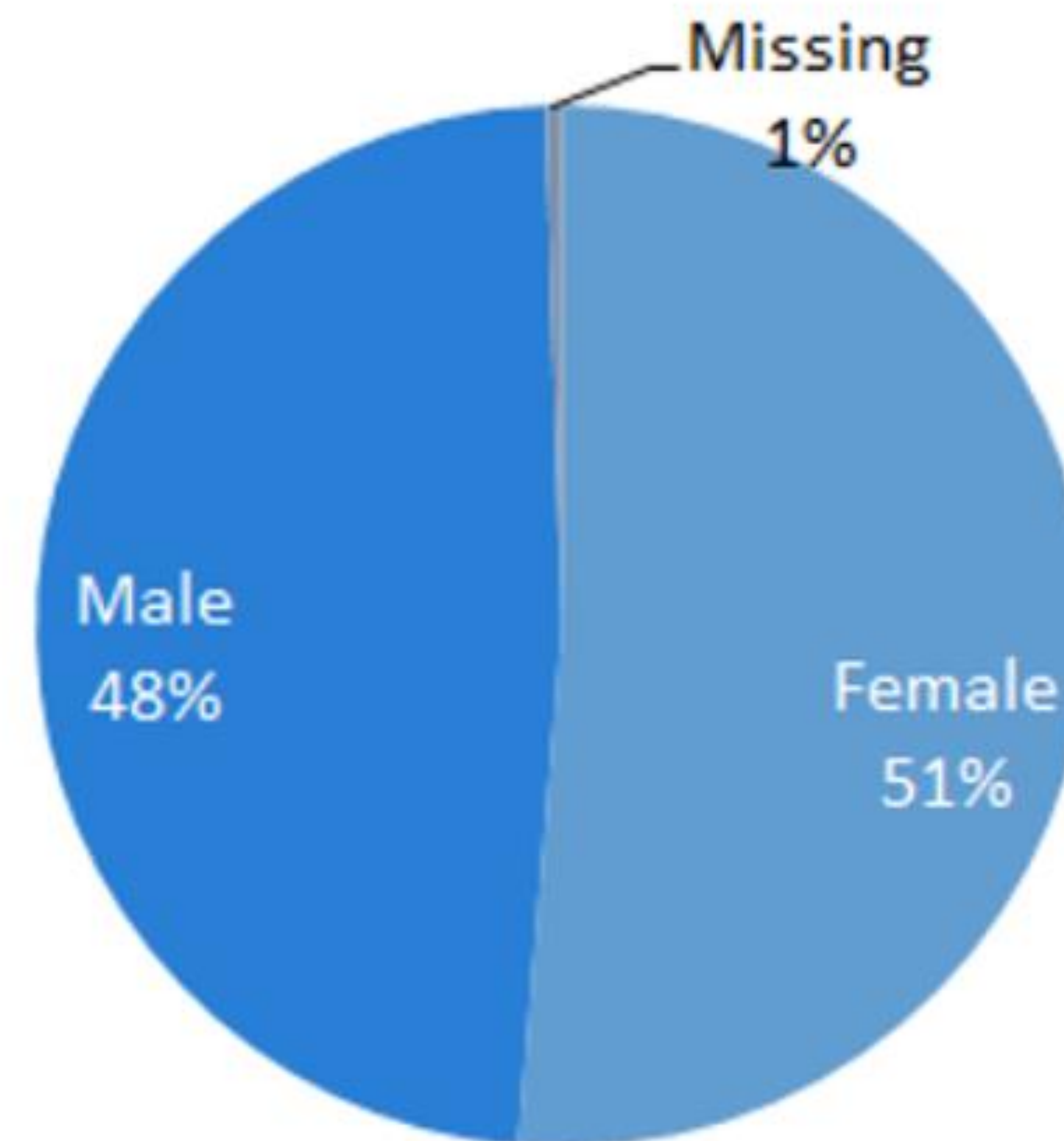


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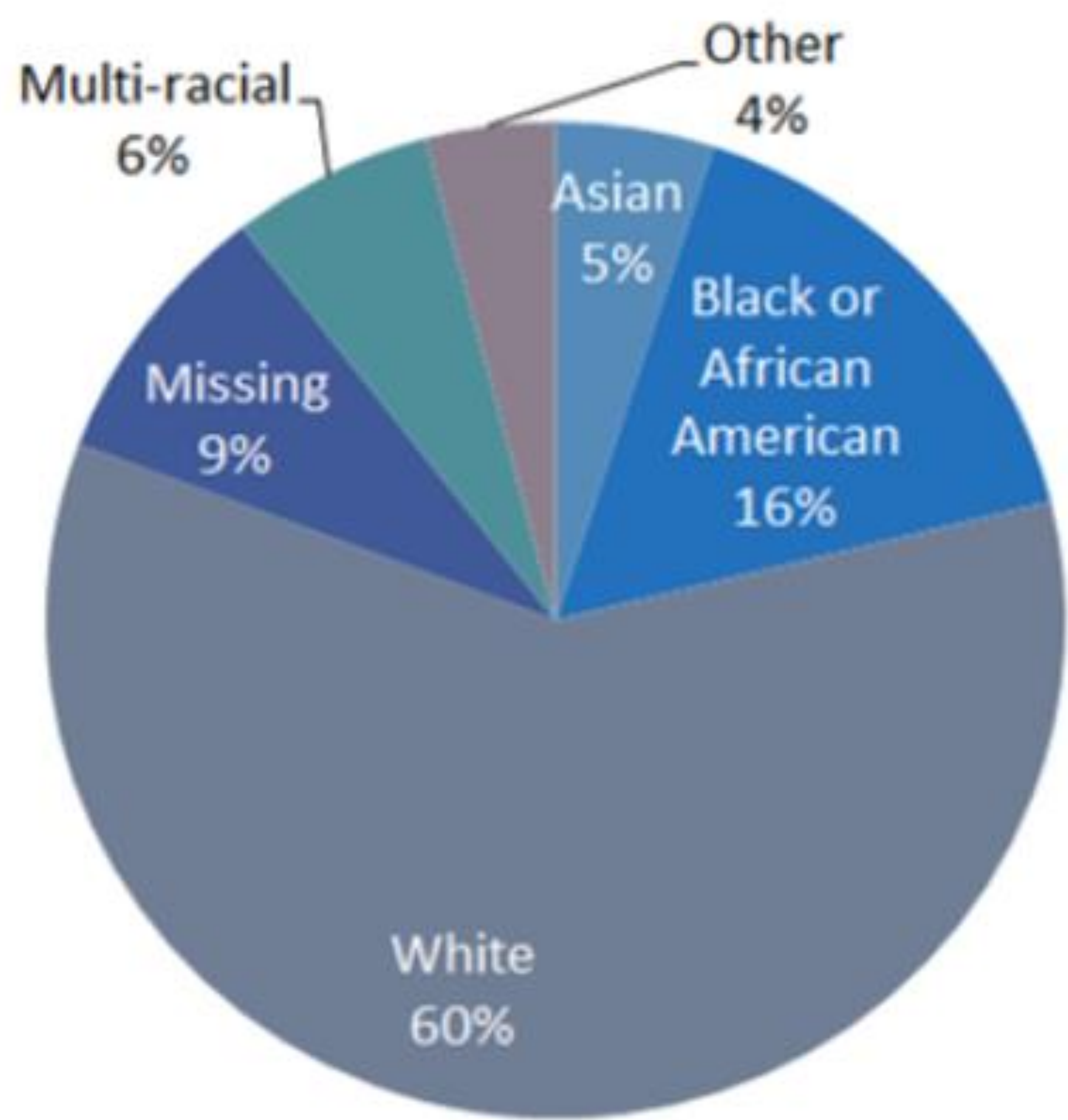


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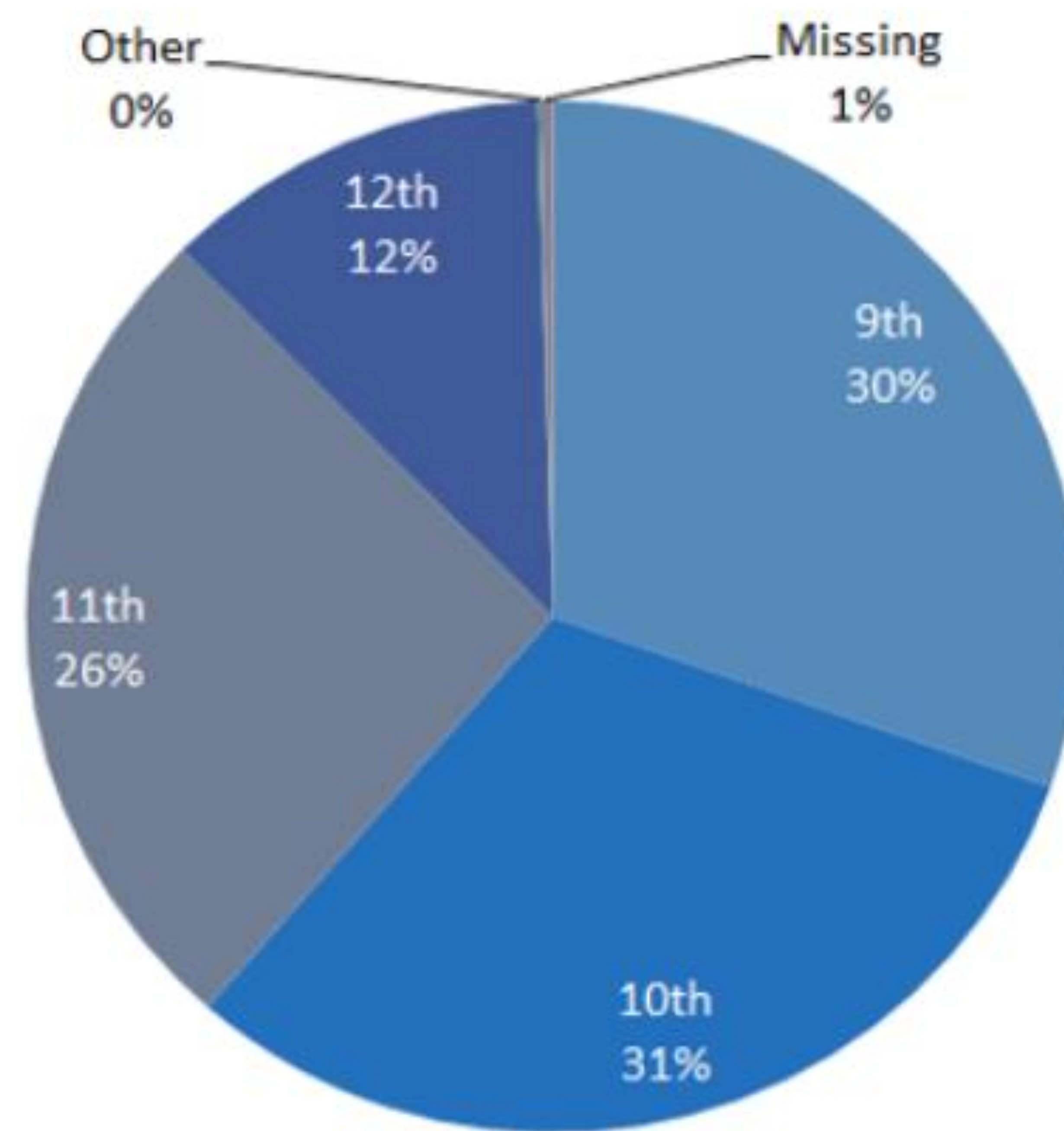


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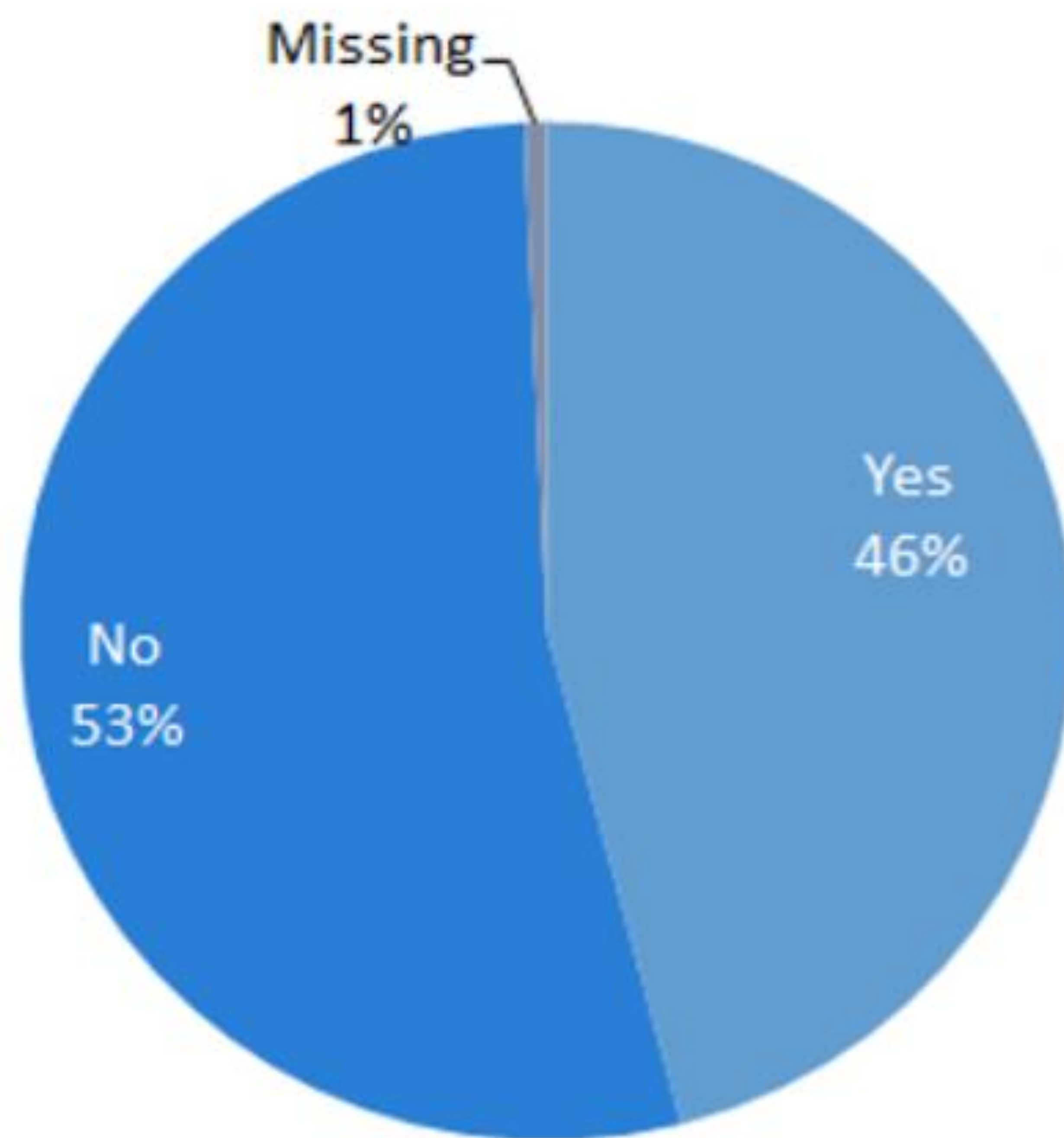


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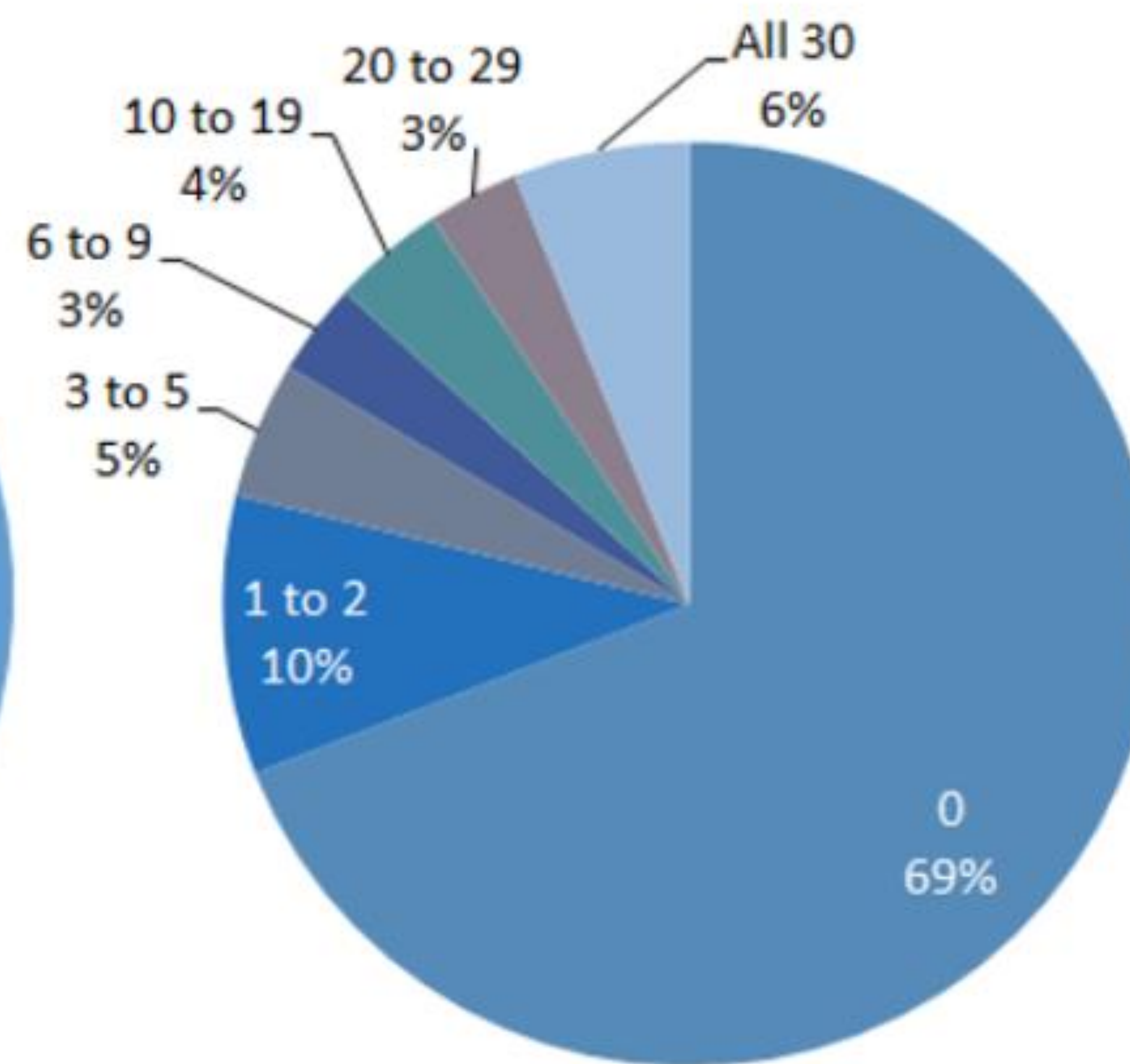


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