

Pattern of Smoking across different Sub-population

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To produce this report, The “tidyverse”, “survey”, “gridExtra”, “knitr” packages should be installed. Please run the following code in R or Rstudio;

```
installed_pkgs <- row.names(installed.packages())
pkgs <- c("dplyr", "gridExtra", "survey", "knitr")

for(p in pkgs){
  if(!(p %in% installed_pkgs)){
    install.packages(p, repos = "http://cran.us.r-project.org")
  }
}
```

Building the survey design using survey weights

I created the survey design as specified by the summary documentation provided by the National Health Survey Interview Statistics. This document can be found at the NHIS website.

```
nhis19_design <- svydesign(id=~PPSU, strata= ~PSTRAT, nest = TRUE,
                          weights = ~WTFA_A, data = nhis19)
summary(nhis19_design)
```

Descriptive Statistics

General Cigarette Smoking

Table 1: Smoking Prevalence in the United States

Type of Product	Prevalence (%)
Cigarette	14.0
Smokeless Tobacco	4.5
Cigar	3.6
Pipe	1.0
Smokeless tobacco	2.4

Smoking by Age

Table 2: Table Showing Prevalence of Smoking by Age and Type of Product

-	Type of Product	Prevalence (%)
18-29	Cigarette	12.1
30-49	Cigarette	16.5
50+	Cigarette	13.0
18-29	E-cigarette	8.8
30-49	E-cigarette	5.4
50+	E-cigarette	1.8
18-29	Cigar	4.2
30-49	Cigar	4.1
50+	Cigar	2.9
18-29	Pipe	1.9
30-49	Pipe	0.9
50+	Pipe	0.6
18-29	Smokeless tobacco	2.8
30-49	Smokeless tobacco	3.1
50+	Smokeless tobacco	1.8

Smoking Prevalence by Gender

Table 3: Table Showing Prevalence of Smoking by Sex and Type of Product

-	Type of Product	Prevalence (%)
female	Cigarette	12.7
male	Cigarette	15.3
female	E-cigarette	3.5
male	E-cigarette	5.5
female	Cigar	1.1
male	Cigar	6.3
female	Pipe	0.5
male	Pipe	1.5
female	Smokeless tobacco	0.3
male	Smokeless tobacco	4.7

Smoking by Race/Ethnicity

Table 4: Smoking Prevalence by Race and type of Smoke

-	Type of Product	Prevalence (%)
AIAN	Cigarette	18.2
AIAN and other	Cigarette	26.7
Asian	Cigarette	7.2
Black/African American	Cigarette	14.8
Other single/multiple	Cigarette	16.5

-	Type of Product	Prevalence (%)
White	Cigarette	14.6
AIAN	E-cigarette	3.7
AIAN and other	E-cigarette	8.4
Asian	E-cigarette	2.7
Black/African American	E-cigarette	3.4
Other single/multiple	E-cigarette	9.8
White	E-cigarette	4.8
AIAN	Cigar	2.9
AIAN and other	Cigar	5.4
Asian	Cigar	1.2
Black/African American	Cigar	4.4
Other single/multiple	Cigar	1.6
White	Cigar	3.7
AIAN	Pipe	0.6
AIAN and other	Pipe	2.0
Asian	Pipe	0.9
Black/African American	Pipe	1.0
Other single/multiple	Pipe	4.1
White	Pipe	1.0
AIAN	Smokeless tobacco	4.4
AIAN and other	Smokeless tobacco	2.2
Asian	Smokeless tobacco	0.7
Black/African American	Smokeless tobacco	0.5
Other single/multiple	Smokeless tobacco	1.5
White	Smokeless tobacco	3.0

Smoking by Education

Table 5: Smoking Prevalence by Education and type of Smoke

-	Type of Product	Prevalence (%)
<College Grad	Cigarette	14.1
<HS Grad	Cigarette	22.9
College Grad+	Cigarette	5.7
HS Grad	Cigarette	18.3
<College Grad	E-cigarette	5.8
<HS Grad	E-cigarette	4.1
College Grad+	E-cigarette	2.6
HS Grad	E-cigarette	5.1
<College Grad	Cigar	3.7
<HS Grad	Cigar	3.4
College Grad+	Cigar	3.3
HS Grad	Cigar	3.8
<College Grad	Pipe	1.1
<HS Grad	Pipe	1.2
College Grad+	Pipe	0.8
HS Grad	Pipe	0.9
<College Grad	Smokeless tobacco	2.4
<HS Grad	Smokeless tobacco	3.1
College Grad+	Smokeless tobacco	1.3

-	Type of Product	Prevalence (%)
HS Grad	Smokeless tobacco	3.4

Smoking by Income Relative to Federal Poverty Level

Table 6: Smoking Prevalence by Ratio of Family Income to Federal Poverty Level

-	Type of Product	Prevalence (%)
<100%	Cigarette	22.6
>400%	Cigarette	8.1
100 - 200 %	Cigarette	19.9
200 - 400 %	Cigarette	14.8
<100%	E-cigarette	5.3
>400%	E-cigarette	3.9
100 - 200 %	E-cigarette	4.4
200 - 400 %	E-cigarette	4.8
<100%	Cigar	3.5
>400%	Cigar	4.1
100 - 200 %	Cigar	3.4
200 - 400 %	Cigar	3.1
<100%	Pipe	1.1
>400%	Pipe	0.8
100 - 200 %	Pipe	1.2
200 - 400 %	Pipe	1.0
<100%	Smokeless tobacco	2.1
>400%	Smokeless tobacco	2.6
100 - 200 %	Smokeless tobacco	2.0
200 - 400 %	Smokeless tobacco	2.5

Smoking by Sexual Orientation

Table 7: Smoking Prevalence by Sexual Orientation

-	Type of Product	Prevalence (%)
Bisexual	Cigarette	20.5
Don't know the answer	Cigarette	13.5
Gay/Lesbian	Cigarette	17.9
Something else	Cigarette	16.4
Straight	Cigarette	13.8
Bisexual	E-cigarette	16.2
Don't know the answer	E-cigarette	3.4
Gay/Lesbian	E-cigarette	6.4
Something else	E-cigarette	13.0
Straight	E-cigarette	4.2
Bisexual	Cigar	4.9
Don't know the answer	Cigar	3.8
Gay/Lesbian	Cigar	4.3
Something else	Cigar	2.7

-	Type of Product	Prevalence (%)
Straight	Cigar	3.6
Bisexual	Pipe	4.0
Don't know the answer	Pipe	1.1
Gay/Lesbian	Pipe	0.5
Something else	Pipe	1.0
Straight	Pipe	0.9
Bisexual	Smokeless tobacco	1.0
Don't know the answer	Smokeless tobacco	0.2
Gay/Lesbian	Smokeless tobacco	0.7
Something else	Smokeless tobacco	3.3
Straight	Smokeless tobacco	2.5

Smoking by Mental Health status

Table 8: Prevalence of Smoking among people with Mental health Problems

Mental Health	Type of Product	Prevalence (%)
Depression	Cigarette	22.9
Anxiety	Cigarette	23.6
Dementia	Cigarette	9.6
Depression	E-cigarette	8.1
Anxiety	E-cigarette	8.6
Dementia	E-cigarette	0.6
Depression	Pipe	1.3
Anxiety	Pipe	1.3
Dementia	Pipe	0.1
Depression	Cigar	3.8
Anxiety	Cigar	3.9
Dementia	Cigar	3.0
Depression	Smokeless Tobacco	2.3
Anxiety	Smokeless Tobacco	2.8
Dementia	Smokeless Tobacco	1.9

Dual Smoking Status (Cigarette and other Products)

Table 9: Dual Prevalence of Cigarette and E-cigarette

binmed_age	Prevalence of cigarette	Prevalence of E-cigarette	Dual prevalence cigarette and e-cig
18-29	12.1	8.8	2.7
30-49	16.5	5.4	2.1
50+	13.0	1.8	0.8

Table 10: Dual Prevalence of Cigarette and Cigar

binmed_age	Prevalence of cigarette	Prevalence of Cigar	Dual prevalence cigarette and cigar
18-29	12.1	4.2	1.5
30-49	16.5	4.1	1.4
50+	13.0	2.9	1.0

Table 11: Dual Prevalence of Cigarette and Pipe

binmed_age	Prevalence of cigarette	Prevalence of Pipe	Dual prevalence cigarette and pipe
18-29	12.1	1.9	0.9
30-49	16.5	0.9	0.4
50+	13.0	0.6	0.2

Table 12: Dual Prevalence of Cigarette and Smokeless Tobacco

binmed_age	Prevalence of cigarette	Prevalence of Smokeless Tobacco	Dual prevalence cigarette and smokeless tobacco
18-29	12.1	2.8	0.8
30-49	16.5	3.1	0.7
50+	13.0	1.8	0.2