Meher Shrishti Nigam - 20BRS1193

Foundations Of Data Analytics

Lab 6 - Statistical Analysis of Qualitative Data

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# Lab 6
# L7+L8
# Meher Shrishti Nigam
# CSE AI + Robotics
# 20BRS1193

# LAB 6 Statistical Analysis of Qualitative Data


# 1. Import the pacakge MASS
library(MASS);
data(survey);
survey

# 2. List the rows of data that has missing values
new_DF <- survey[rowSums(is.na(survey)) > 0,]
new_DF

# 3. Create a data frame 'newsurvey' that contains the survey data
after removing the na values. Use it for answering further queries
newsurvey <- survey[rowSums(is.na(survey)) <= 0,]
newsurvey

# 4. How many male and female students participated in the survey?
sum(newsurvey$Sex=='Female')
sum(newsurvey$Sex=='Male')

# 5. How many left and right handers are there?
sum(newsurvey$W.Hnd=='Left')
sum(newsurvey$W.Hnd=='Right')

# 6. Find the relative frequency distribution of left and right
handers and display them with the precision of two decimal places.
rfd_handedness <-
round(table(newsurvey$W.Hnd)/length(newsurvey$W.Hnd), 2)
rfd_handedness
```

```r
# 7. Display the male left hander and female left hander in the column format
install.packages("dplyr")
newsurvey = data.frame(newsurvey)
newsurvey
library(dplyr)
filter(newsurvey, Sex == 'Male', W.Hnd == 'Left')
filter(newsurvey, Sex == 'Female', W.Hnd == 'Left')

# 8. What percentage of male left handers never smokes?
Male_Left_SmokeYes <- filter(newsurvey, Sex == 'Male', W.Hnd == 'Left', Smoke != 'Never')
Male_Left_SmokeNo <- filter(newsurvey, Sex == 'Male', W.Hnd == 'Left', Smoke == 'Never')
```

OUTPUT:

> # 1. Import the pacakge MASS

> library(MASS);

> data(survey);

> survey

Sex Wr.Hnd NW.Hnd W.Hnd Fold Pulse Clap Exer Smoke Height M.I Age

1 Female 18.5 18.0 Right R on L 92 Left Some Never 173.00 Metric 18.250

2 Male 19.5 20.5 Left R on L 104 Left None Regul 177.80 Imperial 17.583

3 Male 18.0 13.3 Right L on R 87 Neither None Occas NA <NA> 16.917

4 Male 18.8 18.9 Right R on L NA Neither None Never 160.00 Metric 20.333

5 Male 20.0 20.0 Right Neither 35 Right Some Never 165.00 Metric 23.667

6 Female 18.0 17.7 Right L on R 64 Right Some Never 172.72 Imperial 21.000

7 Male 17.7 17.7 Right L on R 83 Right Freq Never 182.88 Imperial 18.833

8 Female 17.0 17.3 Right R on L 74 Right Freq Never 157.00 Metric 35.833

9 Male 20.0 19.5 Right R on L 72 Right Some Never 175.00 Metric 19.000

10 Male 18.5 18.5 Right R on L 90 Right Some Never 167.00 Metric 22.333

11 Female 17.0 17.2 Right L on R 80 Right Freq Never 156.20 Imperial 28.500

12 Male 21.0 21.0 Right R on L 68 Left Freq Never NA <NA> 18.250

13 Female 16.0 16.0 Right L on R NA Right Some Never 155.00 Metric 18.750

14 Female 19.5 20.2 Right L on R 66 Neither Some Never 155.00 Metric 17.500

15 Male 16.0 15.5 Right R on L 60 Right Some Never NA <NA> 17.167

…

[reached 'max' / getOption("max.print") -- omitted 154 rows]

> # 2. List the rows of data that has missing values

> new_DF <- survey[rowSums(is.na(survey)) > 0,]

> new_DF

Sex Wr.Hnd NW.Hnd W.Hnd Fold Pulse Clap Exer Smoke Height M.I Age

3 Male 18.0 13.3 Right L on R 87 Neither None Occas NA <NA> 16.917

4 Male 18.8 18.9 Right R on L NA Neither None Never 160.00 Metric 20.333

12 Male 21.0 21.0 Right R on L 68 Left Freq Never NA <NA> 18.250

13 Female 16.0 16.0 Right L on R NA Right Some Never 155.00 Metric 18.750

15 Male 16.0 15.5 Right R on L 60 Right Some Never NA <NA> 17.167

16 Female 17.5 17.0 Right R on L NA Right Freq Never 156.00 Metric 17.167

19 Male 20.5 20.5 Right L on R NA Left Some Never 190.50 Imperial 19.750

25 Female 17.0 17.5 Right R on L 64 Left Some Never NA <NA> 19.167

26 Male 18.5 18.5 Right Neither 90 Neither Some Never NA <NA> 17.583

29 Male 17.8 17.8 Right L on R 76 Neither Freq Never NA <NA> 21.917

31 Female 18.5 18.0 Right R on L 76 Right None Occas NA <NA> 41.583

35 Male 18.0 19.0 Right L on R 54 Neither Some Regul NA <NA> 17.750

37 Female 16.0 16.5 Right L on R NA Right Some Never 168.00 Metric 19.000

40 Male 19.0 19.0 Right R on L NA Neither Freq Occas 171.00 Metric 19.917

41 Female 17.5 16.0 Right L on R NA Right Some Never 169.00 Metric 17.500

43 Male NA NA Right R on L 60 <NA> Some Never 172.00 Metric 28.583

45 Female 13.0 13.0 <NA> L on R 70 Left Freq Never 180.34 Imperial 17.417

46 Male 17.0 17.5 Right R on L NA Neither Freq Never 180.34 Imperial 18.500

56 Male 18.5 18.5 Right L on R NA Neither Freq Never 171.00 Metric 18.333

58 Male 19.5 19.7 Right R on L 72 Right Freq Never NA <NA> 17.417

60 Male 20.6 21.0 Left L on R NA Left Freq Occas 175.26 Imperial 18.417

64 Female 18.7 18.0 Left L on R NA Left None Never 170.00 Metric 19.833

66 Male 19.5 19.8 Right Neither NA Right Freq Never 183.00 Metric 18.000

67 Female 19.0 19.1 Right L on R NA Neither Freq Never 172.00 Metric 30.667

68 Female 18.5 18.0 Right R on L 64 Right Freq Never NA <NA> 16.917

69 Male 19.0 19.0 Right L on R NA Right Some Never 180.00 Metric 19.917

70 Male 21.0 19.5 Right L on R 80 Left None <NA> NA <NA> 18.333

72 Male 19.4 19.5 Right R on L NA Right Freq Heavy 176.00 Metric 17.833

78 Female 18.6 18.0 Right L on R NA Neither Freq Heavy 165.10 Imperial 17.167

80 Male 20.0 20.5 Right L on R NA Right Freq Never 185.42 Imperial 18.750

81 Male 19.5 19.5 Left R on L 66 Left Some Never NA <NA> 16.750

83 Female 17.5 17.5 Right R on L 98 Left Freq Never NA <NA> 17.667

84 Female 17.0 17.4 Right R on L NA Neither Some Never NA <NA> 17.167

90 Female 18.0 17.7 Left R on L 92 Left Some Never NA <NA> 17.583

92 Female 17.5 18.0 Right Neither NA Right Some Never NA <NA> 18.000

94 Female 18.2 18.5 Right R on L NA Right Some Never 168.00 Metric 17.083

96 Female 19.0 18.8 Right L on R NA Right Some Never NA <NA> 17.083

99 Male 19.5 19.4 Right Neither NA Right Freq Never 165.00 Metric 18.083

101 Male 21.9 22.2 Right R on L NA Right Some Never 187.00 Metric 18.917

103 Female 16.0 16.0 Right Neither NA Right Some Never 159.00 Metric 20.833

107 Female 16.2 16.4 Right R on L NA Right Freq Occas 172.00 Metric 17.000

108 Female 17.0 15.9 Right R on L 85 Right Freq Never NA <NA> 18.500

121 Male 20.0 20.0 Right R on L 80 Neither Freq Occas NA <NA> 17.500

126 Male 19.3 19.4 Right R on L NA Right Freq Never 180.34 Imperial 19.833

133 Female 18.9 20.0 Right R on L 86 Right Some Never NA <NA> 19.083

137 <NA> 19.8 19.0 Left L on R 73 Neither Freq Never 172.00 Metric 21.500

139 Male 20.0 19.5 Right L on R NA Right Freq Never 170.00 Metric 21.417

142 Female 18.3 19.0 Right R on L NA Right None Never 165.00 Metric 21.083

157 Male 14.0 15.5 Right L on R NA Neither Freq Heavy NA <NA> 21.083

159 Male 20.0 20.5 Right R on L NA Right None Never 187.96 Imperial 19.667

162 Male 18.1 18.2 Left Neither NA Right Some Never 168.00 Metric 21.167

165 Male 19.1 19.1 Right Neither NA Right Some Never 177.00 Metric 19.917

169 Male 19.0 18.5 Right L on R NA Neither Freq Never 189.00 Metric 17.417

171 Female 16.5 17.0 Right L on R NA Right Some Never 168.00 Metric 73.000

173 Female 15.5 15.5 Right Neither 50 Right Some Regul NA <NA> 18.500

179 Female 20.5 20.5 Right R on L NA Left Freq Regul NA <NA> 19.250

195 Female 16.7 15.1 Right Neither NA Right None Never 157.48 Imperial 18.167

203 Female 18.8 17.8 Right R on L 76 Right Some Never NA <NA> 18.583

210 Female 20.8 20.7 Right R on L NA Neither Freq Never 171.50 Metric 18.500

213 Male 18.0 18.5 Right R on L 78 Right Freq Never NA <NA> 17.500

216 Male 19.5 20.0 Right Neither NA Right Some Never 170.00 Metric 21.250

217 Female 16.3 16.2 Right L on R NA Right None Never NA <NA> 19.250

219 Female 17.0 17.3 Right L on R NA Neither Freq Never 173.00 Metric 19.167

221 Male 23.2 23.3 Right L on R NA Right None Heavy 171.00 Metric 20.917

224 Female 17.5 17.6 Right L on R NA Right Freq Never 150.00 Metric 20.750

225 Female 17.6 17.2 Right L on R NA Right Some Never NA <NA> 19.917

226 Female 17.5 17.8 Right R on L 96 Right Some Never NA <NA> 18.667

232 Male 18.0 16.0 Right R on L NA Right Some Never 180.34 Imperial 20.750

235 Female 17.5 16.5 Right R on L NA Right Some Never 170.00 Metric 18.583

> # 3. Create a data frame 'newsurvey' that contains the survey data after removing the na values. Use it for answering further queries

> newsurvey <- survey[rowSums(is.na(survey)) <= 0,]

> newsurvey

Sex Wr.Hnd NW.Hnd W.Hnd Fold Pulse Clap Exer Smoke Height M.I Age

1 Female 18.5 18.0 Right R on L 92 Left Some Never 173.00 Metric 18.250

2 Male 19.5 20.5 Left R on L 104 Left None Regul 177.80 Imperial 17.583

5 Male 20.0 20.0 Right Neither 35 Right Some Never 165.00 Metric 23.667

6 Female 18.0 17.7 Right L on R 64 Right Some Never 172.72 Imperial 21.000

7 Male 17.7 17.7 Right L on R 83 Right Freq Never 182.88 Imperial 18.833

8 Female 17.0 17.3 Right R on L 74 Right Freq Never 157.00 Metric 35.833

9 Male 20.0 19.5 Right R on L 72 Right Some Never 175.00 Metric 19.000

10 Male 18.5 18.5 Right R on L 90 Right Some Never 167.00 Metric 22.333

11 Female 17.0 17.2 Right L on R 80 Right Freq Never 156.20 Imperial 28.500

14 Female 19.5 20.2 Right L on R 66 Neither Some Never 155.00 Metric 17.500

17 Female 18.0 18.0 Right L on R 89 Neither Freq Never 157.00 Metric 19.333

18 Male 19.4 19.2 Left R on L 74 Right Some Never 182.88 Imperial 18.333

20 Male 21.0 20.9 Right R on L 78 Right Freq Never 177.00 Metric 17.917

21 Male 21.5 22.0 Right R on L 72 Left Freq Never 190.50 Imperial 17.917

22 Male 20.1 20.7 Right L on R 72 Right Freq Never 180.34 Imperial 18.167

23 Male 18.5 18.0 Right L on R 64 Right Freq Never 180.34 Imperial 17.833

24 Male 21.5 21.2 Right R on L 62 Right Some Never 184.00 Metric 18.250

27 Male 21.0 20.7 Right R on L 90 Right Some Never 172.72 Imperial 17.500

28 Male 20.8 21.4 Right R on L 62 Neither Freq Never 175.26 Imperial 18.083

30 Male 19.5 19.5 Right L on R 79 Right Some Never 167.00 Metric 19.250

32 Male 18.8 18.2 Right L on R 78 Right Freq Never 180.00 Metric 17.500

33 Female 17.1 17.5 Right R on L 72 Right Freq Heavy 166.40 Imperial 39.750

34 Male 20.1 20.0 Right R on L 70 Right Some Never 180.00 Metric 17.167

36 Male 22.2 21.0 Right L on R 66 Right Freq Occas 190.00 Metric 18.000

38 Male 19.4 18.5 Right R on L 72 Neither Freq Never 182.50 Metric 17.917

39 Male 22.0 22.0 Right R on L 80 Right Some Never 185.00 Metric 35.500

42 Female 17.8 18.0 Right R on L 72 Right Some Never 154.94 Imperial 17.083

44 Female 20.1 20.2 Right L on R 80 Right Some Never 176.50 Imperial 17.500

47 Male 23.2 22.7 Right L on R 84 Left Freq Regul 180.00 Metric 18.917

48 Male 22.5 23.0 Right R on L 96 Right None Never 170.00 Metric 19.417

49 Female 18.0 17.6 Right R on L 60 Right Some Occas 168.00 Metric 18.417

50 Female 18.0 17.9 Right R on L 50 Left None Never 165.00 Metric 30.750

51 Male 22.0 21.5 Left R on L 55 Left Freq Never 200.00 Metric 18.500

52 Male 20.5 20.0 Right L on R 68 Right Freq Never 190.00 Metric 17.500

53 Male 17.0 18.0 Right L on R 78 Left Some Never 170.18 Imperial 18.333

54 Male 20.5 19.5 Right L on R 56 Right Freq Never 179.00 Metric 17.417

55 Male 22.5 22.5 Right R on L 65 Right Freq Regul 182.00 Metric 20.000

57 Female 15.5 15.4 Right R on L 70 Neither None Never 157.48 Imperial 17.167

59 Male 19.5 19.0 Right L on R 62 Right Freq Never 177.80 Imperial 17.667

61 Male 22.8 23.2 Right R on L 66 Neither Freq Never 187.00 Metric 20.333

62 Female 18.5 18.2 Right R on L 72 Neither Freq Never 167.64 Imperial 17.333

63 Female 19.6 19.7 Right L on R 70 Right Freq Never 178.00 Metric 17.500

65 Female 17.3 18.0 Right L on R 64 Neither Freq Never 164.00 Metric 18.583

71 Female 18.0 17.5 Right L on R 64 Left Freq Never 170.00 Metric 17.583

73 Female 17.0 16.6 Right R on L 68 Right Some Never 171.00 Metric 17.667

74 Female 16.5 17.0 Right L on R 40 Left Freq Never 167.64 Imperial 17.417

75 Female 15.6 15.8 Right R on L 88 Left Some Never 165.00 Metric 17.750

76 Female 17.5 17.5 Right Neither 68 Right Freq Heavy 170.00 Metric 20.667

77 Female 17.0 17.6 Right L on R 76 Right Some Never 165.00 Metric 23.583

79 Female 18.3 18.5 Right R on L 68 Neither Some Never 165.10 Imperial 17.083

82 Male 19.2 18.9 Right R on L 76 Right Freq Never 176.50 Imperial 20.167

85 Male 23.0 23.5 Right L on R 90 Right Freq Never 167.64 Imperial 17.167

86 Female 17.7 17.0 Right R on L 76 Right Some Never 167.00 Metric 17.250

87 Female 18.2 18.0 Right L on R 70 Right Some Never 162.56 Imperial 18.000

88 Female 18.3 18.5 Right R on L 75 Left Freq Never 170.00 Metric 18.750

89 Male 18.0 18.0 Right Neither 60 Right Freq Never 179.00 Metric 21.583

91 Male 20.5 20.0 Right R on L 75 Left Some Never 183.00 Metric 19.667

93 Female 18.2 17.5 Right L on R 70 Right Some Never 165.00 Metric 19.667

95 Male 21.3 20.8 Right R on L 65 Right Freq Heavy 179.00 Metric 22.833

97 Male 20.0 19.5 Right R on L 68 Neither Freq Regul 190.00 Metric 19.417

98 Female 17.5 17.5 Right R on L 60 Right Freq Never 166.50 Metric 23.250

100 Female 19.4 19.6 Right R on L 68 Neither Freq Never 175.26 Imperial 19.083

102 Male 18.9 19.1 Right L on R 60 Neither None Never 170.00 Metric 17.750

104 Female 17.5 17.3 Right R on L 72 Right Freq Never 175.00 Metric 20.167

105 Female 17.5 17.0 Right R on L 80 Left Some Heavy 163.00 Metric 17.667

106 Female 19.5 18.5 Right R on L 80 Right Some Never 170.00 Metric 18.250

109 Male 17.5 17.5 Right L on R 64 Neither Freq Never 180.00 Metric 18.583

110 Male 19.7 20.1 Right R on L 67 Left Some Regul 180.34 Imperial 17.750

111 Female 18.5 18.5 Right R on L 76 Left Freq Never 175.00 Metric 24.167

112 Male 19.2 19.6 Right L on R 80 Right None Never 190.50 Imperial 18.167

113 Female 17.2 16.7 Right R on L 75 Right Freq Never 170.18 Imperial 21.167

114 Male 20.5 21.0 Right R on L 60 Right Freq Never 185.00 Metric 17.917

115 Female 16.0 15.5 Right L on R 60 Left Freq Never 162.56 Imperial 17.417

116 Female 16.9 16.0 Right L on R 70 Right None Never 158.00 Metric 20.500

117 Female 17.0 16.7 Right R on L 70 Right Some Never 159.00 Metric 22.917

118 Male 23.0 22.0 Left L on R 83 Left Some Heavy 193.04 Imperial 18.917

119 Female 18.5 18.0 Left L on R 100 Neither Some Never 171.00 Metric 18.917

120 Male 21.0 20.4 Right L on R 100 Right Freq Heavy 184.00 Metric 20.083

122 Male 22.5 22.5 Right L on R 76 Right Freq Occas 177.00 Metric 18.250

123 Female 18.5 18.0 Right R on L 92 Right Freq Never 172.00 Metric 17.500

124 Male 19.8 20.0 Left L on R 59 Right Freq Never 180.00 Metric 17.417

125 Male 18.5 18.1 Right L on R 66 Left Freq Never 175.26 Imperial 21.000

127 Female 16.0 16.0 Right R on L 68 Right Freq Never 172.72 Imperial 17.667

[reached 'max' / getOption("max.print") -- omitted 85 rows]

> # 4. How many male and female students participated in the survey?

> sum(newsurvey$Sex=='Female')

[1] 84

> sum(newsurvey$Sex=='Male')

[1] 84

> # 5. How many left and right handers are there?

> sum(newsurvey$W.Hnd=='Left')

[1] 12

> sum(newsurvey$W.Hnd=='Right')

[1] 156

> # 6. Find the relative frequency distribution of left and right handers and display them with the precision of two decimal places.

> rfd_handedness <-
round(table(newsurvey$W.Hnd)/length(newsurvey$W.Hnd), 2)

> rfd_handedness

Left Right

0.07 0.93

> # 7. Display the male left hander and female left hander in the column format

> install.packages("dplyr")

Error in install.packages : Updating loaded packages

Restarting R session...

> install.packages("dplyr")

Installing package into ‘C:/Users/meher/AppData/Local/R/win-library/4.2’

(as ‘lib’ is unspecified)

trying URL 'https://cran.rstudio.com/bin/windows/contrib/4.2/dplyr_1.0.10.zip'

Content type 'application/zip' length 1300718 bytes (1.2 MB)

downloaded 1.2 MB

package ‘dplyr’ successfully unpacked and MD5 sums checked

The downloaded binary packages are in

C:\Users\meher\AppData\Local\Temp\Rtmps34LuZ\downloaded_packages

> newsurvey <- data.frame(newsurvey)

> newsurvey

Sex Wr.Hnd NW.Hnd W.Hnd Fold Pulse Clap Exer Smoke Height M.I Age

1 Female 18.5 18.0 Right R on L 92 Left Some Never 173.00 Metric 18.250

2 Male 19.5 20.5 Left R on L 104 Left None Regul 177.80 Imperial 17.583

5 Male 20.0 20.0 Right Neither 35 Right Some Never 165.00 Metric 23.667

6 Female 18.0 17.7 Right L on R 64 Right Some Never 172.72 Imperial 21.000

7 Male 17.7 17.7 Right L on R 83 Right Freq Never 182.88 Imperial 18.833

8 Female 17.0 17.3 Right R on L 74 Right Freq Never 157.00 Metric 35.833

9 Male 20.0 19.5 Right R on L 72 Right Some Never 175.00 Metric 19.000

10 Male 18.5 18.5 Right R on L 90 Right Some Never 167.00 Metric 22.333

11 Female 17.0 17.2 Right L on R 80 Right Freq Never 156.20 Imperial 28.500

14 Female 19.5 20.2 Right L on R 66 Neither Some Never 155.00 Metric 17.500

17 Female 18.0 18.0 Right L on R 89 Neither Freq Never 157.00 Metric 19.333

18 Male 19.4 19.2 Left R on L 74 Right Some Never 182.88 Imperial 18.333

20 Male 21.0 20.9 Right R on L 78 Right Freq Never 177.00 Metric 17.917

……

[reached 'max' / getOption("max.print") -- omitted 85 rows]

> library(dplyr)

Attaching package: ‘dplyr’

The following objects are masked from ‘package:stats’:

filter, lag

The following objects are masked from ‘package:base’:

intersect, setdiff, setequal, union

> filter(newsurvey, Sex == 'Male', W.Hnd == 'Left')

Sex Wr.Hnd NW.Hnd W.Hnd Fold Pulse Clap Exer Smoke Height M.I Age

1 Male 19.5 20.5 Left R on L 104 Left None Regul 177.80 Imperial 17.583

2 Male 19.4 19.2 Left R on L 74 Right Some Never 182.88 Imperial 18.333

3 Male 22.0 21.5 Left R on L 55 Left Freq Never 200.00 Metric 18.500

4 Male 23.0 22.0 Left L on R 83 Left Some Heavy 193.04 Imperial 18.917

5 Male 19.8 20.0 Left L on R 59 Right Freq Never 180.00 Metric 17.417

6 Male 20.5 19.5 Left L on R 80 Right Some Occas 182.88 Imperial 18.667

7 Male 17.5 17.0 Left L on R 97 Neither None Never 165.00 Metric 19.500

> filter(newsurvey, Sex == 'Female', W.Hnd == 'Left')

Sex Wr.Hnd NW.Hnd W.Hnd Fold Pulse Clap Exer Smoke Height M.I Age

1 Female 18.5 18.0 Left L on R 100 Neither Some Never 171.00 Metric 18.917

2 Female 15.4 16.4 Left L on R 80 Left Freq Occas 160.02 Imperial 18.500

3 Female 20.0 19.5 Left R on L 68 Neither Freq Never 172.00 Metric 19.167

4 Female 19.0 18.5 Left L on R 104 Left Freq Never 170.00 Metric 17.250

5 Female 17.5 17.5 Left R on L 83 Neither Some Never 163.00 Metric 17.250

> # 8. What percentage of male left handers never smokes?

> Male_Left_SmokeYes <- filter(newsurvey, Sex == 'Male', W.Hnd == 'Left', Smoke != 'Never')

> Male_Left_SmokeNo <- filter(newsurvey, Sex == 'Male', W.Hnd == 'Left', Smoke == 'Never')

> Male_Left_SmokeYes

Sex Wr.Hnd NW.Hnd W.Hnd Fold Pulse Clap Exer Smoke Height M.I Age

1 Male 19.5 20.5 Left R on L 104 Left None Regul 177.80 Imperial 17.583

2 Male 23.0 22.0 Left L on R 83 Left Some Heavy 193.04 Imperial 18.917

3 Male 20.5 19.5 Left L on R 80 Right Some Occas 182.88 Imperial 18.667

> Male_Left_SmokeNo

Sex Wr.Hnd NW.Hnd W.Hnd Fold Pulse Clap Exer Smoke Height M.I Age

1 Male 19.4 19.2 Left R on L 74 Right Some Never 182.88 Imperial 18.333

2 Male 22.0 21.5 Left R on L 55 Left Freq Never 200.00 Metric 18.500

3 Male 19.8 20.0 Left L on R 59 Right Freq Never 180.00 Metric 17.417

4 Male 17.5 17.0 Left L on R 97 Neither None Never 165.00 Metric 19.500

> RequiredPercentage <- (nrow(Male_Left_SmokeNo) / (nrow(Male_Left_SmokeNo) + nrow(Male_Left_SmokeYes))) * 100

> RequiredPercentage

[1] 57.14286