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December 10, 2007
Statistics

Marriage

As a newlywed I spent the past six months of my life answering questions about my wedding plans, life plans, and marriage in general. Recently some of my friend and family have gotten engaged or married. Marriage has had a large impact on my life in the past year. Through out my discussions and experiences with marriage it began to seem as though some people were not as accepting as others about people getting married young.

In 2006 whether or not to ban gay marriage in the state of Wisconsin was put to a vote. After much campaigning on both sides of the issue the citizens voted yes, gay marriage should be banned. This was surprising in a way because most of the people I encountered, especially college aged people, either had no opinion or felt that it should be allowed.

Both of these situations caused me to look for an explanation It was apparent to me that typically the baby boomer generation had more traditional views of marriage. Meaning that gay marriage was not something widely accepted and people in their time married at a younger age.

The results of this project could be beneficial to people interested in passing gay marriage in the future, for studies about increased divorce rates, and other similar topics.

In, order to find a potential explanation for the above or perhaps confirm my own I created a survey about marriage and dispersed it to two groups, college aged people (ages 18-25) and people age 55-70. The survey was done as a voluntary response and the sample narrowed down by selecting numbers from a hat that were assigned to each response to make the sample more random. Each group consisted of 25 individuals for a total sample size of 50. The samples were analyzed using output from The “R” program and tested with two-sample t-test and chi-square tests. They hypothesis tests were tested at the 5 percent level. Univariate EDA’s were also performed on both the samples of the different generations and the combined sample of them.

The survey consisted of seven questions and each individual was asked to give their age and gender. The questions of interest were 1, 3, and 4. The other questions were

asked for other areas of interest or as explanations for the results of the three primary questions. The data is arranged in a data table called marriage and all the results are displayed. The generations are identified by two groups, A and B, A being the 18-25 year old people and B being the 55-70 year olds.

-Sample Survey

Your Age:
Gender:

1. What is the YOUNGEST age you feel it is appropriate for someone to get married?

2. Why should people get married? (Select one)
   Love Money Pregnancy Other_____
3. Should gay marriage be permitted?
   Yes No
4. Do you believe in divorce (is it okay for people to get divorced)?
   Yes No
5. Are you married?
   Yes No
6. Have you ever been married?
   Yes No
7. Do you plan on or hope to be married someday?
   Yes No Maybe

-Univariate EDA's

The dispersion for the entire sample for the youngest age for marriage is strongly right skewed. Because of this one would use the median to describe the center which is 20. The IQR is between 18 and 20.75. This data could also be described as bimodal, having an increase in frequency from age 20 to 21. (Figure 1, Table 1.)

The sample was almost divided evenly between yes and no in regards to whether or not gay marriage should be permitted. Most people did say yes however. (Figure 2, Table 2.)

In the whole sample most people said that it was okay for people to get divorced by over three times the amount the people said no. (Figure 3, Table 3.)

- Group A had a similar dispersion to the sample as a whole for the minimum age to get married, strongly right skewed and bi modal with an increase in frequency from 20 to 21. Because of the skew the median is used, therefore the center is 20 and the IQR is between 18 and 22. (Figure 4, Table 4.)
- Group A said that gay marriage should be permitted over twice as often as they said no. (Figure 5, Table 5.)
- 18-25 year olds said they believe in divorce four times more than they said that they didn't. (Figure 6, Table 6.)
- Group B for the youngest age to get married has the same strong right skew as with the others. The median is 20 and the IQR is between 18 and 20. The data is also bimodal but with an increase in frequency from 23 to 24. There is also a gap in the data in the 23 spot. (Figure 7, Table 7.)
- Group B said no to gay marriage more often than yes by nearly two times as many. (Figure 8, Table 8.)
- Most people in group B said that divorce was acceptable. (Figure 9, Table 9.)

-Hypothesis Tests

1) Two-sample t-test because the data is quantitative and there are two independent populations.
2) Null Hypothesis: Mu A = Mu B
   Alternative Hypothesis: Mu A /= Mu B
3) Alpha =0.05
4) Observational, random allocation
5) N>40 (25+25=50)
   Both populations are independent
   Variances are equal (Levene's Test – Table 11)
6) mean A = 19.96 mean B = 19.76 df = 48
7) t = 0.3468
8) p-value = 0.7302
9) p-value is greater than alpha therefore one would not reject the null hypothesis.
10) It appears that there is no significant difference between the two groups and the minimum age they fell it is appropriate to get married.

(Table 10)

1) Chi Square Test because the data is categorical.
2) Null Hypothesis: There is no difference between the two groups in their opinion on gay marriage
   Alternative Hypothesis: There is a difference in the opinion of the groups on gay marriage.
3) Alpha = 0.05
4) Observation, random allocation
5) More than five individuals in each level of expected table. (Table 12a.)
6) (Table 12b)
7) X-squared = 6.5217
8) p-value = 0.01066
9) p-value is less than alpha therefore one does not reject the null hypothesis.
10) It appears that there is a difference of opinion between the two groups on whether or not gay marriage should be permitted.

(Table 12c)

1) Chi Square Test because the data is categorical.
2) Null Hypothesis: There is no difference between the two groups in their opinion on divorce.
   Alternative Hypothesis: There is a difference in the opinion of the groups on divorce.
3) Alpha = 0.05.
4) Observational, Random Allocation
5) More that 5 individuals in each cell of the expected table. (Table 13a)
6) (Table 13b)
7) X-squared = 0.4386
8) p-value = 0.5078
9) p-value is great than alpha therefore one does not reject the null hypothesis.
10) It appears that there is no significant difference between the two groups and their opinions on divorce.

The findings or the study were very interesting. The hypothesis of a generational difference of opinion on marriage were disproved in everything but gay marriage. Both groups had very similar opinions on the minimum age and whether or not is was okay for someone to get a divorce. However, the two groups had very different views on gay marriage. The 18-25 year olds were much more approving of gay marriage than the 55-70 year olds. One could conclude that the age of marriage and acceptance of divorce has not changed much over the years, but the younger generations are much more accepting of gay marriage.

I believe that it would be interesting to test the generations between the two groups tested. Perhaps there would be a difference in the other two variables in those age groups. I would also find more background information on marriage and divorce such as the average of marriage currently and in the past and the number of divorces. Overall, I feel that the study was interesting and did support in part the research hypothesis. There is a difference in the way generations view gay marriage. The study could be made more interesting by adding the age groups between the two that were already tested and compare those results.

Figure 1

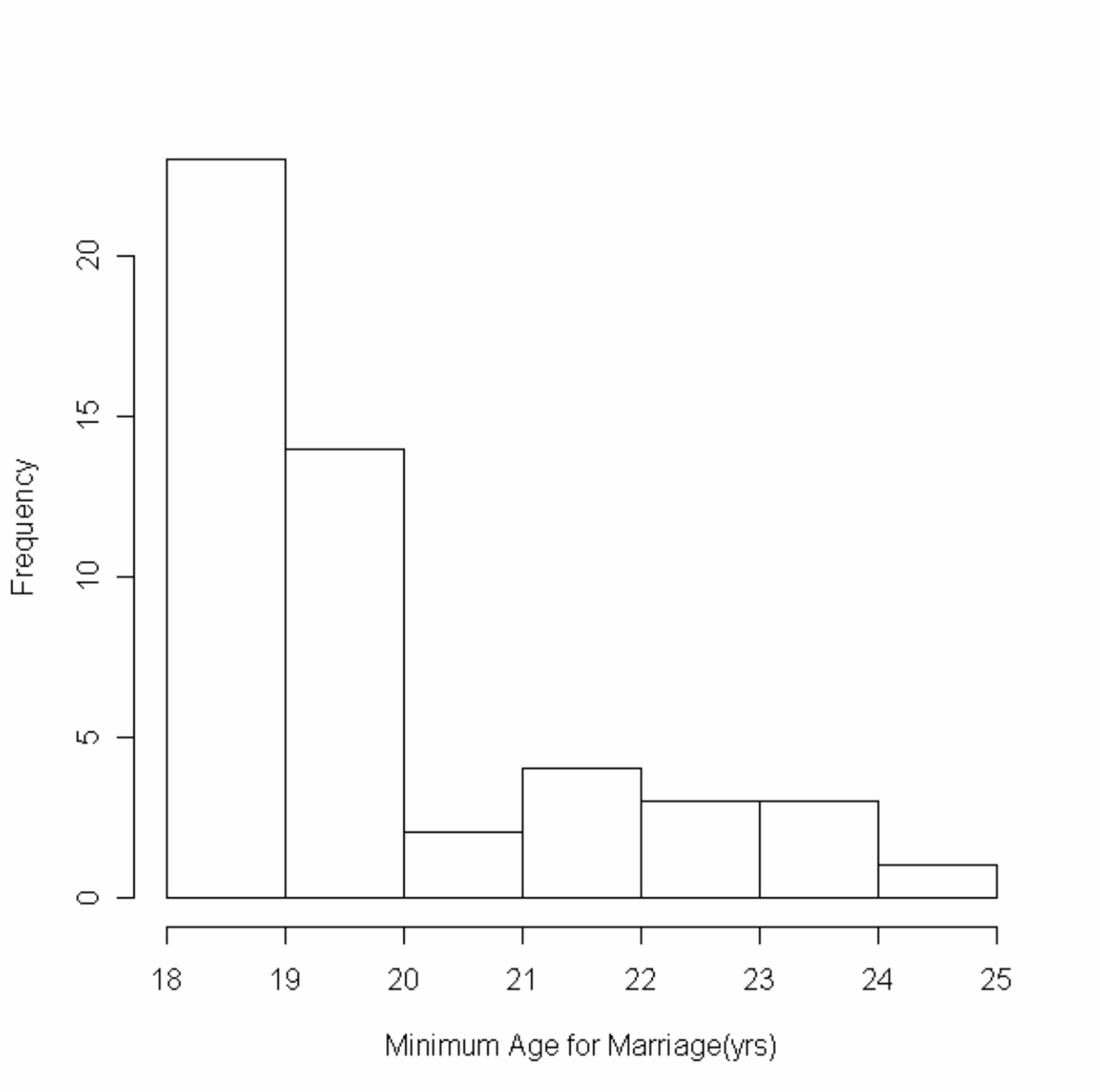

Table 1

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
18.00	18.00	20.00	19.86	20.75	25.00

Table 2

Gay.Marriage
 N Y
23 27

Figure 2

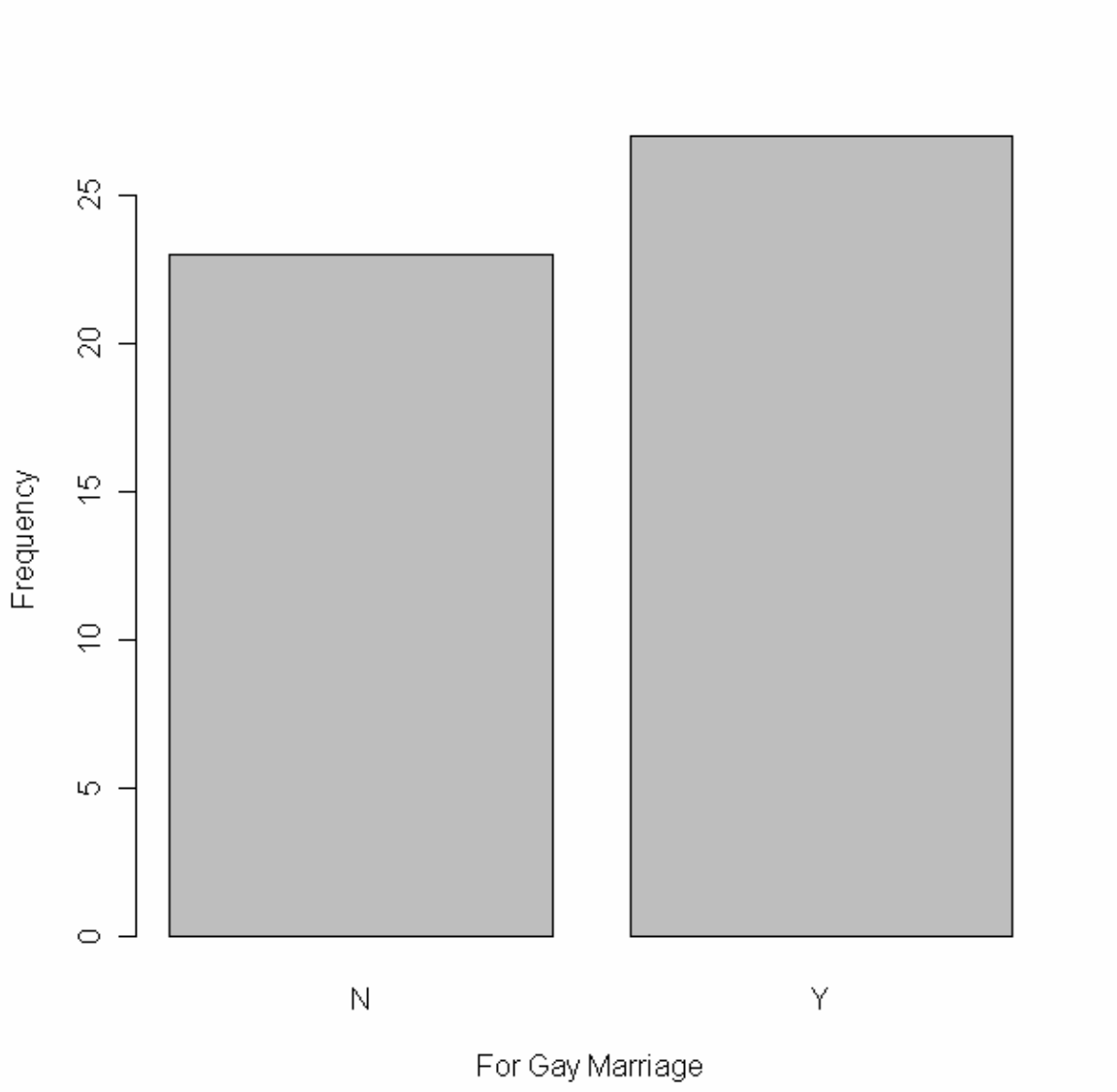

Table 3

Divorce	
N	Y
12	38

Figure 3

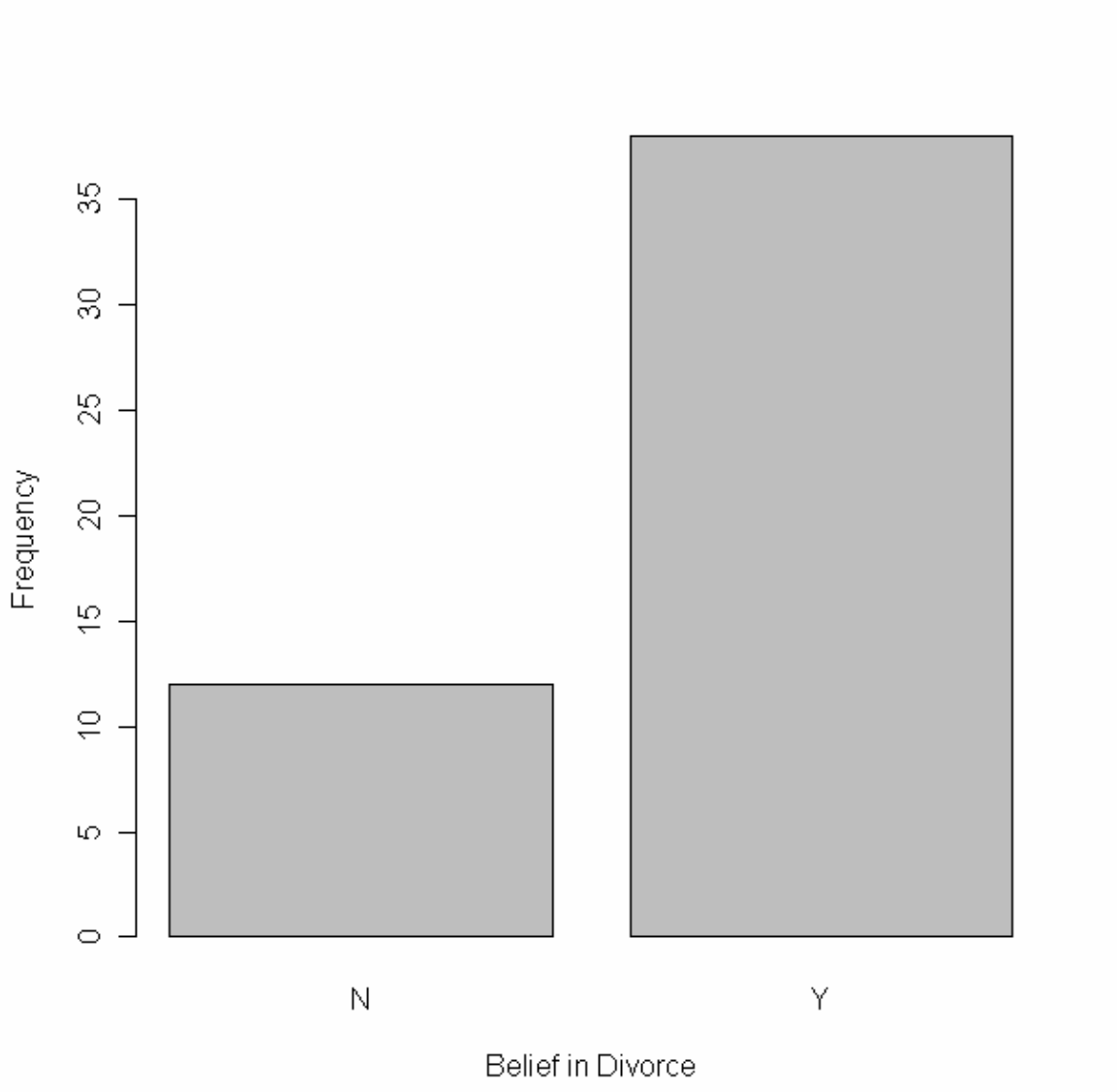

Figure 4

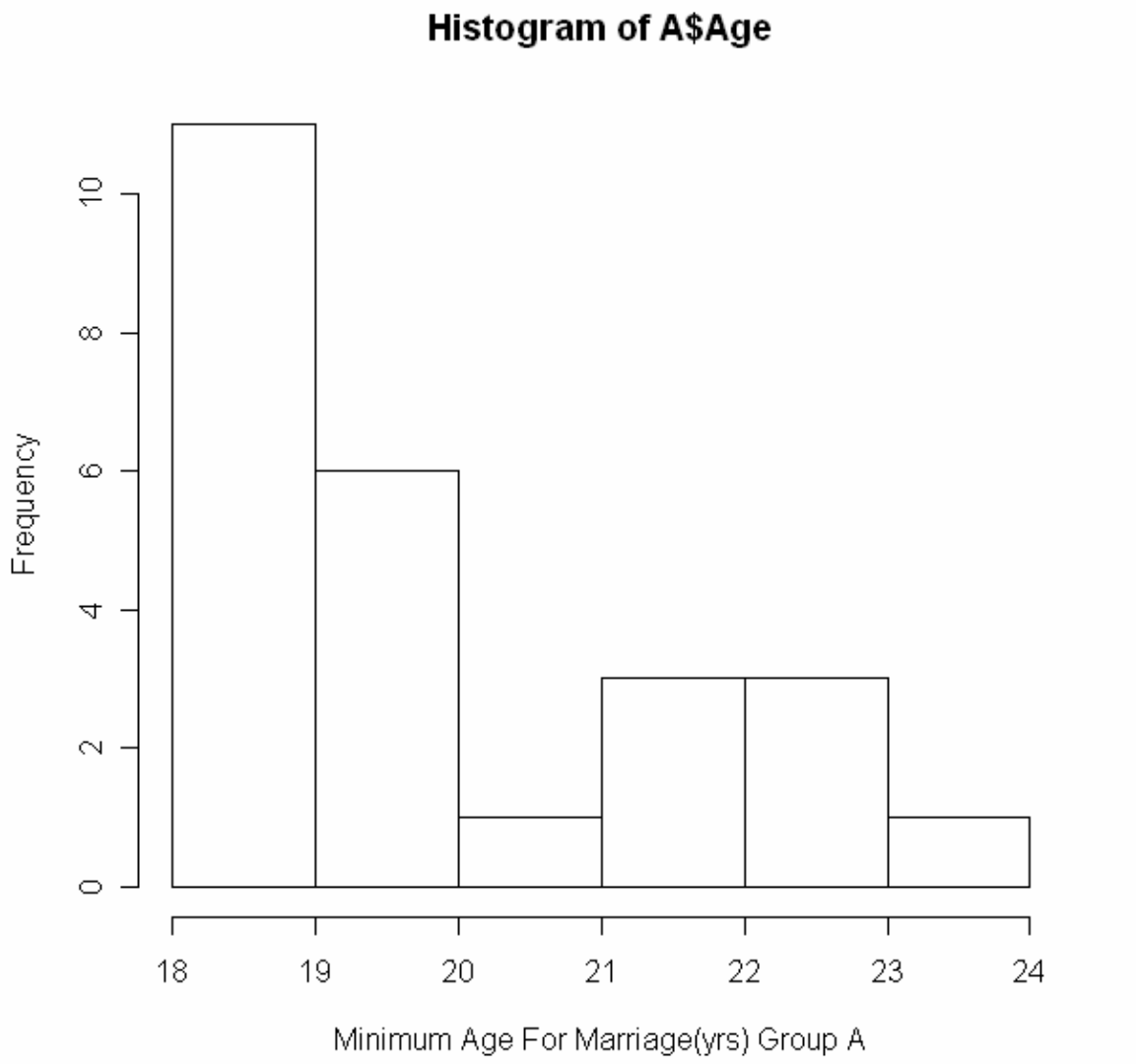

Table 4

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
18.00	18.00	20.00	19.96	22.00	24.00

Figure 5

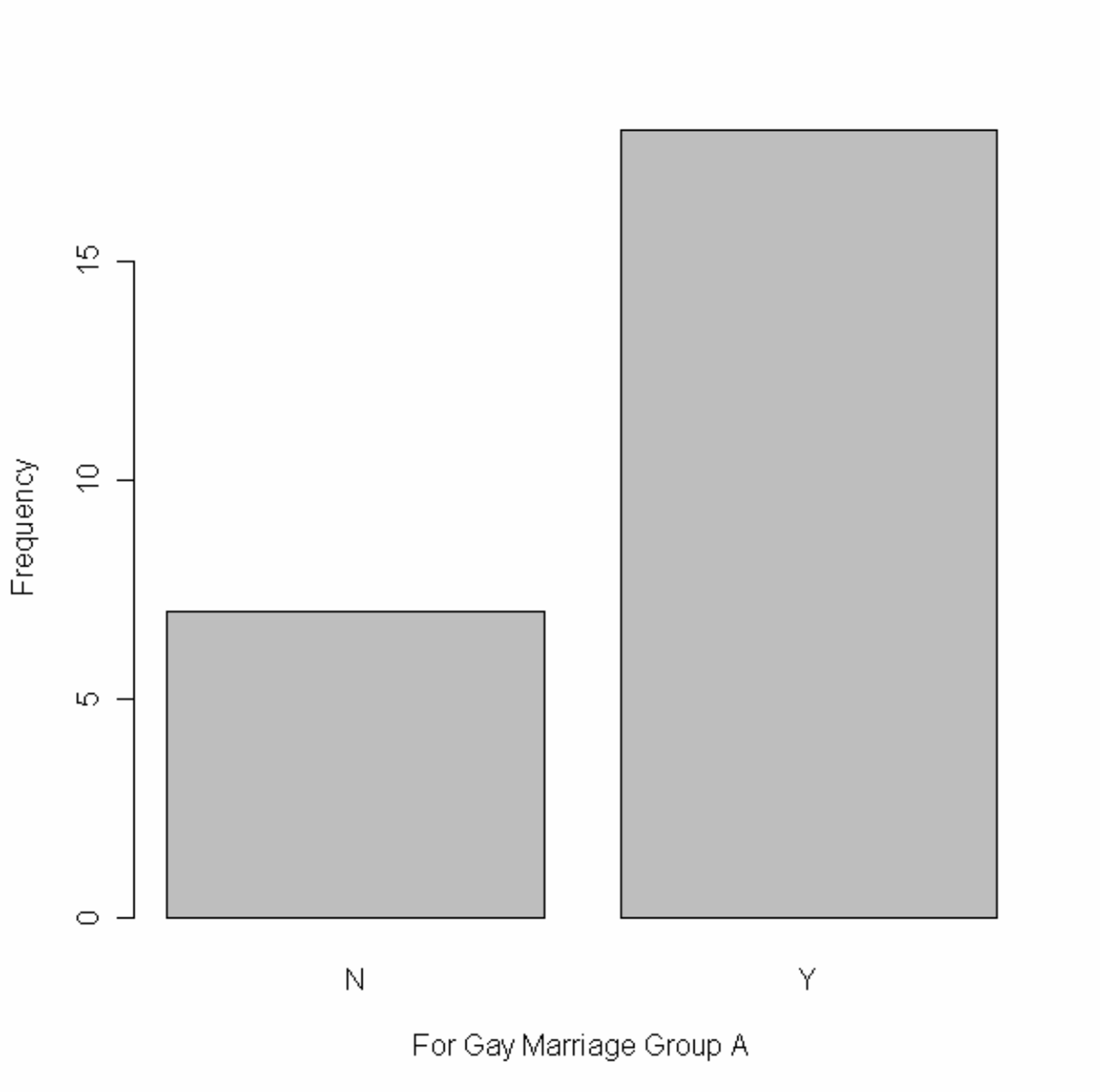

Table 5

N	Y
7	18

Figure 6

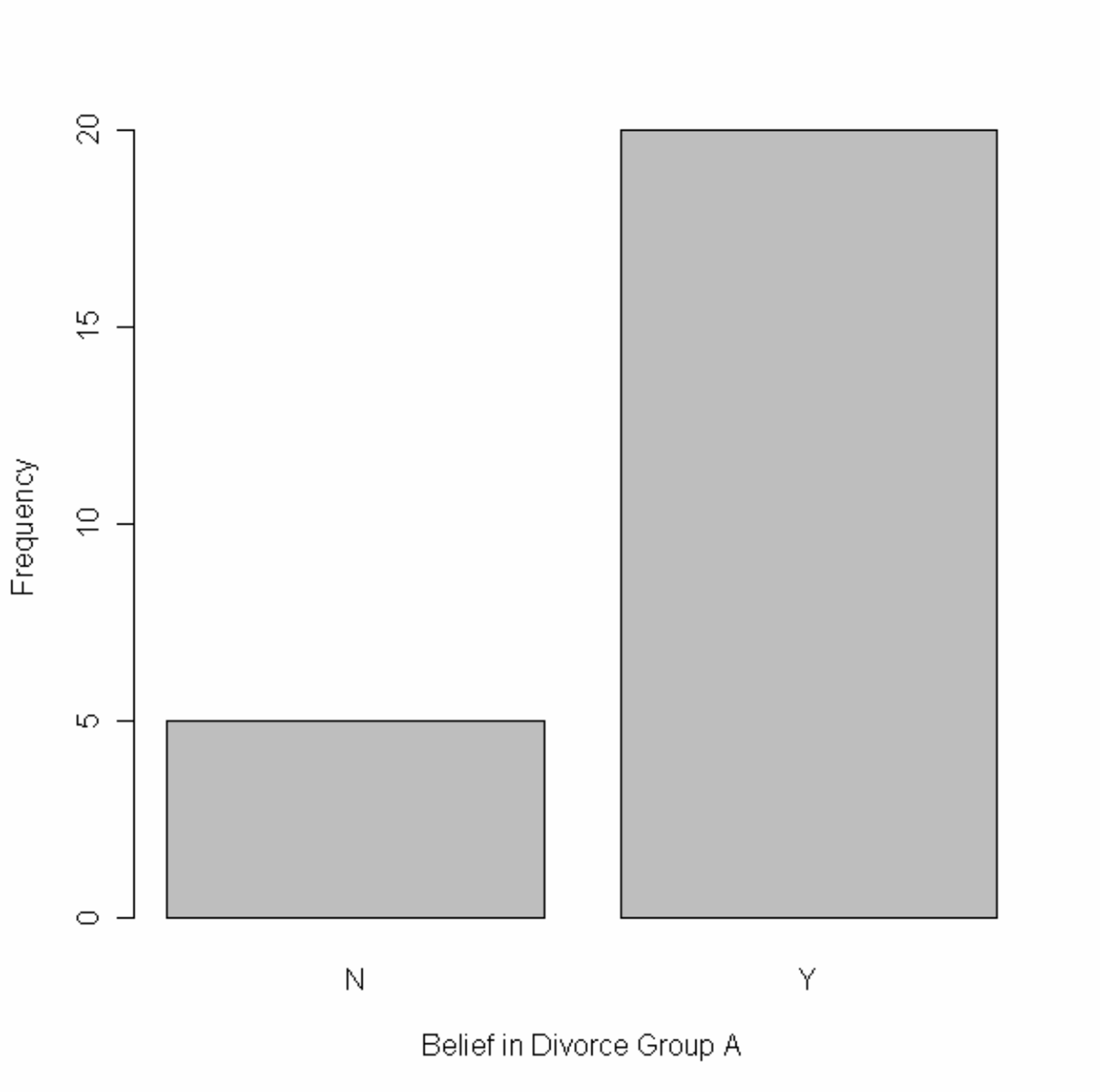

Table 6

N	Y
5	20

Figure 7

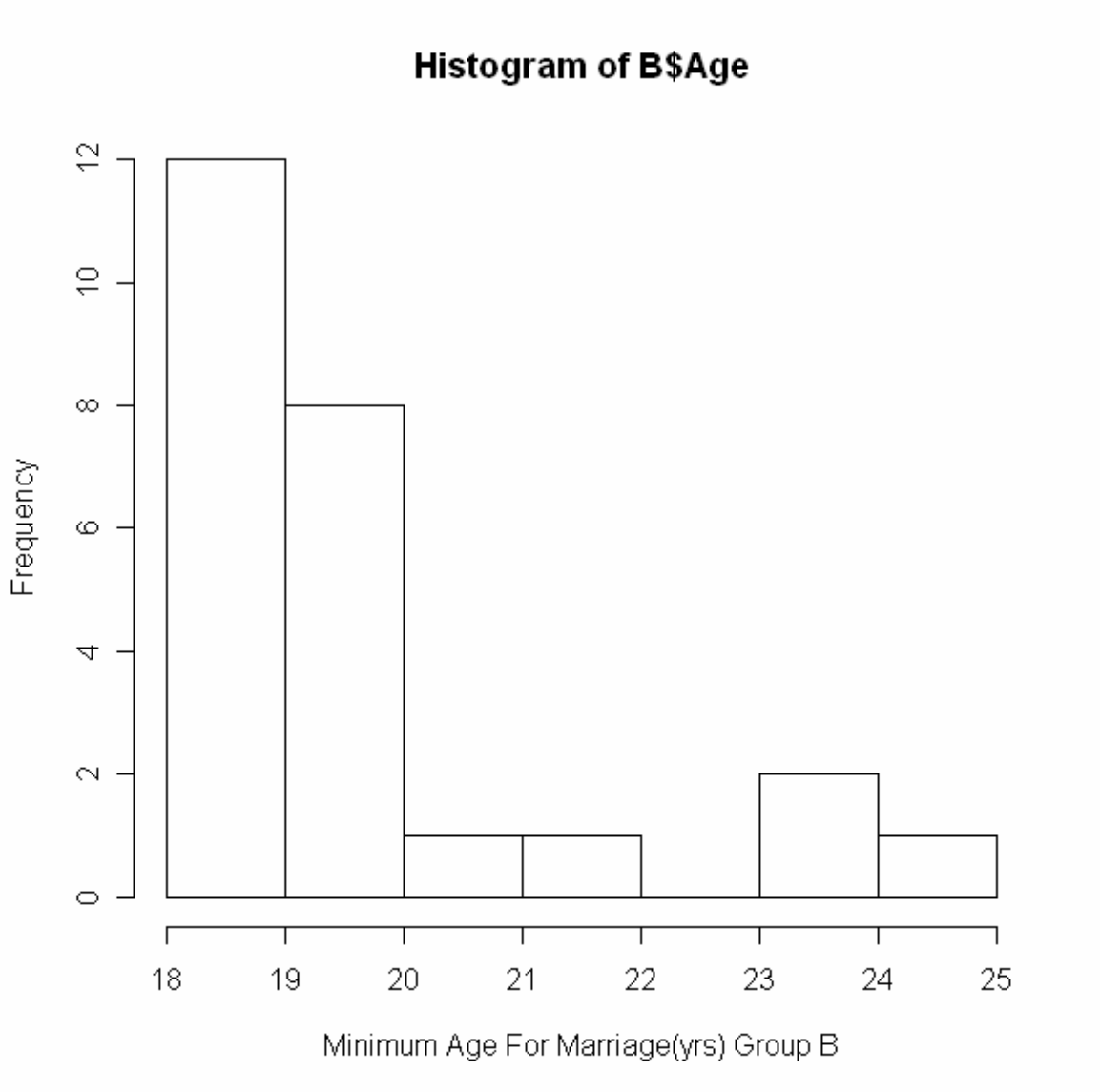

Figure 7

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
18.00	18.00	20.00	19.76	20.00	25.00

Figure 8

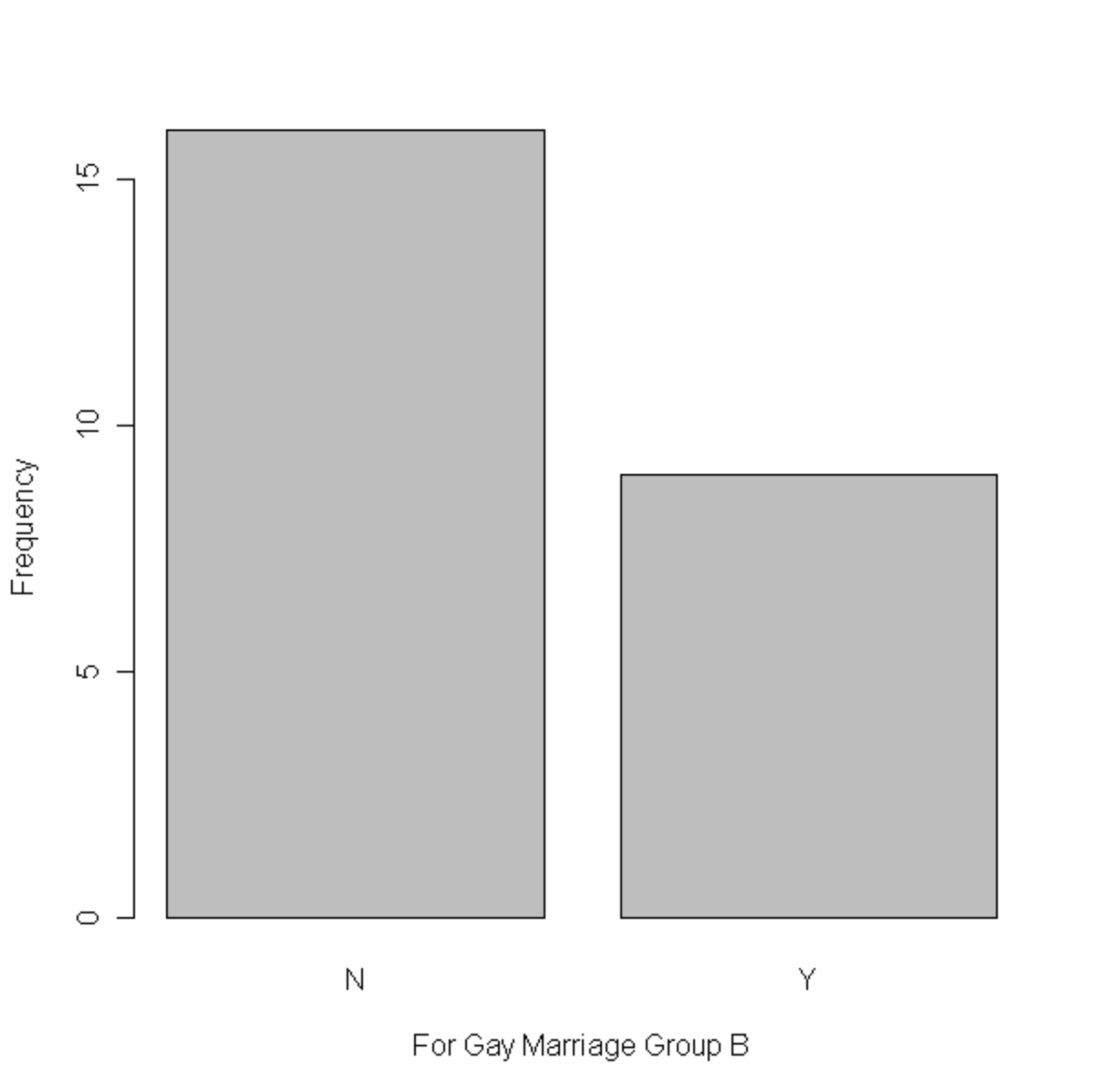

Table 8

N	Y
16	9

Figure 9

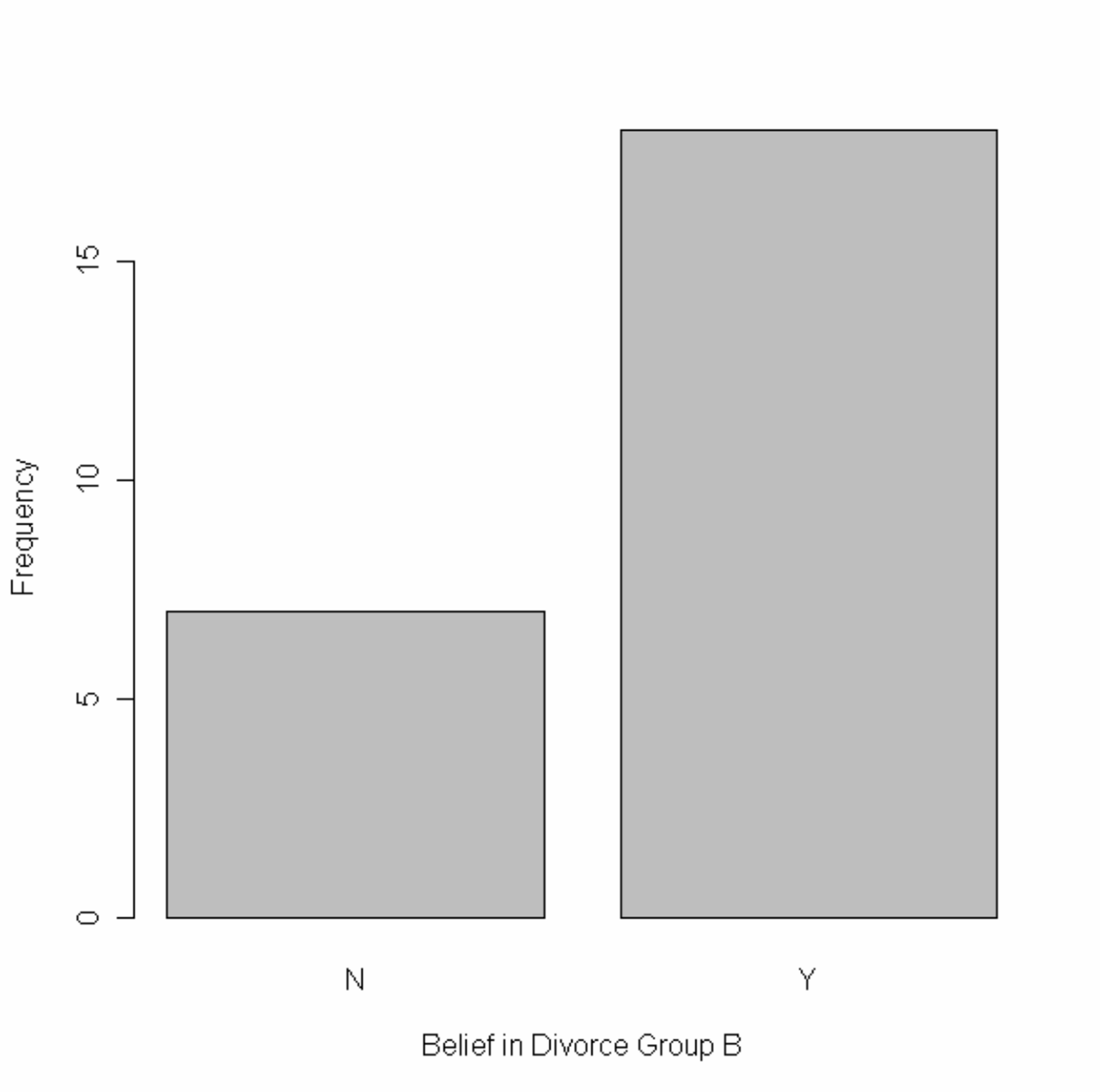

Table 9

N	Y
7	18

Table 10

Two Sample t-test

data: Age by Group
t = 0.3468, df = 48, p-value = 0.7302
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.9594467 1.3594467
sample estimates:
mean in group A mean in group B
          19.96   19.76

Figure 10

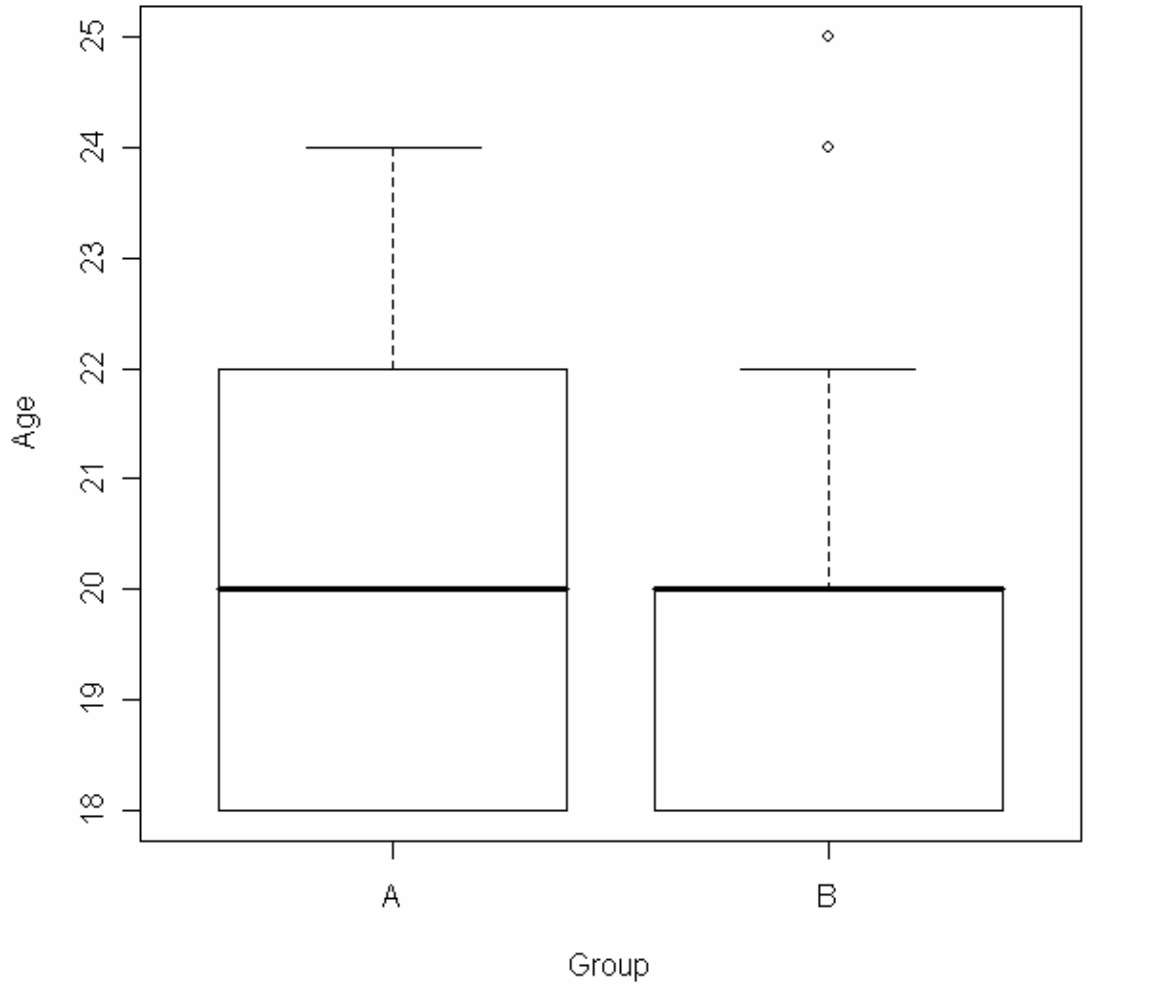

Table 11

Levene’s

Table 12a

Gay.Marriage

Group	N	Y
A	11.5	13.5
B	11.5	13.5

Table 12b

Gay.Marriage

Group	N	Y
A	7	18
B	16	9

Table 12c

Pearson's Chi-squared test

data: m1.tbl
X-squared = 6.5217, df = 1, p-value = 0.01066

Table 13a

Divorce

Group	N	Y
A	6	19
B	6	19

Table 13b

Divorce

Group	N	Y
A	5	20
B	7	18

Table 13c

Pearson's Chi-squared test

data: m2.tbl
X-squared = 0.4386, df = 1, p-value = 0.5078

Marriage Data Table

Group	Age	Reason	Gay.Marriage	Divorce	Married Previously
A	18	Love	Y	N	N	N
A	19	Love	Y	Y	Y	Y
A	18	Love	Y	Y	N	N
A	22	Love	Y	Y	N	N
A	23	Love	Y	Y	N	N
A	22	Love	Y	N	N	N
A	18	Love	Y	Y	Y	Y
A	18	Love	Y	N	N	N
A	23	Love	N	Y	N	N
A	20	Love	Y	Y	N	N
A	18	Love	Y	Y	N	Y
A	20	Love	Y	Y	N	N
A	24	Love	Y	Y	N	N
A	21	Love	Y	N	N	N
A	18	Love	Y	Y	N	N
A	23	Love	N	Y	N	N
A	20	Love	Y	Y	N	N
A	20	Love	N	N	N	N
A	22	Love	N	Y	N	N
A	20	Love	N	Y	Y	Y
A	18	Love	N	Y	Y	Y
A	18	Love	Y	Y	N	N
A	20	Love	Y	Y	N	N
A	18	Love	N	Y	N	N
A	18	Love	Y	Y	N	N
B	20	Love	Y	Y	Y	Y
B	18	Love	N	Y	N	Y
B	20	Love	N	N	N	N
B	24	Love	N	N	N	Y
B	20	Love	N	N	Y	Y
B	19	Other	N	Y	N	Y
B	20	Other	Y	Y	N	Y
B	18	Other	N	Y	N	Y
B	18	Love	N	Y	Y	Y
B	21	Love	N	Y	N	N
B	18	Love	N	N	Y	Y
B	22	Love	N	Y	N	Y
B	24	Love	N	Y	N	Y
B	20	Love	N	N	Y	Y
B	20	Love	N	N	Y	Y
B	18	Love	N	Y	Y	Y
B	25	Other	Y	Y	Y	Y
B	18	Love	Y	Y	Y	Y
B	18	Money	Y	N	Y	Y

Marriage Data Table Cont.

Group	Age	Reason	Gay.Marriage	Divorce	Married Previously	
B	19	Love	Y	Y	Y	Y
B	18	Love	Y	Y	Y	Y
B	20	Love	N	Y	N	N
B	20	Love	Y	Y	Y	Y
B	18	Love	Y	Y	Y	Y
B	18	Love	N	Y	Y	Y