How Opinions On Abortion Have Evolved Among American Adults*

Analysis of US General Social Survey in 2006 and 2016

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abstract in progress :)

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*Code and data in this report are available at: https://github.com/shirleychen003/abortion.git.

1 Introduction

Discussion about abortion access continues to be a contentious and polarizing matter within many societies around the world. One side of the battle, which is commonly referred to as the "pro-life" perspective, advocates for restrictive laws on abortions, arguing for the rights of the unborn and declaring the procedure as a moral issue. On the other side, the "pro-choice" side advocates for reproductive rights, arguing for the fundamental right that humans have to make their own choices with their bodies, which includes obtaining an abortion. One of the earliest instances related to abortion laws in the United States dates back to 1847, when the American Medical Association (AMA) was formed (1). During this time, state legislatures moved to ban abortions since AMA members had launched a criminalization campaign against abortions. In the decades following, all the states were required to restrict abortions by law, with special exceptions involving health reasons. Restrictive laws on abortion access were normalized, and the stigma around the procedure continued to grow. Since then, the fight for reproductive rights has been characterized by both challenges and developments, with the U.S, Supreme Court implementing the infamous Roe v. Wade law protecting the right to an abortion in 1973, but then overturning the law in 2022 (1). Abortion rates have reported to be declining on both a national and regional level in the United States. In a 2008 study, it is estimated that considering current abortion rates, around 1 in 4 U.S. women of the reproductive age will have an abortion by age 45 (2). Additionally, abortion rates vary on the state, as they were reportedly increasing in Georgia in the last decade, with the rate of abortion being 16.9 abortions per 1000 women aged 15-44 in 2017. Despite abortions being more common in Georgia, individuals face numerous barriers within policy, systems, and in their communities, restricting safe access to legal abortions. Especially after the overturning of Roe V. Wade in 2022, access to affordable abortion care became heavily restricted, and now exists on paper exclusively for people of already marginalized and oppressed communities (4). Regardless of how "valid" reasons or circumstances may be, many states continue to hold restrictive policies with very limited access to legal abortions. Disapproval of abortions

Table 1: Demographic data obtained from the GSS Dataset

Variable	New Name	Description	Example Response
age	age	Respondent's age	42
sex	sex	Respondent's sex	female
relig	religion	Respondent's religious preference	Protestant

manifests not solely through laws and policies, but through the American citizens' perspectives as well, encompassed by a spectrum of cultural, religious, and personal values.

In this paper, we will look at multifaceted reasons why women may want to obtain an abortion and the public's opinion on if they should be legally able to. Sourced from the U.S. General Statistical Survey (GSS) from NORC at the University of Chicago, I extract the variables representing the reasons of rape, endangered health, low income, and any reason, and consolidate demographic factors such as sex, age, and religion to provide an extensive analysis. Overall, it becomes evident that when considering the immediate health status of the women (rape and/or endangered health), respondents are more likely to support an abortion. A significant number of respondents have less sympathy when considering the socioeconomic status of the women or personal reasons that may not be explicitly disclosed, potentially disregarding the complexity in circumstances and individual autonomy.

In [Data], the data source and methodology, the data cleaning processes, biases and limitations, and key variables that are interacted with are presented. In [Results], the relationships between demographic information of participants and their responses are analyzed with supportive graphs and tables. Finally, in [Discussion], the significance and possible causes of our findings are explored within the factors of religious beliefs, socioeconomic status, sex and age

2 Data

2.1 Source Data and Methodology

Based at the University of Chicago since 1972, the GSS is a project with the objective of monitoring and analyzing the intricacies of American society (NORC, n.d.a). The GSS Data Explorer makes it so that data retrieved from the project is a publicly available resource, accessible to various types of people, such as educators, policymakers, or researchers through the National Opinion Research Center (NORC). It has even been referenced in leading publications, such as the New York Times and the Associated Press. Due to the variety of subjects covered regarding American society, the GSS is one of the most frequently visited resources for information for social sciences.

Table 1 displays the demographic data that was obtained from the dataset.

Table 2 displays the data relating to opinions on potential reasons for abortion that were obtained from the dataset. Respondents were initially given the prompt: "Please tell me whether or not you think it should be possible for a pregnant woman to obtain a legal abortion if...". Afterwords, they were instructed to circle one answer for the each of four statements that finished the prompt:"The woman wants it for any reason?", "If the family has a very low income and cannot afford any more children?", "If the woman's own health is seriously endangered by the pregnancy?", and "If she became pregnant as a result of rape?".

Majority of the GSS data was collected through face-to-face interviews with the target population of adults (18+) residing in the United States. The standard national survey methods were practiced, such as hiring interviewers and training supervisors when needed. Interviewers were required to complete a practice interview supervised by evaluators at NORC (NORC, n.d.b).

However, starting in 2002, computer-assisted personal interviewing (CAPI) methods were introduced (NORC, n.d.b). The use of manual edits and keypunching were eliminated, and training to learn how to use CAPI was included. The dataset used for this paper was retrieved from the GSS Data Explorer website (NORC, n.d.c). All the survey data used to measure the public opinion on different reasons for abortion were in the Core Module of GSS and tagged with Abortion and Split Ballots; the specific variable names extracted were abany, abpoor, abhlth, and abrape. For the years and demographic data, the specific variable names extracted were year (later filtered to just 2006 and 2016), age, relig, and sex.

2.1.1 Strengths and Limitations

2.1.2 Biases to Consider

2.2 Data Cleaning

The open source statistical programming language (R Core Team 2023) was used to clean and analyze the data, along with producing the graphs. The main packages that supported this process included (Wickham 2023), (Wickham et al. 2023), (Xie 2023), (Firke 2023), and (Spinu, Grolemund, and Wickham 2023).

The cleaning process involved filtering the specific data variables used for our analysis from the downloaded GSS dataset, and renaming any variables with meaningful names. For example, rather than "abany" being the column name for "The woman wants an abortion for any reason?" , we renamed it to 'any_reason', as shown in Table 2. Further, the numerical values representing the participants' responses for the abortion (eg. Yes - 1, No - 2) and religion (eg. Protestant - 1, Catholic - 2, etc.) were changed to the representative words. Table 2 shows the old and new variable names for the abortion questions used in cleaning, the description of variables, and sample responses. Further, data from only years 2006 and 2016 were obtained.

Table 2: GSS Dataset

Variable	New Name	Description of Reasons for Abortion	Example Response
abany	any_reason	the woman wants an abortion for any reason	yes
abpoor	low_income	the family has a low income	no
abhlth	endangered_health	the woman's own health is endangered	yes
abrape	rape	she became pregnant as a result of rape	no

2.3 Data Terminology

The response choices for the questions regarding abortion and their respective code in brackets are as follows: Inapplicable (-100), No Answer (-99), Do Not Know/Cannot Choose (-98), Skipped on Web (-97), Yes (1), and No (2). The response choices for the religion question and their respective code in brackets are as follows: No Answer (-99), Do Not Know/Cannot Choose (-98), Skipped on Web (-97), Protestant (1), Catholic (2), Jewish (3), None (4), Other (5), Buddhism (6), Hinduism (7), Other eastern religions (8), Muslim/Islam (9), Orthodox-Christian (10), Christian (11), Native American (12), and Inter-nondenominational (13). For our graphs, we did not include the Inapplicable, No Answer, and Do Not Know/Cannot choose responses to focus on the discernible participant responses.

2.4 Responses

2.4.1 Rape

Figure 1 displays the proportion of Yes and No responses in 2006 and 2016 to the question "Should it be possible for a pregnant woman to obtain a legal abortion if she became pregnant as a result of rape?"

2.4.2 Endangered Health

Figure 2 displays the proportion of Yes and No responses in 2006 and 2016 to the question "Should it be possible for a pregnant woman to obtain a legal abortion if the woman's own health is seriously endangered by the pregnancy?"

2.4.3 Low Income

Figure 3 displays the proportion of Yes and No responses in 2006 and 2016 to the question "Should it be possible for a pregnant woman to obtain a legal abortion if the family has a very low income and cannot afford any more children?"

Figure 1: Proportion of Yes and No Responses in 2006 and 2016 to the question "Should it be possible for a pregnant woman to obtain a legal abortion if she became pregnant as a result of rape?"

Figure 2: Proportion of Yes and No Responses in 2006 and 2016 to the question "Should it be possible for a pregnant woman to obtain a legal abortion if the woman's own health is seriously endangered by the pregnancy?"

Figure 3: Proportion of Yes and No Responses in 2006 and 2016 to the question "Should it be possible for a pregnant woman to obtain a legal abortion if the family has a very low income and cannot afford any more children?"
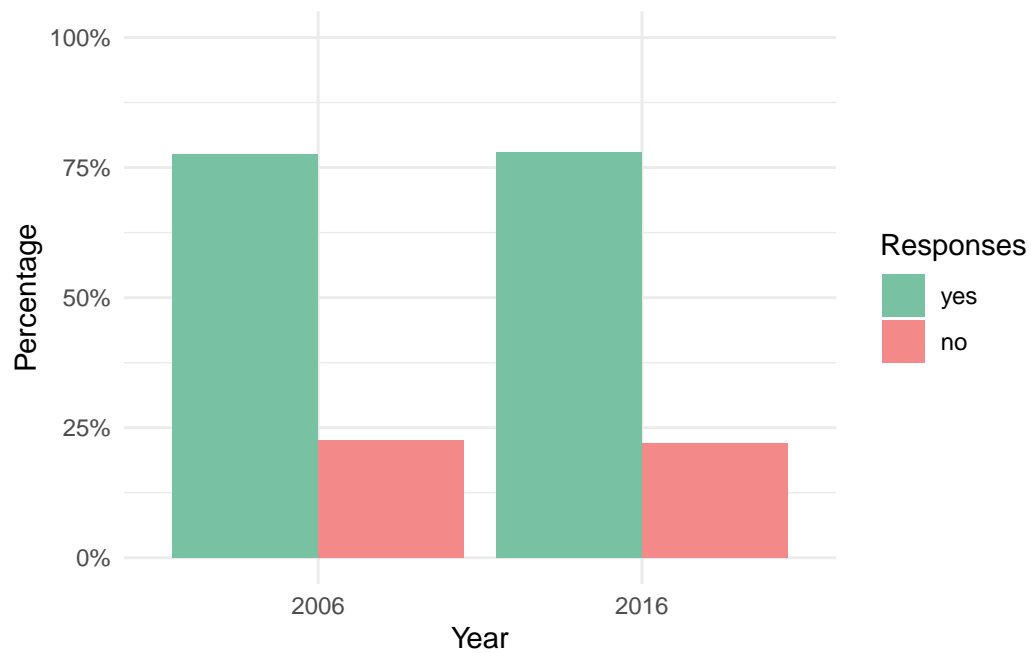
2.4.4 Abortion for Any Reason

Figure 4 displays the proportion of Yes and No responses in 2006 and 2016 to the question "Should it be possible for a pregnant woman to obtain a legal abortion if the woman wants it for any reason?"
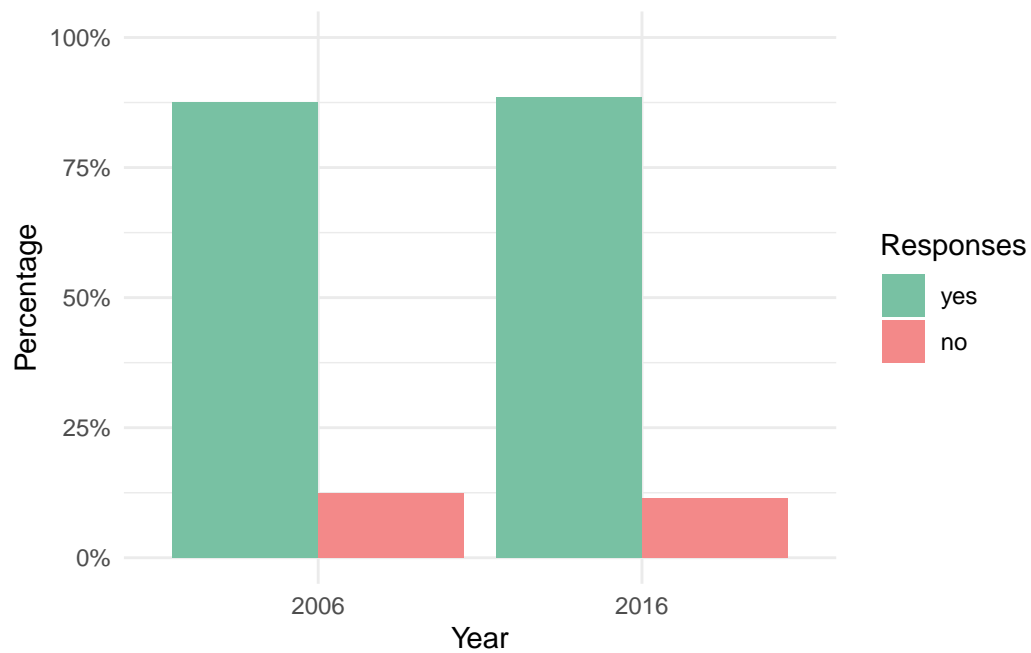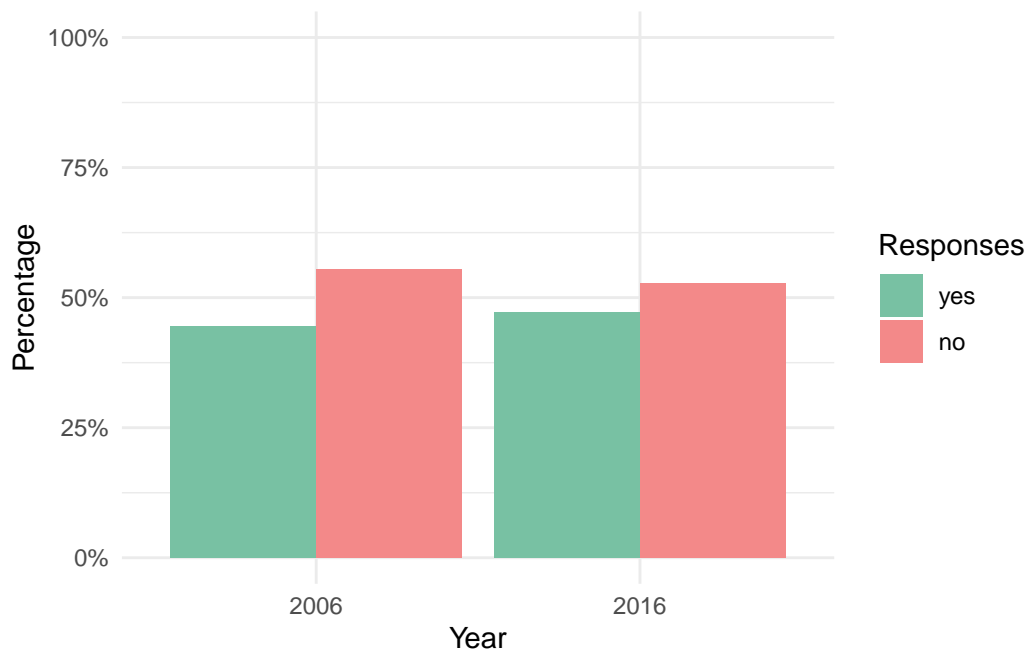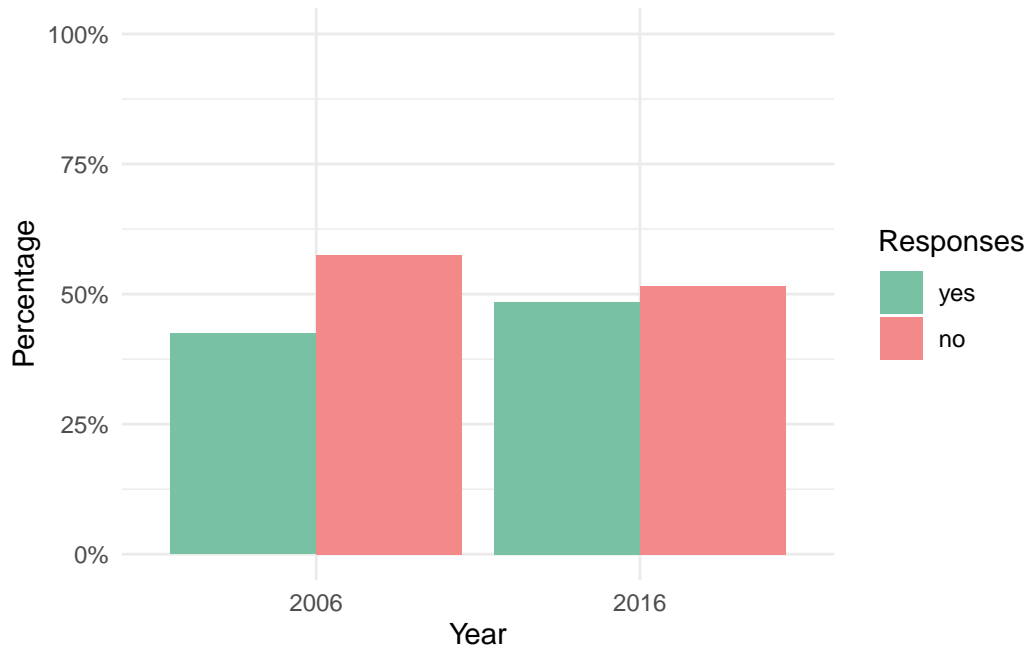

Figure 4: Proportion of Yes and No Responses in 2006 and 2016 to the question "Should it be possible for a pregnant woman to obtain a legal abortion if the woman wants it for any reason?"

3 Results

3.1 Respondent Demographics

Table 3 shows the count and percentage of male and female respondents for 2006 and 2016. Responses were filtered to be strictly male or female. For both years, the percentage of female participants were higher than the male participants, as the female participant percentages were always above 50% while the male participant percentages stayed close to the mid 40% range.

Table 4 displays the number of respondents among the different age groups for the 2006 and 2016 surveys. The classified age groups are '18-24', '25-34', '45-54', '55-64', and '65+'. The

Table 3: Respondent Gender Count and Percentage for 2006 and 2016

Year	Sex	Count	Percentage
2006	female	1024	56.54
2006	male	787	43.46
2016	female	941	55.61
2016	male	751	44.39

Table 4: Respondent Count of Participants in Age Groups in 2006 and 2016

Year	18-24	25-34	35-44	45-54	55-64	65+
2006	159	337	364	361	283	307
2016	104	304	291	293	323	377

18-24 age group had the least amount of participants each year, while the '35-44' age group had the highest proportion in 2006 and the '65+' age group had the highest proportion in 2016.

Table 5 shows that the age of the participants ranged from 18 to 89, with the average respondent being 47 years old in 2006 and 50 in 2016. Additionally, the mode age have a significant difference between the two years, with a mode value of 36 in 2006 and 52 in 2016.

Table 6 displays the proportion of participants of each religion in the survey in 2006 and 2016. The religion with the highest proportion of responses for both years was "Protestant" with 52.46% in 2006 and 47.70% in 2016. The religion with the lowest proportion of responses for 2006 was "Other eastern religions" with a value of 0.11%, and there was an equal amount of respondents for "Other eastern religions" and "Inter-nondenominational" with a value of 0.24% in 2016.

Figure 5 graphically illustrates the proportions of the religious beliefs of the participants.

3.2 Overall Trends

Table 7 summarizes the average of the responses for each prompt, where 1 presents a "yes" response and 2 represents a "no" response. Each reason shows a decrease in the average from

Table 5: Total Respondent Mean, Median, Mode, Min, and Max Age by Year

Year	Mean	Mode	Min	Max
2006	47	36	18	89
2016	50	52	18	89

Table 6: Respondent Religion Count and Percentage for 2006

| Religion	2006 Count	2006 Percentages	2016 Count	2016 Percentages
Buddhism	17	0.94	12	0.71
Catholic	434	23.96	392	23.17
Christian	28	1.55	26	1.54
Hinduism	4	0.22	10	0.59
Inter-nondenominational	3	0.17	4	0.24
Jewish	28	1.55	31	1.83
Muslim/Islam	10	0.55	10	0.59
None	311	17.17	372	21.99
Orthodox-Christian	7	0.39	5	0.30
Other	17	0.94	16	0.95
Other eastern religions	2	0.11	4	0.24
Protestant	950	52.46	807	47.70
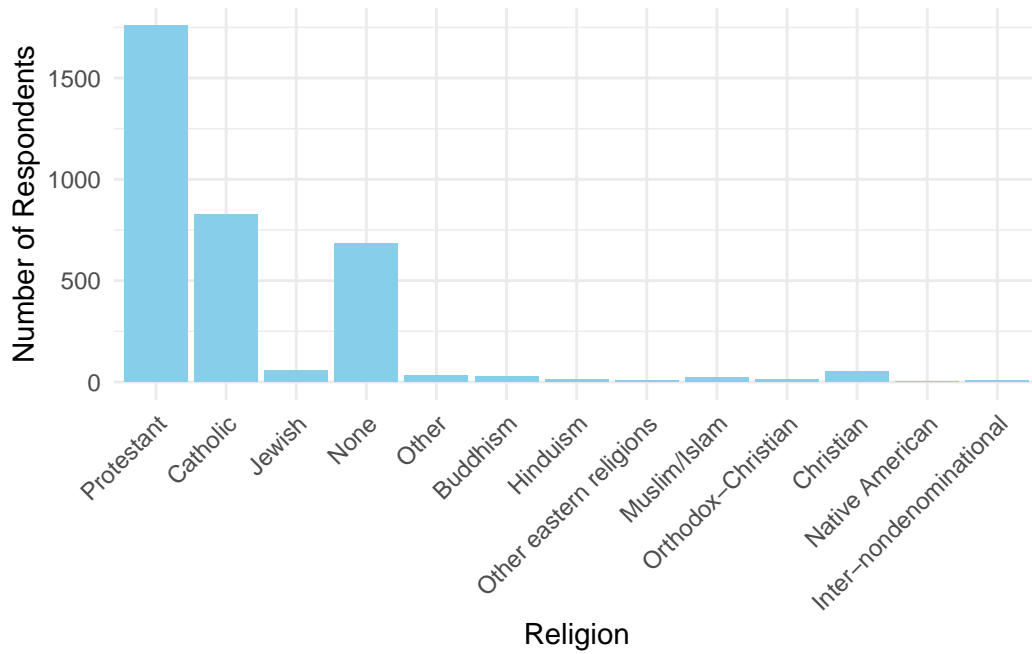
Figure 5: Number of Respondents by Religion

2006 to 2016, showing that more participants are responding with "yes" in the later year. The most significant change was in the "Any Reason" reasoning, with a decrease of 0.06 in the value. Otherwise, the deceases remained minimal in the other prompts, ranging from 0.005 to 0.026. The decreases in value could be attributed to the change in societal attitudes and increased awareness of the issue at hand.

Table 7: Average of Responses by Year Divided by Question

Year	Rape	Endangered Health	Low Income	Any Reason
2006	1.225	1.124	1.554	1.575
2016	1.220	1.115	1.528	1.515

Figure 6 displays the proportion of "yes" and "no" responses among all the variables in 2006. The rape and endangered health, have a noticeably higher amount of respondents who answered yes, with both proportions being higher then 75%. However, for the other two reasons, low income and any reason, a lower proportion of respondents responded yes, as they were both less than 50%. The differences in proportions could convey the US population's additional sympathy for health reasons that are beyond the mother's control.

Figure 7 displays the proportion of "yes" and "no" responses among all the variables in 2016, with the patterns being very similar to the 2006 data. Although minimal, there is an increase in "yes" responses for the low income and any reason variables, illustrating a possible shift in societal attitudes regarding the issue.

3.2.1 Age

Majority of the respondents were within the age range of 24-60 years old, as shown in Figure 8. The highest point was at age 58 with 81 respondents and the lowest point of the graph was age 88 with 7 respondents. Despite the younger population showing more of an involvement in the topic, Figure 8 shows that there is still a substantial portion of the older generation contributing their opinion, conveying the importance of the topic among all ages.

More specifically, the proportion of respondents organized by age group are shown in Table 8, Table 9, Table 10, and Table 11, for the abortion reasons of rape, endangered health, low income, and any reason, respectively. The 65+ age group consistently demonstrated the highest proportion in no responses for each abortion reason, whereas the age group for yes responses varied, but stayed close in range. This may be correlated to the fact that older generations often hold more traditional and conservative views, in which abortion is not favoured upon. The 35-44 age group showed the highest proportion in yes responses for the reasons of rape, low income, and any reason, while the 45-54 age group held the highest amount of responses for the endangered health reason. The 35-54 age group may have more synpathy and put more emphasis on socioeconomic factors, health, and individuality compared to the other age groups.
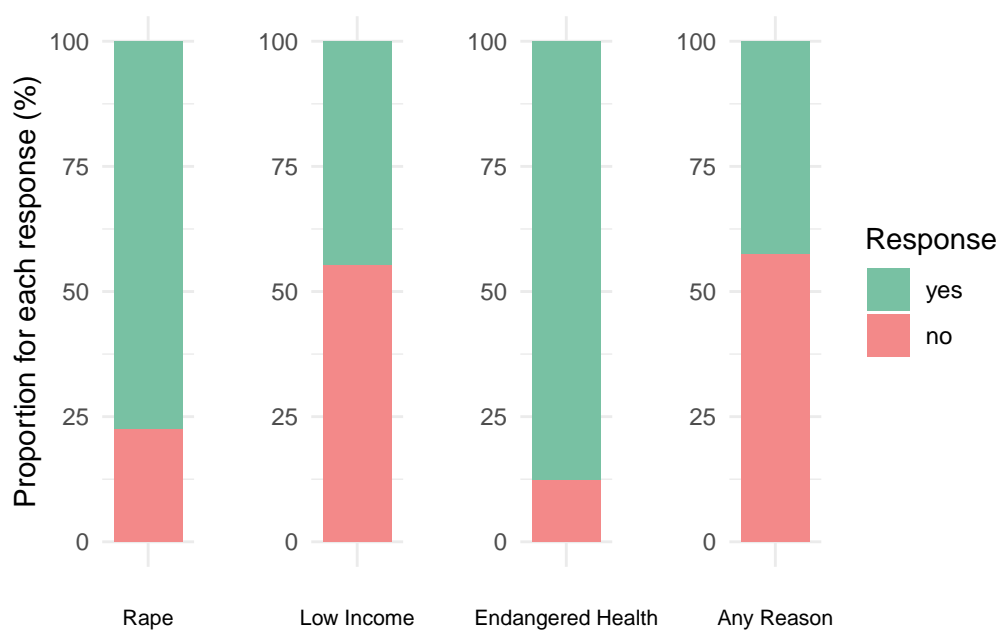
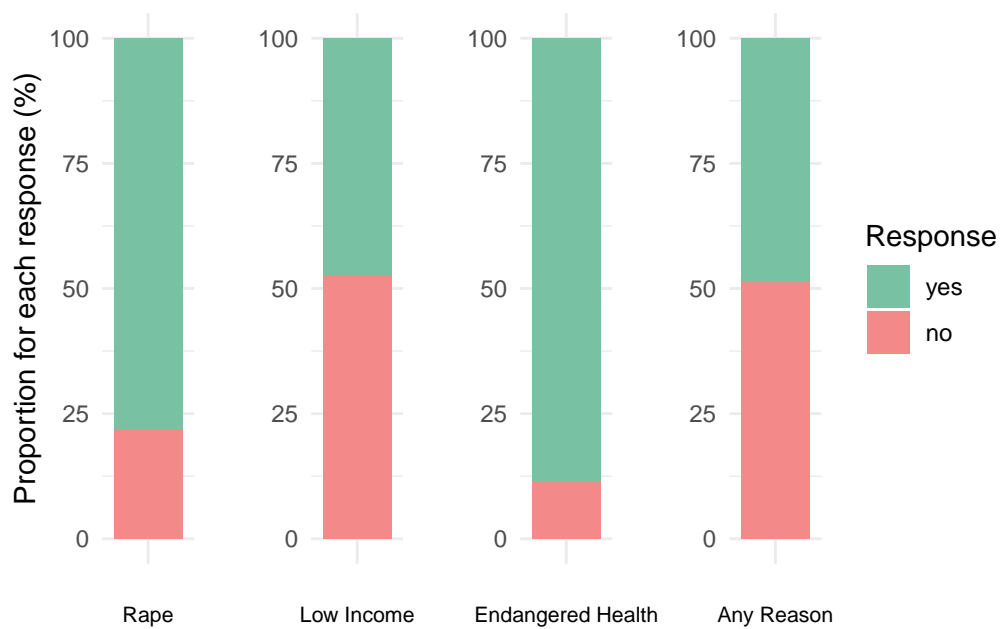Figure 6: Proportion (%) of Yes and No Responses to All Variables in 2006

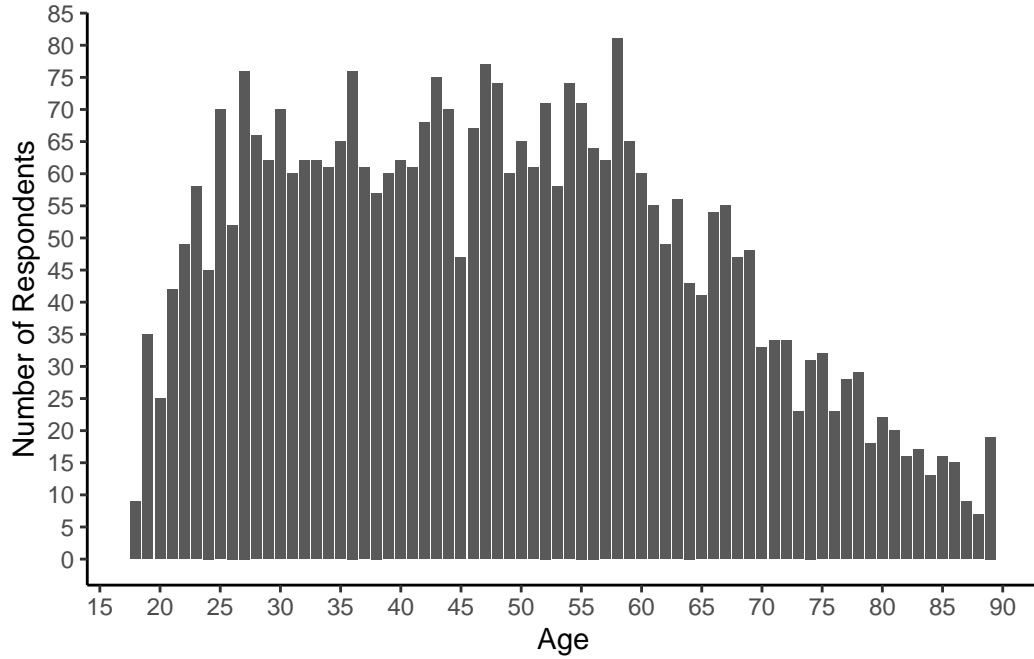Figure 7: Proportion (%) of Yes and No Responses to All Variables in 2016

Figure 8: Number of Respondents by Age

Table 8: Rape Response Proportion (%) by Age

Response	18-24	25-34	35-44	45-54	55-64	65+
yes	6.11	14.33	14.76	14.62	13.19	14.73
no	1.40	3.97	3.94	4.05	4.11	4.80

Table 9: Endangered Health Response Proportion (%) by Age

Response	18-24	25-34	35-44	45-54	55-64	65+
yes	6.34	16.33	16.47	16.64	15.13	17.13
no	1.17	1.97	2.23	2.03	2.17	2.40

Table 10: Low Income Response Proportion (%) by Age

Response	18-24	25-34	35-44	45-54	55-64	65+
yes	3.65	7.96	8.96	8.82	8.36	8.08
no	3.85	10.33	9.73	9.85	8.94	11.45

Table 11: Any Reason Response Proportion (%) by Age

Response	18-24	25-34	35-44	45-54	55-64	65+
yes	3.48	7.79	9.08	9.02	8.25	7.74
no	4.03	10.51	9.62	9.65	9.05	11.79

Table 12: Rape Response Count and Proportions (%) by Sex

Response	Sex	**2006**		**2016**	
		Count	Percentage	Count	Percentage
yes	female	778	55.45	719	54.47
yes	male	625	44.55	601	45.53
no	female	246	60.29	222	59.68
no	male	162	39.71	150	40.32

3.2.2 Sex

The gender demographic along with the responses for each abortion reason are exhibited and filtered by the years 2006 and 2016. The percentages are grouped by the response type of the participant, and then further grouped into their gender. For each table, females made up a higher percentage for both responses in both of the years. Females showed the most support for abortions for the reason of endangered health (Table 13) and the least amount of support for abortions for any reason (Table 15) in 2006 and low income (Table 14) in 2016. Males also showed the most support for abortions in the case where the mother's health is endangered and showed the least amount of support for abortions that are obtained for any reason. While both genders conveyed a lot of support for abortions when there is risk of endangered health, participants also showed support for abortions for victims who were impregnated via rape (Table 12).

Table 13: Endangered Health Response Count and Proportions (%) by Sex

Response	Sex	**2006**		**2016**	
		Count	Percentage	Count	Percentage
yes	female	887	55.89	828	55.31
yes	male	700	44.11	669	44.69
no	female	137	61.16	113	57.95
no	male	87	38.84	82	42.05

Table 14: Low Income Response Count and Proportions (%) by Sex

Response	Sex	2006		2016	
		Count	Percentage	Count	Percentage
yes	female	445	55.14	433	54.19
yes	male	362	44.86	366	45.81
no	female	579	57.67	508	56.89
no	male	425	42.33	385	43.11

Table 15: Any Reason Response Count and Proportions (%) by Sex

Response	Sex	2006		2016	
		Count	Percentage	Count	Percentage
yes	female	424	55.14	449	54.76
yes	male	345	44.86	371	45.24
no	female	600	57.58	492	56.42
no	male	442	42.42	380	43.58

3.2.3 Religious Views

Narrowing down the religions, Figure 9 displays the proportion of yes and no responses specifically for the Protestant and Non-Religious Respondents. The Protestant group was chosen since it was the religious group with the highest proportion of respondents, and the Non-Religious group was chosen to compare how religion may affect one's perspective on the issue. As we can see from Figure 9, a higher proportion of protestant answered "no" consistently for each reason for abortion. These responses may be due to moral teachings and inteprations of life within the Christian religion, prompting more people to believe that abortion is taking away a life. Both Non-Religious and Protestant respondents showed the least support for rape cases or low income for reasons to obtain a legal abortion. Although the fraction of Protestants choosing "no" is higher, the graph illustrates how there is a shared perspective among the two groups regarding perspectives on abortion in cases involving rape or financial hardship.
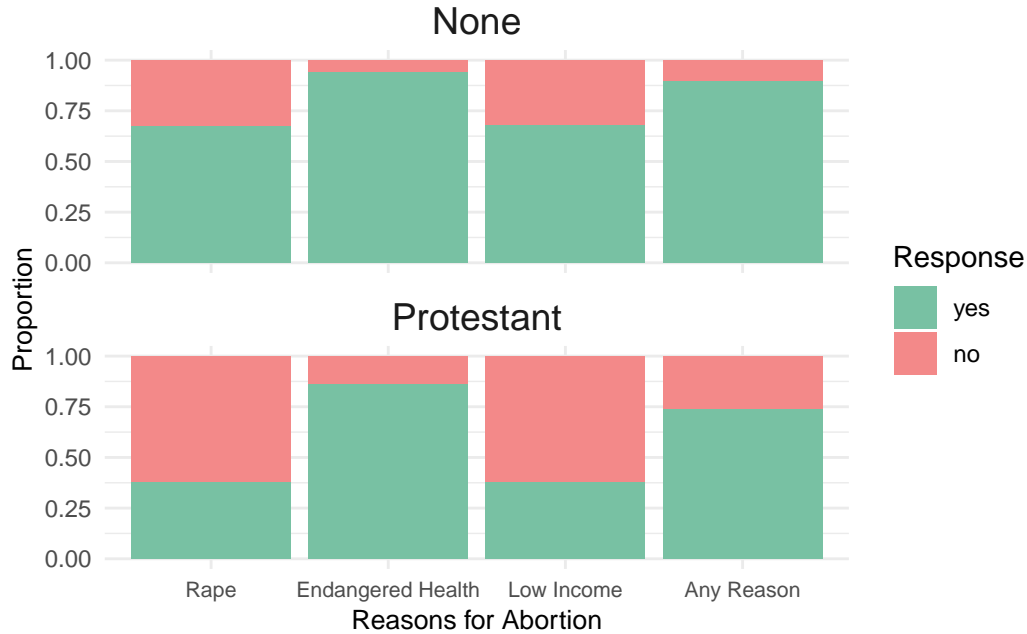
Figure 9: Proportion of Responses from Protestant and Non-Religious Participants

4 Discussion

4.1 Generational Differences

4.2 Sex

4.3 Religious Views

Majority of the American population are religious, and most of the major religions contain teachings that disapprove of abortion. Because of this, researchers have found that there is a strong correlation between individual religiosity and negative abortion attitudes. In a polling, over 50% of respondents who held a religious affiliation with Protestantism or Catholicism stated that abortions were morally unacceptable, comparable to 20% of the survey population who held this belief but did not identify with any religious affiliation (3). Additionally, in a survey with 5,387 abortion patients at a U.S. clinic, 28% of women were not spiritually at peace with their abortion and 36% of women reported having spiritual concerns about their decision. With these statistics in mind, it is evident that the issue of abortion has been intertwined into religious beliefs, due to the complex, ethical and spiritual dimensions that arise.

It is also important to consider the differing perspectives within each religion. After conducting interviews with numerous Protestant leaders, it was shown that the attitudes ranged due to the

complexity of the issue when connected to scripture. There were many grey areas to consider, such as the belief of when life officially begins and specific circumstances where abortions could be morally acceptable (2). Due to the common rule in Christianity where compassion and empathy is to be expressed for your neighbours, many pastors stated they would ensure that they would support the women through their process. However, key similarities in pastoral care included recognizing the importance of life and supporting their advice with scripture, and informing women of the spiritual and emotional toll the abortion may take on them. Otherwise, pastors receive little to no training on these types of matters, since the majority of Christians often are not in favour of the abortion process.

4.4 Economic Status

4.5 Temporal Movements and Law Changes

- will talk about the different law changes and movements occurring before, during, and after the specific years

4.5.1 2006

4.5.2 2016

Appendix

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