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■ RESEARCH ARTICLE

Analyzing the Views of Ethnic Minority Teenagers in Texas on Organ Donation and Organ Donation Policies

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ABSTRACT: The United States currently operates under an opt-in organ donation policy, in which individuals must sign up to become organ donors. Nevada Senate Bill 134 proposed a change from the current opt-in system to an opt-out system that would automatically register individuals as organ donors. It became more pressing than ever to examine the thoughts of the American population on possible organ donation policies. Thus, this research aimed to explore the views of Texas teenagers from minority ethnic backgrounds on organ donation and various organ donation policies. This research utilized a mixed methods approach by distributing a survey to Texas high school teenagers and conducting in-depth interviews with five teenagers from ethnic minorities. After an analysis of variance test and thematic analysis were conducted on the collected data, it was determined that there was a lack of knowledge about organ donation among teenagers. The extent to which family, media, and ethnic background factor into the views of teenagers on organ donation was also determined. Lastly, the research showed a general openness to an opt-out policy, indicating that it could be reasonably implemented in the next few decades.

KEYWORDS: Behavior and Social Sciences; Sociology and Social Psychology; Public Policy; Organ Donation; Ethnic Minorities.

■ Introduction

For decades, the United States has suffered from an organ donation shortage. Organ donation is surgically removing an organ from the donor and placing it into the recipient whose previous organ has failed.[1] The Health Resources and Services Administration[2] states that nearly 110,000 men, women, and children are on the national transplant waiting list.

The United States currently operates under an "opt-in" system, defined as a system in which individuals must actively register to donate their organs. Nevada Senate Bill 134 proposes that drivers "opt out" of organ donation instead.[3] This means citizens would be automatically enrolled as organ donors at birth. If an individual or their family decides they do not want them to be an organ donor, they can be taken off the organ donor registry.

With a feasible transition to an opt-out policy, it was essential to determine the younger generation's opinions about this issue. In addition to teenagers being future voters and possible organ donors, they are also heavily influenced by their family and cultural background. Organ donation was examined at length from several perspectives to provide a clearer understanding of the future of the field in the United States.

The Ethicality of Organ Donation:

The debate over the ethicality of organ donation has been ongoing for over forty years. At the time of its introduction, many thought transplantations were too dangerous. Unforeseeable effects on the organ donor raised the question of whether doctors should advise living patients to donate organs, even if it could negatively affect the patient's health.[4] Another concern at the time was the risk to the living donor in proportion to the recipient's benefit. Essentially, there was a possibility that two lives could be ended trying to save one. Over time though, the perception of death by both the public and the medical profession has shifted significantly. With technological advancements, like mechanical ventilation, organs can be increasingly salvaged for transplantation. According to Arthur Caplan[5], this has resulted in a "shift in the legal definition of death toward the so-called 'brain death'…. Brain-death statutes permitted organs to be harvested from those who had suffered an irreversible loss of brain function…". A survey conducted in 2015 found that 71% of participants favored organ donation, even when transplantation was described as causing the donor's death. This can explain why several countries have started to shift their organ donation policies to accommodate this newer view of organ donation.[6]

The Types of Organ Donation Policies:

The policy in the United States is an opt-in policy, which balances individual rights with virtues like sacrifice and altruism. The efficiency of this policy has been a point of debate for decades, as it is acknowledged that the supply of organs is struggling to keep up with the increasing demand. This system has also resulted in a complicated network of various procurement agencies operating differently. Thus, it can be supported that an opt-in system is not sufficient.[5] As a result, an opt-out system that automatically registers individuals as organ donors has been implemented in several countries. In Belgium, which has an opt-out system, the family refusal rate is only 13% compared to the 49% rate in the U.S.[2] Researcher Romelie Rieu[7] argues in his journal article that at least with an opt-out system, more people are benefitting from organ donation. Additionally,

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Austria's opt-out system has made participants feel that deciding to be an organ donor is less substantial. An opt-out policy implies that being an organ donor is the default. From this perspective, the question people ask themselves when registering or renewing their driver's license is, "Do I want to be in the minority of people unwilling to help others in my community?".[8] The impact of organ donation policies on the psychological understanding of the procedure is an essential component of the discourse around the hesitancy to become an organ donor in certain countries, such as the United States. A significant point of debate regarding a switch to an opt-out system is the system's ethicality. In the United States, the American Society of Transplant Surgeons states that organ donation can only be considered ethical if the individual involved is aware of the decision they are making. It can be argued that if the entire population is not informed of what an opt-out system entails, this system could be unethical.[9] However, in response, it could be argued that inaction can be considered consent, which can be acted on.[10] The common use of the phrase "speak now or forever hold your peace" in modern weddings is an example of how failure to say "no," in essence, constitutes a "yes."

The other organ donation policy that has been proposed is an incentive system. These incentives can be non-monetary or monetary. The research found that more people donated blood when rewarded with gold, silver, and bronze medals, which supports the success of implementing a non-monetary policy. The other possible option is monetary compensation that can be given to the deceased's family. However, researchers have acknowledged that this type of system would come with various risks. For instance, some families may be motivated by compensation, or the public may lose trust in the overall healthcare system.[11] In the past, five provinces in China tried a financial compensation policy in which the Red Cross Society of China paid for funeral expenses and the cost of the grave plot. However, it was concluded that this policy might need to be more efficient in the long term, as the incentive could become less appealing over time.[12] Of course, offering financial incentives to families of deceased individuals to encourage them to consent to organ donation is a controversial idea. There is a debate that this is unethical and undermines the altruistic appeal of the current system. Different types of incentives will have different degrees of acceptability to the public and healthcare professionals. Researchers sent questionnaires to transplant surgeons, transplant coordinators, and critical-care nurses to determine this. They found that all three professions believe alternative policies that offer nonmonetary or indirect monetary incentives that benefit the donor to be morally appropriate. In contrast, policies that provide direct economic incentives to the donor family are ethically inappropriate.[13] This suggests that medical professionals are also skeptical of a system involving financial incentives. Thus, an organ donation policy involving either nonmonetary or monetary incentives would not be well received unless it directly benefits the donor.

The Public Perception of Organ Donation:

Since the start of organ donation, a gap between supply and demand has raised the question of who should receive what. According to professor and researcher Surjit Singh Dhooper[14], there has always been a degree of bias among racial divisions in the distribution process. As of 1986, organs were distributed based on time, medical need, the relationship between donor and recipient, and quality of organ and tissue match. However, data has shown that African American candidates are less likely than White candidates to receive an organ transplant. This presents a concern because, according to Kierans and Cooper, "perception that the selection of organ recipients is fair and equitable is essential to the operation of the entire organ transplantation program." This issue is due to the manifestation of racism in transplantation practices. Up until recently, kidney recipients and donors were matched by blood type. Group O is the most common blood type in the UK, but 38% of the Asian population has Group B blood type. This puts minorities at a disadvantage both when donating and waiting for organs. In the UK, there have even been media campaigns targeted at minority groups that urge them to help their communities by becoming organ donors.[15] This indicates that media considerably influences a person's willingness to become a registered organ donor. With media having an increasingly large presence in the lives of teenagers through social media and the 24-hour news cycle[16], thoughts regarding organ donation may reflect the media being generated. There is also a possibility that reluctance among ethnic minority communities is due to medical mistrust and their cultural beliefs. For example, the deceased donor rate in China is significantly lower than in Western countries. Researchers have found this to be the result of traditional cultural beliefs in China that state a body should remain intact after death.[12] This suggests that cultural beliefs could have a prominent influence on opinions regarding organ donation. Since cultural and religious beliefs often overlap, there was a possibility that religion would influence thoughts on organ donation too. Range and Brazda[17] tested this by gathering participants from students at a Catholic college in the southeastern United States. The participants were given questions that asked them to rate their agreement with a statement on a scale from 1 to 7. This showed that religious involvement did not correlate significantly with any view on organ donation. This study indicates that the effect of an individual's ethnic background on their views toward organ donation should be further researched.

Organ donation continues to be a prevalent topic with several points of debate. With the proposal of a change to an opt-out system in Senate Bill 134, it is more pressing than ever to examine the thoughts of the American population on possible organ donation policies.[3] Research regarding public opinion of guidelines has been done before in various countries, but the views of specifically teenagers from ethnic backgrounds on this issue have yet to be explored. Teenagers provide a unique perspective on the issue, as they are influenced by their own culture, family, experiences, and the media. Thus, this research aims to fill the gap present in the field today about the views of Texas teenagers from ethnic backgrounds on organ donation and various organ donation policies.

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Methods

This research utilized a non-experimental design and an exploratory approach to make connections between the views of teenagers from ethnic minority populations and low organ donation rates. The study was also conducted through a mixed-method process. Quantitative data was collected using a survey, and qualitative data were collected through five interviews with teenagers from ethnic minorities. This method was chosen because it allowed for exploring trends across a sample group and personal experiences specific to an individual. Other research regarding organ donation, like that of Jasper *et al.*[13], also employed a mixed methods approach.

The survey was created on Microsoft Forms, and the interviews were conducted on Microsoft Teams. This was the most accessible platform for the participants in this research to use. The digital survey first included questions regarding the participant's age, location, and ethnic background. The rest of the survey questions followed the structure example below in Figure 1. The complete survey with all 15 questions can be found in Appendix A. All five participants signed an informed consent form and received parental consent before they completed their interview.

Please select the numerical value that best aligns with your emotional response to your statement below, with 1 meaning you strongly disagree with the statement and 7 meaning you strongly agree with the statement. If you are not sure, circle the answer choice labeled "Not sure."

The current United States organ donation policy can be categorized as an opt-in organ donation policy. This means that individuals must sign up to become organ donors. However, many countries worldwide have adopted different policies to increase organ donation rates. An opt-out policy has been implemented in several European countries, such as Belgium. This policy automatically enrolls individuals as organ donors at birth.

"Under an opt-out policy, I would be comfortable being automatically enrolled as an organ donor at birth."

1 2 3 4 5 6 7

Not sure

Figure 1: Example of a question from the survey used.

First, a survey was created with questions about organ donation and organ donation policies. Questions asked participants to rate their response to a statement on a Likert scale from 1 to 7. A Likert scale was chosen, as it is widely used and allows for degrees of opinions to be easily expressed. All questions also included an additional option outside the scale labeled "Not sure."This prevented participants from choosing a random answer if they felt overwhelmed and did not know how to answer the question. Next, the survey was distributed to the sample group of approximately 100 Texas high school students between the ages of 13 and 18 from various ethnic backgrounds. Students signed an informed consent form and received parental consent before they began the survey. Their personal information was kept completely confidential by limiting the viewing of the survey responses to only the researcher. After the survey was distributed, participants that were both willing to be interviewed and were from an ethnic minority community participated in an interview to gain more detailed information on their responses.

Results and Discussion

Survey Findings:

In total, 135 responses to the survey were collected over seven weeks. Of the 135 respondents, 122 answered each question thoroughly and provided usable contact information. Figure 2 displays the demographic characteristics of these 122 respondents.

	Frequency	Percent (%)
Age		
14	42	31.11%
15	30	22.22%
16	28	20.74%
17	19	14.07%
18	3	2.22%
Region of Residence		
South Texas	17	12.59%
Southeast Texas	101	74.81%
West Texas	1	0.74%
Upper Rio Grande Texas	1	0.74%
Capital Texas	1	0.74%
Northwest Texas	1	0.74%
Race		
White	68	50.37%
Hispanic or Latino	17	12.59%
Asian	23	17.04%
Black or African American	13	9.63%
American Indian or Alaska Native	1	0.74%

Figure 2: Demographic characteristics of the 122 survey respondents.

The fourth survey asked participants to rate their agreement to the statement "I am knowledgeable about organ donation" on a scale from one to seven, with one indicating they strongly disagree and seven indicating they strongly agree. The mean response of all teenage participants, including those that selected a 4 and excluding those that selected "Not sure," was 3.82. The median of the data was a response of 4, and the mode was a response of 4. The responses of the participants can be seen in Figure 3 below.

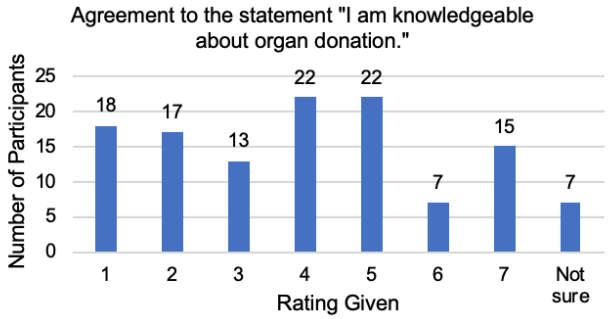

Figure 3: Participant agrees to the statement, " I am knowledgeable about organ donation."

The fifth question of the survey asked participants to rate their agreement with the statement "My views on organ donation have been influenced by my ethnic background" on the same scale. The mean response of all teenage participants was 1.92. The data median was a response of 1, and the mode was a response of 1. The responses can be seen in Figure 4 below

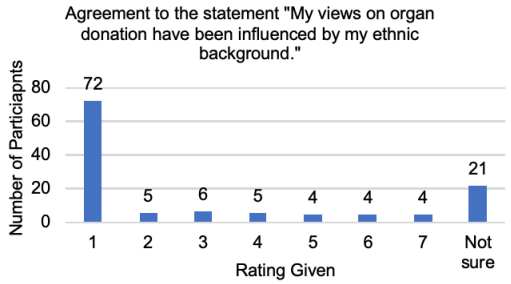

Figure 4: Participant agrees with the statement, "My ethnic background has influenced my views on organ donation."

The seventh question of the survey asked participants to rate their agreement with the statement "My views on organ donation have been influenced by the media I consume" on the same scale. The mean response of all teenage participants was 3.75. The data median was a response of 1, and the mode was a response of 1. The responses of the participants can be seen in Figure 5 below.

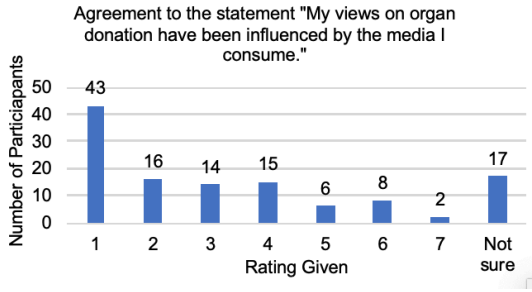

Figure 5: Participant agrees with the statement, " My views on organ donation have been influenced by the media I consume."

The eighth question of the survey asked participants to rate their agreement to the statement, "Under an opt-out policy, I would be comfortable being automatically enrolled as an organ donor at birth" on the same scale. The mean response of all teenage participants was 3.75. The median of the data was a response of 3, and the mode was a response of 1. The responses of the participants can be seen in Figure 6 below.

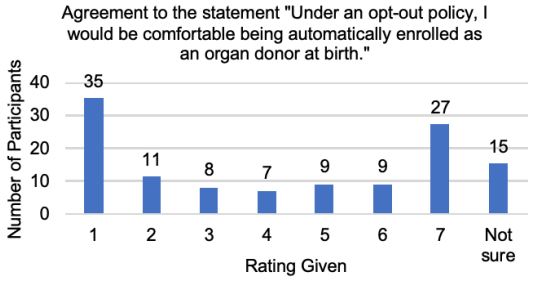

Figure 6: Participant agrees to the statement, " Under an opt-out policy, I would be comfortable being automatically enrolled as an organ donor at birth."

The tenth survey question asked participants to rate their agreement to the statement "An opt-out policy would be unethical." on the same scale. The mean response of all teenage participants was 3.31. The median of the data was a response of 3, and the mode was a response of 1. The responses of the participants can be seen in Figure 7 below.

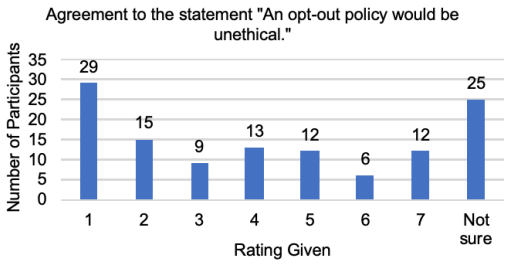

Figure 7: Participant agrees to the statement, " An opt-out policy would be unethical."

The twelfth survey question asked participants to rate their agreement to the statement "Under a monetary incentive system, I would be more likely to register as an organ donor." on the same scale. The mean response of all teenage participants was 3.92. The median of the data was a response of 4, and the mode was a response of 1. The responses of the participants can be seen in Figure 8 below.

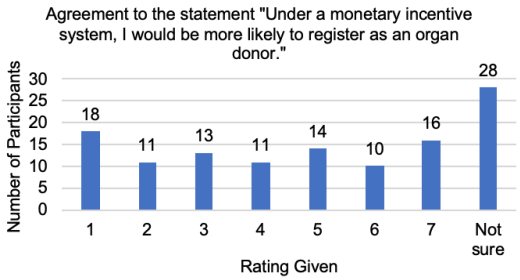

Figure 8: Participant agrees to the statement, " Under a monetary incentive system, I would be more likely to register as an organ donor."

The thirteenth question of the survey asked participants to rate their agreement to the statement "Under a non-monetary incentive system, I would be more likely to register as an organ donor." on the same scale. The mean response of all teenage participants, excluding those that selected "Not sure," was 3.20. The median of the data was a response of 3, and the mode was a response of 1. The responses of the participants can be seen in Figure 9 below.

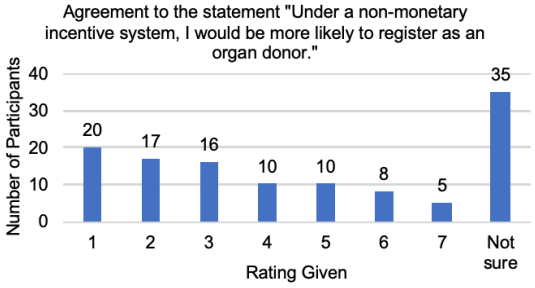

Figure 9: Participant agrees to the statement, " Under a non-monetary incentive system, I would be more likely to register as an organ donor."

The fifteenth and final question of the survey asked participants to rate their agreement to the statement "An incentive policy would be unethical." on the same scale. The mean response of all teenage participants, excluding those that selected "Not sure," was 2.56. The data median was a response of 2, and the mode was a response of 1. The responses of the participants can be seen in Figure 10 below.

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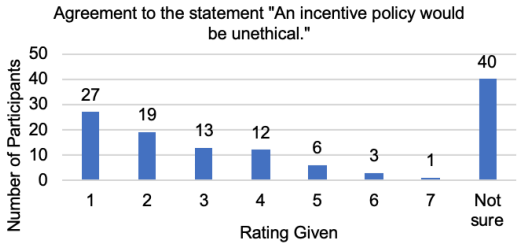

Figure 10: Participant agrees to the statement, " An incentive policy would be unethical."

Interview Findings:

Lastly, 24 participants said they wanted to participate in an interview. Five of these participants were from ethnic minority communities and were contacted to schedule a virtual interview. Only these participants were selected for interviews, as the research aimed to analyze the views of solely ethnic minority teenagers and not in comparison to their White counterparts.

Each interview transcript was then summarized and condensed to only the most prevalent or heavily discussed themes expressed by each participant in response to the questions asked. The main themes of each interview are listed in Figure 11 below. The de-identified transcripts are available upon request.

Interview Participant	Main Themes Expressed
17-year-old- Hispanic female	Never thought about donation Family discouraged donation Opt-out is not unethical Incentive not much of a contributing factor Donation should be more widely discussed Received most influence from parents
18-year-old Hispanic female	Already a registered donor Family of medical professionals Ethnicity not a factor in views Comfortable with opt-out and incentive policies Money would be a contributing factor Younger generation is more open-minded
16-year-old Asian female	Already a registered donor Feels a moral responsibility to help Views differ from others in ethnicity Influenced most by media Monetary incentive policy would be best
16-year-old Asian female	Would register if they know them Family does not talk about donation Does not see donation in media Comfortable under opt-out policy Incentive would not contribute to decision Change not necessary, but beneficial
16-year-old Asian female	Donation is scary topic in culture Not knowledgeable on donation and policies Opt-out policy requires additional education Incentive does not influence decision All policies are ethical Policy change is necessary

Figure 11: Main themes expressed by interview participants.

Analysis:

This research suggested that conclusions could be drawn regarding the views of teenagers from various ethnic minorities on organ donation and organ donation policies. One hundred thirty-five individuals in Texas took a survey asking them to rate their agreement to a statement on a Likert scale from 1 to 7.

An analysis of variance or ANOVA test with a Tukey Honestly Significant Difference post-hoc test with a 95% confidence level was used to determine whether there were statistically significant differences between the five ethnic minorities surveyed. This test was used for further quantitative data analysis because more than two groups were tested for differences.

The five groups used in the ANOVA test were as follows: White, Hispanic or Latino, Asian, Black or African American, and American Indian or Alaska Native. The data was first separated into these five groups. Then, for each analyzed survey question, selections of "Not sure" were excluded to accurately depict the views that the participants confidently submitted.

Six of the 15 questions asked in the initial survey were selected to be statistically analyzed. This was due to the amount of data collected and the value of the data in relation to the research question. Of the six questions selected, 2 produced results of significance.

The first question selected and of significance follows: "My ethnic background has influenced my views." This question was chosen because it further investigated how ethnicity could affect opinions on organ donation. The responses to this statement differed based on how participants felt their culture had impacted them. The number of participants in the ethnic group, their responses' arithmetic mean, and their responses' standard deviation were inputted into an ANOVA test calculator. The results of the test are shown below in Figures 12 and 13.

Source of Variation	Sum of Squares	d.f.	Variance	F	p
Between Groups:	29.7396	4	7.4349	2.6392	0.0385
Within Groups:	267.6204	95	2.8171		
Total:	297.3600	99			

Figure 12: ANOVA table for responses to the statement " My views on organ donation have been influenced by my ethnic background."

	Diff	CI	p
White vs Hispanic or Latino	0.2143, 95%	-1.1804 to 1.6089	0.9929
White vs Asian	0.7815, 95%	-0.5110 to 2.0740	0.4502
White vs Black or African American	1.5952, 95%	0.1105 to 3.0800	0.0288
White vs American Indian or Alaska Native	-0.5714, 95%	-5.2804 to 4.1375	0.9972
Hispanic or Latino vs Asian	0.5672, 95%	-1.1173 to 2.2517	0.8820
Hispanic or Latino vs Black or African American	1.3810, 95%	-0.4552 to 3.2171	0.2323
Hispanic or Latino vs American Indian or Alaska Native	-0.7857, 95%	-5.6170 to 4.0455	0.9912

Asian vs Black or African American	0.8137, 95%	-0.9461 to 2.5735	0.7005
Asian vs American Indian or Alaska Native	-1.3529, 95%	-6.1557 to 3.4498	0.9348
Black or African American vs American Indian or Alaska Native	-2.1667, 95%	-7.0247 to 2.6914	0.7279

Figure 13: Tukey HSD post-hoc test for responses to the statement " My views on organ donation have been influenced by my ethnic background."

Since the p-value of the comparison between White and Black or African American participants was below a 0.05 value, there was a statistical difference in the thoughts between the two surveyed groups on the influence of their ethnic background on their views regarding organ donation. The large sample size difference between the two groups was accounted for when conducting the ANOVA test, but variables such as gender, household income level, and personal experiences were not. Due to these research limitations, it can only be shown that the ethnicity of the participants was a possible factor of this statistical significance rather than the sole precipitator. It is also important to note that the introspection of the participants limits the data. Due to the nature and subject of the research, there is inevitably some degree of bias and error.

The second statement selected and of significance follows: "Under a non-monetary incentive system, I would be more likely to register as an organ donor." This question was chosen because it focused on a non-monetary incentive system. The responses reflected how various participants viewed this system and how they believed they would be affected by it. The responses could be used to predict the effectiveness of a non-monetary incentive system within this demographic. The results of the ANOVA test can be seen below in Figures 14 and 15.

Source of Variation	Sum of Squares	d.f.	Variance	F	p
Between Groups:	44.3712	4	11.0928	3.5786	0.0098
Within Groups:	247.9818	80	3.0998		
Total:	292.3529	84			

Figure 14: ANOVA table for responses to the statement, " Under a non-monetary incentive system, I would be more likely to register as an organ donor."

	Diff	CI	p
White vs Hispanic or Latino	0.7905, 95%	-0.8587 to 2.4397	0.6686
White vs Asian	-0.8913, 95%	-2.2574 to 0.4748	0.3689
White vs Black or African American	-1.5024, 95%	-3.2934 to 0.2886	0.1428
White vs American Indian or Alaska Native	2.6087, 95%	-2.3583 to 7.5757	0.5874
Hispanic or Latino vs Asian	-1.6818, 95%	-3.5624 to 0.1987	0.1018
Hispanic or Latino vs Black or African American	-2.2929, 95%	-4.5015 to -0.0843	0.0379
Hispanic or Latino vs American Indian or Alaska Native	1.8182, 95%	-3.3141 to 6.9505	0.8596
Asian vs Black or African American	-0.6111, 95%	-2.6172 to 1.3950	0.9139
Asian vs American Indian or Alaska Native	3.5000, 95%	-1.5485 to 8.5485	0.3077
Black or African American vs American Indian or Alaska Native	4.1111, 95%	-1.0685 to 9.2907	0.1847

Figure 15: Tukey HSD post-hoc test for responses to the statement, "Under a non-monetary incentive system, I would be more likely to register as an organ donor."

Since the p-value of the comparison between Hispanic or Latino and Black or African American participants was below a 0.05 value, there was a statistical difference in the thoughts between the two surveyed groups on the influence of a non-monetary incentive policy. The sample size difference between the two groups was accounted for when conducting the ANOVA test. However, it still cannot be proven that the ethnicity of the participants was the sole indicator. Again, other variables, such as gender, household income level, and personal experiences, could not be accounted for. There were also different interpretations of the question, as exposed through later interviews. Some participants may have believed the question to be about the personal benefit gained from monetary compensation.

In contrast, others may have thought it to be referring to the altruism of organ donation. In the future, a pre-survey should be done to gauge conflicting interpretations before the research is done. Once again, the data is limited by the introspection of the participants.

Of the 135 surveyed individuals, five participants were interviewed. The five interview transcripts were analyzed for themes to expose the general thoughts of teenagers from ethnic minority communities on organ donation.

The most prevalent theme across the multiple interviews was the influence of family on views of organ donation. Throughout all 5 interviews, the participants mentioned the term "family" 29 times and the terms "parents" or "grandparents" 7 times. When asked the question, "From where would you say you have received the most influence regarding your views on organ donation?", 4 of the 5 responses were "My parents," "My grandmother and my dad," "My family, probably," and "My home." This indicates that the views of teenagers on organ donation have been primarily influenced by their families.

Another prevalent theme throughout the interviews was the role of media in developing views on organ donation. When asked, "In what way would you say media has or hasn't influenced your views?" the participants' views slightly differed. One participant stated, "I've never seen it like, being advertised before." Other participants shared the same sentiment, saying that "…from just what I read, I haven't had the topic of organ donation…" and "…I don't know if I've seen things about organ donation…." In contrast, one participant expressed that media had a prominent role in how they think about organ donation. They stated, "…so many people like on social media or just in the media…need help…." This supports research done by Dhooper[14], which found that organ donation heavily relies on its altruistic appeal to the public to succeed.

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Additionally, when asked about how their ethnic background has influenced their views, the consensus was that they did not sense there was much of an influence at all. One participant stated, "…you're still going to have like a varying percentage of those who will be an organ donor and who won't be an organ donor…." Other responses include "...my family doesn't really talk about it much…" and "…I'm not sure what other South Asians besides my own family thinks…."The survey responses seemed to lean towards this view, as well. The mean response of all teenage participants, excluding those that selected "Not sure," to the statement "My views on organ donation have been influenced by my ethnic background." was 2.3. The results of this research align with a previous study done by Range and Brazda[17], who found that religious involvement did not correlate significantly to any particular view on organ donation in college students. This suggests that while the views of older generations on organ donation may coincide with specific cultural beliefs, younger generations have a different perspective. One participant reflected this with their response that "… as I grew up, it (cultural beliefs) no longer influences me that much."Teenagers may receive most of their information about organ donation from their family and ethnic background, but their own views will continue to develop with time.

One theme that was commonly mentioned across all interviews was a lack of knowledge about organ donation itself. When asked, "Do you meet the requirements to register as an organ donor?" several participants were unaware of the requirements. The same sentiment was reflected when asked to reflect on whether they felt that there was enough information available for them to form their own views on organ donation. Some of the participants' answers included, "…it's never seen in like the TV or the news or anywhere" and "…in school…I don't hear about organ donation". These responses highlight an overall lack of knowledge among the younger generation regarding organ donation. This was also seen in the quantitative results of the survey, in which the mean response of all teenage participants, excluding those that selected "Not sure" to the statement "I am knowledgeable about organ donation," was 3.82. This highlights a need for more information about donations explicitly targeted at teenagers.

Regarding the various organ donation policies, there was a general openness to the idea and implementation of an out-out policy among the teenagers that stated they were already comfortable with being organ donors. One participant explained that they "feel like having an opt-out policy is better for people because…if you really don't want to, then you can go through the…hassle of…opting out." This sentiment that an opt-out system would make the process of becoming an organ donor easier and, therefore, increase donation rates was reflected by another participant, who stated that "…by being registered at birth and then being able to opt-out at any moment, it gives a bigger opportunity to have organs donated." However, it is essential to note that the other significant barrier to increasing organ procurement rates is the criteria for deceased organ donation[6]. When asked about the ethicality of an opt-out system, 4 of the 5 interview participants believed that it would be ethical because there is still a choice to opt-out. One participant explained that "because it's something that you still have a choice of doing…it's really not unethical in my point of view…." The only participant that did not agree expressed reservations about the ethicality of an opt-out system when knowledge about it is not widespread enough. They stated, "… if our country has an opt-out policy and they (people not originally from the United States) don't know that coming here, then that's not exactly very ethical…."This perspective echoes the views of Allard and Fortin[9], who argued that a decision is not ethical if the individual is not aware of the decision in the first place. The two opposing views presented throughout the interviews demonstrate that even within the younger generation, the debate surrounding the ethicality of donation is still prevalent.

Lastly, the role of monetary and non-monetary incentives was discussed throughout the interviews. The five participants presented two views. The first was that incentives would motivate others to engage in living organ donation. One participant stated, "…it would help me be more inclined to do it because you're still receiving some sort of benefit for yourself." However, other participants said they "…would do it (register as an organ donor) just to help others rather than for the incentive." These different views highlight a previously mentioned limitation in the research, as the various participants interpreted the question differently. The confusion over the interpretation of the questions could have been prevented by conducting a pre-survey.

Conclusion

Previous research regarding organ donation has explored debates surrounding the ethicality of assistance and alternative donation policies to the opt-in system. While research has examined influences like religion on organ donation views, a study focused on teenagers from different ethnic backgrounds was not yet done. This research aimed to fill that gap in knowledge through an exploratory and mixed-method approach, utilizing both a quantitative survey and several qualitative interviews. The results of this research present several new conclusions that can be used to guide future organ donation legislation.

First and foremost, it has become apparent through both survey results and interviews that teenagers need to be more knowledgeable about the organ donation process. This presents a vital concern, as knowledge was determined to be an essential factor in evaluating the ethicality of organ donation itself. More information must be provided to young people to guarantee an effective rate of organ donation in the United States and the ethicality of the act itself. This could be done through social media campaigns or educational resources distributed through high schools.

The research also presented several prominent factors that influence the views of teenagers on organ donation. While most participants stated that their family most influenced them, others were influenced by media about organ donation. The importance of family in developing views on organ donation suggests that to increase donation rates in the United States among the younger generation, older generations must first have a favorable view of the issue by increasing the trustworthi

ness of medicine and the medical system. The other influential factor of media can be further utilized to spread information to teenagers about organ donation and the steps they can take to register as organ donors. Lastly, participants were asked about the influence of their ethnic background on their views regarding organ donation. The consensus of those interviewed was that it was not a prominent influence. However, this could not be concluded due to several research limitations. First, there was a significant variation in the number of participants from each ethnic group, resulting in a sample group not consistent with the makeup of Texas. This means that the ANOVA tests were also less effective than possible and could be slightly problematic. Secondly, participants were not equally distributed across Texas, as most of them were located in its Southeast region. Lastly, the five interviewed participants could only represent Asian and Hispanic young women. More research with larger and more representative sample groups must be done to confirm the results of this research across several demographics.

The research concludes that teenagers who are already open to the idea of organ donation believe an opt-out policy to be both an ethical and effective way to increase donation rates in the United States. As for monetary or non-monetary incentive policies, several views were most prominent in this research. The first is that financial compensation would contribute to one's decision to become an organ donor, resulting in an overall increase in donation rates. The second is that the idea of the compensation would not sway those with a positive or negative view of organ donation. This suggests that while an incentive policy would be effective in some regards, it would not be a motivating factor for all individuals. Additional research is needed to explore the benefits of implementing an incentive policy in the United States.

In conclusion, this research regarding the views of teenagers from different ethnic minority backgrounds found a general lack of knowledge surrounding organ donation. Additionally, it explored the extent to which family, media, and ethnic background factor into the views of teenagers on organ donation. Lastly, it analyzed the response of teenagers to the alternative donation policies of opt-out and incentive systems. The conclusions drawn from this research suggest that greater educational organ donation resources must be offered to young people to move forward in the current organ donation landscape.

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Appendix A: Full Survey

For the following questions, please select the numerical value that best aligns with your emotional response to each statement within quotations, with 1 meaning you strongly disagree with the statement and 7 meaning you strongly agree with the statement. If you are not sure, select the answer choice labeled "Not sure".

"I believe organ donation to be a rewarding experience."

1 2 3 4 5 6 7

Not sure

"I am willing to be a registered organ donor."

1 2 3 4 5 6 7

Not sure

"I feel a responsibility to be a registered organ donor."

1 2 3 4 5 6 7

Not sure

"I am knowledgeable about organ donation."

1 2 3 4 5 6 7

Not sure

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"My views on organ donation have been influenced by my ethnic background."

1 2 3 4 5 6 7

Not sure

"My views on organ donation align with those common in my ethnic background."

1 2 3 4 5 6 7

Not sure

"My views on organ donation have been influenced by the media I consume."

1 2 3 4 5 6 7

Not sure

The current United States organ donation policy can be categorized as an opt-in organ donation policy. This means that individuals must sign up to become organ donors. However, many countries around the world have adopted different policies to increase their organ donation rates. An opt-out policy has been implemented in several European countries, such as Belgium. This policy automatically enrolls individuals as organ donors at birth.

"Under an opt-out policy, I would be comfortable being automatically enrolled as an organ donor at birth."

1 2 3 4 5 6 7

Not sure

"An opt-out policy would be more effective in increasing organ donation rates in the United States than an opt-in policy."

1 2 3 4 5 6 7

Not sure

"An opt-out policy would be unethical."

1 2 3 4 5 6 7

Not sure

Another potential organ donation policy entails an incentive system. Essentially, the organ donor or the family of the organ donor would be offered a reward. One possible option is monetary compensation that can be given to the family of the deceased. However, other options do not necessarily have to be financial. For example, blood donors frequently receive medallions or are recognized for their service.

"Under a monetary incentive system, I would be comfortable with my family receiving compensation on my behalf."

1 2 3 4 5 6 7

Not sure

"Under a monetary incentive system, I would be more likely to register as an organ donor."

1 2 3 4 5 6 7

Not sure

"Under a non-monetary incentive system, I would be more likely to register as an organ donor."

1 2 3 4 5 6 7

Not sure

"An overall incentive policy would be more effective in increasing organ donation rates in the United States than an opt-in policy."

1 2 3 4 5 6 7

Not sure

"An incentive policy would be unethical."

1 2 3 4 5 6 7

Not sure