



# Undergraduate Perceptions of Bioethics Topics: A Pilot Study

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## Background

- Bioethics is an important aspect of Vision and Change's core competency of understanding the relationship between biology and society (AAAS, 2011). However, undergraduate experiences learning biology and society topics in bioethics courses is underexplored.
- In interviews, religious undergraduate students reported feeling uncomfortable learning bioethics topics because they feel as if their perspective is undervalued (Barnes & Brownell, 2016).
- Further, even among non-religious students, bioethics topics are often contentious (Gallup, 2019).
- Abortion and gene editing are topics that are commonly covered in bioethics courses that students may or may not support in their personal lives.
- We explored the perceptions of students in one bioethics course about their learning of abortion and gene editing in preparation for a larger study that we will conduct across multiple bioethics courses in fall 2020.

## Research Aims

- To what extent do bioethics students support abortion and gene editing after bioethics instruction?
- What are student comfort levels learning about abortion and gene editing in a bioethics course?
- Are highly religious students less comfortable learning about abortion and gene editing compared to less religious students?
- Why were some students not comfortable while learning about abortion and gene editing and how could the instructor have increased their comfort?

## Pilot Study Methods

- We surveyed students in one college biology bioethics course offered to both biology major and non major students after their bioethics instruction. Students read materials both in support of and opposition to abortion and gene editing before they were surveyed.
- Students were surveyed on their commitment to religion (religiosity) (Cohen et al., 2009).
- Students were asked whether they supported abortion and gene editing in all situations, no situations, or only in certain situations.
  - Students who chose "support only in certain situations" were given a list of common scenarios to choose in which they supported abortion or gene editing.
- Students were also asked to rate their comfort level learning abortion and gene editing on a 1-5 scale from "not at all comfortable" to "completely comfortable."
- Students who did not choose completely comfortable were asked to explain why they were not completely comfortable and how the instruction could have improved their comfort.

## Implications and Next Steps

- Pilot results indicate that religious students may feel less comfortable learning about abortion on average, but students who have personal experience with abortion may also experience discomfort.
- Further, some religious students who did not support abortion were worried to discuss their views because they did not want to hurt students who previously had abortions.
- In fall 2020, we will administer the survey pre- post instruction so we can evaluate how students' perceptions change over the course of their instruction.

## Population

71 bioethics students:

79% biology majors; 76% female and 1% non-binary; 44% liberal, 32% moderate, and 24% conservative; 46% Christian, 10% affiliated with another religion, and 42% unaffiliated with a religion.

## Pilot Results

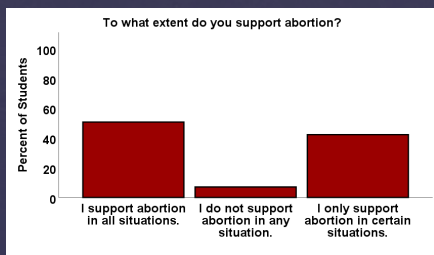


Figure 1: Percent of students who do or do not support abortion in any situation and who support abortion in some situations

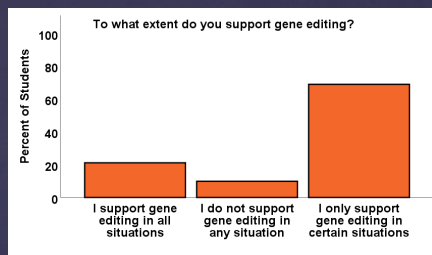


Figure 2: Percent of students who do or do not support gene editing in any situation and who support gene editing in some situations

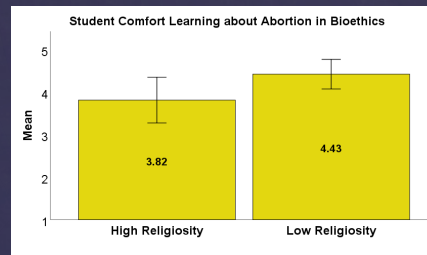


Figure 3: Mean comfort learning about abortion broken down by students who scored high on religiosity and low on religiosity.

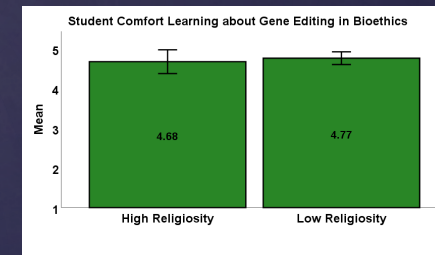


Figure 4: Mean comfort learning about gene editing broken down by students who scored high on religiosity and low on religiosity.

Table 1: Scenarios presented to students who chose "I only support abortion in certain situations." Students were asked to check which scenarios for which they would support abortion.

Scenario	% (n) who support (total n = 30)
If the mother's life or long-term health is at risk	97% (29)
If a woman became pregnant as a result of rape	93% (28)
If the woman became pregnant as a result of incest	77% (23)
If the fetus has a birth defect	43% (13)
If the parents cannot afford the baby	27% (8)
If the parents do not want to have a child	23% (7)
If the parents are not married	23% (7)
If the woman is not married and does not want to get married	10% (3)
If the parents do not want the particular sex of the child	0% (1)

Table 2: Scenarios presented to students who chose "I only support gene editing in certain situations." Students were asked to check which scenarios for which they would support gene editing.

Scenario	% (n) who support (total n = 49)
To cure a life-threatening disease such as sickle cell anemia or certain breast cancer mutations <b>in an adult</b>	96% (47)
To cure a life-threatening disease such as sickle cell anemia or certain breast cancer mutations <b>in a child</b>	90% (44)
To cure a life-threatening disease such as sickle cell anemia or certain breast cancer mutations <b>in an embryo</b>	90% (44)
To cure a debilitating disease such as blindness, muscular dystrophy <b>in adults</b>	80% (39)
To cure a debilitating disease such as blindness, muscular dystrophy <b>in children</b>	82% (40)
To cure a debilitating disease such as blindness, muscular dystrophy, or dwarfism <b>in embryos</b>	82% (40)
To enhance intelligence	10% (5)
To enhance a non-disease, physical characteristic such as height or eye color	4% (2)
To enhance physical strength	4% (2)

### Both those who support and those who do not support abortion felt discomfort and had unique reasons for their discomfort

(Aliyah, does not support abortion): "The way I was raised abortion is not an option. So reading cases where an embryo's life is considered so lightly was much different than I am used to. So that was not an entirely comfortable situation to discuss in a class because I know I am in the minority with my viewpoint."

(Mariah, does not support abortion): "I'm aware my personal morality is unpopular and I didn't want to inadvertently hurt any classmates who had experienced an abortion."

(Christina, supports abortion): "Due to personal experiences, I felt very uncomfortable and angry that I was forced to read an article that was condemning it so much."

### Students did not think that different instruction could have improved their comfort levels and some students said the discomfort was warranted

(Mariah, does not support abortion): "I don't know that I would say I want to feel comfortable in a discussion of such a complex and painful moral question. However, I believe the class provided a good and healthy discussion environment."

(Ariana, does not support abortion): "I don't think it has much to do with the way professors teach. These topics are just uncomfortable to discuss period."

### Student personal experiences with abortion can influence their comfort levels

(Christina, supports abortion): "Our professor could have suggested that we choose whether or not to read an article that was completely against or for abortion. Requiring us to basically read how bad of a person we are is just really insensitive. We should have been able to choose what we wanted to read."

