North Carolina Medical Student Views on Abortion

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BACKGROUND Abortion is a controversial yet common procedure within the United States and North Carolina. Although much effort has been directed at understanding the views of physicians and the general public, the views of medical students on abortion are understudied. This study examines the views of medical students at different stages in training on abortion at a public institution, the University of North Carolina at Chapel Hill School of Medicine. METHODS We surveyed incoming, second year, fourth year, and leave-of-absence medical students at the University of North Carolina at Chapel Hill about their views on abortion. We utilized an IRB-approved, anonymous online Qualtrics-based, cross-sectional survey during the spring of 2014. RESULTS We received 315 responses (58% response rate) from 98 incoming (54.5%), 126 second year (70.0%), and 91 fourth year and leave-of-absence (49.2%) students. The majority of students, regardless of stage of training, felt abortion was morally acceptable (incoming 64.3%, second year 74.0%, and fourth year and leave-of-absence 70.0%). Of the students who found abortion to be acceptable, second year (80.9%) and fourth year and leave-of-absence (85.5%) students found second-trimester abortion more acceptable than incoming students (57.15%, P = .002); second year students (42.2%) had greater acceptability of third-trimester abortions compared to incoming (26.2%) and fourth year and leave-of-absence students (22.2%; P = .03). Religiosity and Republican political affiliation were associated with more conservative views on abortion (P = .002); however, gender or intention to enter into an obstetrics/gynecology residency were not. LIMITATIONS Our study reflects views from a single institution, the University of North Carolina at Chapel Hill School of Medicine. This limits the generalizability of our findings to the greater population of medical students across the country. CONCLUSION Despite the controversy surrounding abortion, our work suggests that medical students at the University of North Carolina at Chapel Hill School of Medicine have accepting views of abortion.

A bortion is a controversial topic in American culture [1, 2]. Despite this controversy and a decline in trained abortion providers, abortion remains a common procedure in the United States and North Carolina. In 2011, 16% of all pregnancies in North Carolina resulted in an induced abortion [3-5]. The American College of Obstetricians and Gynecologists supports the expansion of abortion education, an increase in trained abortion providers, and inclusion of abortion education into formal medical school curricula, given that “access to safe abortion hinges upon the availability of trained abortion providers” [6].

Although much effort has been directed toward better understanding the views of key stakeholders on the topic of abortion, namely physicians and the general public, the views of medical students are understudied [7-11]. Because students, as future clinicians, will be involved in caring for families dealing with unintended or complicated pregnancies and tasked with counseling regarding pregnancy options, their views on these topics as they proceed through training are areas that merit further study.

Medical students report interest in gaining knowledge about the full spectrum of family planning care and appear to have more accepting views of abortion with increased exposure [12, 13]. The purpose of this study is to expand on the literature by describing the moral acceptability of abortion among medical students at the University of North Carolina at Chapel Hill (UNC) School of Medicine and to identify if their views on abortion differ at different points in training, given that UNC is an institution with required preclinical and clinical curricular material addressing family planning and abortion. Our hypothesis was that more senior students with formalized exposure to the topic of abortion would have views that are more accepting compared to students without such formalized exposure.

Methods

To examine medical students’ views on abortion and identify whether they are different among levels of training, we conducted an anonymous, cross-sectional study of medical students at the UNC School of Medicine. The survey was part of a larger study examining medical students’ views on ethically challenging areas of medicine, such as informed consent, physician-assisted death, and end-of-life care. The larger study was completed by the same lead authors of this
current work and was approved by the UNC Institutional Review Board. Demographic data collected included age, whether respondents had children (and if so, number), gender, race, marital status, political and religious affiliation (see Table 1), and anticipated residency specialty (data not shown).

Although based upon prior models, the survey was self-designed, as we were not aware of any validated instruments that covered all the ethical areas we were planning to investigate [11, 13]. The questions regarding abortion (see Figure 1) asked students about their views on the moral acceptability of abortion at different gestational ages and under different clinical circumstances. We intentionally left the definition of morally acceptable to the students’ interpretation. We also incorporated a skip logic that would provide supplemental questions based on the way respondents answered (see Figure 1).

The anonymous survey was administered online using Qualtrics. Using official, class-specific, university-maintained email listservs, incoming first year (MS1), second year (MS2), fourth year (MS4), and fourth year leave-of-absence students (LOA) received an invitation to participate in this study in the spring of 2014. It was made clear that the study was research and not from the university. A follow-up email was sent 2 weeks later requesting participation, and a third and final email was sent after another 2 weeks. Eight weeks after the first email, the survey link was deactivated and data collection stopped. Upon completion of the sur-

| TABLE 1. Respondent Demographics |
|----------------------------------|
| **Class size**                  |
| Total                           | 545 | 180 | 180 | 185 |
| Respondents                     | 315 (57.8%) | 98 (54.4%) | 126 (70.0%) | 91 (49.2%) |
| Age                             | 25.4 ± 3.0 | 241 ± 2.8 | 25.2 ± 2.4 | 27.4 ± 2.6 | < .001 |
| Number of children              | 0.1 ± 0.3 | 0 ± 0 | 0.1 ± 0.3 | 0.1 ± 0.4 |
| Gender                          | .18 |
| Female                          | 165 (52.4%) | 56 (54.4%) | 58 (46.0%) | 51 (56.0%) |
| Male                            | 150 (47.6%) | 42 (42.9%) | 68 (54.0%) | 40 (44.0%) |
| Race                            | .29 |
| African American                | 26 (8.3%) | 9 (9.0%) | 9 (7.1%) | 8 (8.8%) |
| Asian                           | 38 (12.1%) | 12 (12.0%) | 14 (11.0%) | 12 (13.2%) |
| Caucasian                       | 224 (71.3%) | 70 (70.0%) | 92 (72.4%) | 62 (68.1%) |
| Hispanic                        | 12 (3.8%) | 6 (6.0%) | 5 (3.9%) | 1 (1.1%) |
| Native American                 | 2 (0.64%) | 0 (0%) | 1 (0.8%) | 1 (1.1%) |
| Other                           | 12 (3.8%) | 3 (3.0%) | 6 (4.7%) | 3 (3.3%) |
| Marital status                  | .06 |
| Single                          | 241 (76.5%) | 77 (78.6%) | 103 (81.7%) | 61 (67.0%) |
| Never married                   | 8 (2.5%) | 4 (4.1%) | 3 (2.4%) | 1 (1.1%) |
| Married                         | 64 (20.3%) | 17 (17.3%) | 18 (14.3%) | 29 (31.9%) |
| Separated                       | 0 (0%) | 0 (0%) | 1 (0.8%) | 0 (0%) |
| Divorced                        | 0 (0%) | 0 (0%) | 1 (0.8%) | 0 (0%) |
| Political affiliation           | .46 |
| Democrat                        | 166 (52.3%) | 45 (45.9%) | 68 (54.0%) | 53 (58.2%) |
| Republican                      | 50 (16%) | 22 (22.4%) | 16 (12.7%) | 12 (13.2%) |
| Libertarian                     | 17 (5.4%) | 5 (5.1%) | 8 (6.3%) | 4 (4.4%) |
| Other                           | 7 (2.2%) | 1 (1.0%) | 4 (3.2%) | 2 (2.2%) |
| Unaffiliated                    | 74 (2.4%) | 25 (25.5%) | 30 (23.8%) | 19 (20.9%) |
| Religious affiliation           | 58 |
| Agnostic                        | 22 (7%) | 8 (8.2%) | 8 (6.3%) | 6 (6.6%) |
| Atheism                         | 21 (6.7%) | 4 (4.1%) | 13 (10.3%) | 4 (4.4%) |
| Buddhism                        | 4 (1.3%) | 0 (0%) | 4 (3.2%) | 0 (0%) |
| Evangelical Christian           | 29 (9.2%) | 9 (9.2%) | 12 (9.5%) | 8 (8.8%) |
| Hinduism                        | 9 (2.9%) | 2 (2.0%) | 5 (4.0%) | 2 (2.2%) |
| Judaism                         | 14 (4.5%) | 3 (3.1%) | 4 (3.2%) | 7 (7.7%) |
| Islam                           | 4 (1.3%) | 1 (1%) | 1 (0.8%) | 2 (2.2%) |
| Nonreligious                    | 71 (22.6%) | 21 (21.4%) | 29 (23.0%) | 21 (23.1%) |
| Other                           | 15 (4.8%) | 6 (6.1%) | 5 (4.0%) | 4 (4.4%) |
| Protestant Christian            | 90 (28.7%) | 32 (32.7%) | 33 (26.2%) | 25 (27.5%) |
| Roman Catholic                  | 32 (10.2%) | 10 (10.2%) | 11 (8.7%) | 11 (12.1%) |
| Unitarian Universalist          | 3 (1%) | 2 (2.0%) | 1 (0.8%) | 0 (0%) |

Note. MS1, incoming first year; MS2, second year; MS4-LOA, fourth year and fourth year leave-of-absence.
Do you believe that abortion under any circumstance is morally acceptable?

**If yes:**
Do you feel that second trimester (13-28 week) abortions are morally acceptable?

- - AND - 
Do you believe that third trimester abortions (29-40 weeks) are morally acceptable?

**If no:**
Would abortion in the case of pregnancy that was the result of rape or incest be morally acceptable?

- - AND - 
Would abortion of a pregnancy that will result in serious physical, genetic, or mental defects be morally acceptable?

**Survey Vehicle**

Do you believe that abortion under any circumstance is morally acceptable?

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Would abortion of a pregnancy that will result in serious physical, genetic, or mental defects be morally acceptable?

vey, respondents could elect to enter into a lottery for 1 of 6 Amazon gift cards; this lottery was distinct from the survey, and respondents could in no way be linked to their survey answers.

The MS1 group comprised of students who had received acceptance to medical school but had not yet started (i.e., incoming students), and therefore had no curricular exposure to abortion. MS2 students were near the end of their second year in medical school and had finished the preclinical portion of their training, which includes a course titled “Reproductive Medicine” with dedicated lectures on abortion and all contraceptive methods. Students are held responsible for understanding all course content through end-of-course exams. MS4 students were fourth-year medical students in their final year of medical school; in addition to pre-clinical abortion material, these students had completed a required obstetrics and gynecology (OB/GYN) clerkship with varying levels of clinical exposure to abortion. Interested students had the opportunity to spend several clinic sessions in the abortion clinic and follow those patients to the operating room. The clerkship also includes 2 teaching sessions specifically on contraception and abortion with sub-specialty trained faculty and fellows. LOA students were also fourth-year medical students, but were students who had taken a leave of absence after their third year to pursue additional academic or research interests (e.g., Masters of Public Health). Following this leave, LOA students would then return to complete the final clinical year of medical school and thus, had the same formal exposure as their MS4 classmates.

For analysis of demographic characteristics regarding religion, respondents who self-identified as nonreligious, agnostic, or atheistic were categorized as “non-religious,” while respondents who indicated a specific affiliation (e.g., Buddhism or Protestant Christian) were categorized as “religious.” Combining the MS4 and LOA groups did not alter the results, so they were collapsed into a single group given the small LOA size (N = 24). Data were analyzed in R (Version 3.3.1), and responses were compared using χ² tests and 2-sample proportion tests.

**Results**

**Respondents**

We received 315 out of 545 possible responses (58% response rate) with 98 MS1 (54.5%), 126 MS2 (70.0%), and 91 MS4-LOA (49.2%) student responses. The LOA group had a relatively small sample size (N = 24). Since LOA students were closest to MS4 students, the data were analyzed in a combined MS4-LOA group; the significant results for the combined MS4-LOA group were the same as those observed for the MS4 group alone, so the combined group was used for all analyses. Demographic characteristics were similar among the respondent groups; there were no significant differences in gender, race, marital status, political affiliation, number of children, or religious affiliation, although MS4-LOA students were older (P < .001; see Table 1).

**Abortion**

The majority of students, regardless of stage of training, felt abortion was morally acceptable (MS1 64.3%, MS2 74.0%, MS4-LOA 70.0%). Of the students who found abortion to be acceptable, MS2 (80.9%) and MS4-LOA (85.5%) students found second-trimester abortion more acceptable than MS1 students (57.15%; P = .002); MS2 stu-
Medical Student Views on Abortion (continued)

**Q4:** Would abortion in the case of pregnancy that was the result of rape or incest be morally acceptable?

- Yes: MS1 60.0% (N = 35), MS2 67.7% (N = 31), MS4-LOA 66.7% (N = 27)
- No: MS1 35.7% (N = 35), MS2 32.3% (N = 31), MS4-LOA 33.3% (N = 22)

**Q5:** Would abortion of a pregnancy that will result in serious physical, genetic, or mental defects be morally acceptable?

- Yes: MS1 57.1% (N = 35), MS2 64.5% (N = 31), MS4-LOA 51.9% (N = 22)
- No: MS1 42.9% (N = 35), MS2 35.5% (N = 31), MS4-LOA 48.1% (N = 22)

Note. MS1, incoming first year; MS2, second year; MS4-LOA, fourth year and fourth year leave-of-absence.

We suggest that medical school curricula not only cover the basic science and epidemiology of abortion, but also include strategies for helping medical students deliver patient-centered counseling, even in situations that may be at odds with their personal beliefs [16].

**Limitations and Strengths**

This study has several limitations. First, this evaluation of students’ views on abortion was limited to a single institution, the UNC School of Medicine. This approach was intentional and designed such that direct comparisons could be made between the different class groups, who have similar demographic characteristics but different educational exposure to these topics. Second, this study was completed at an institution in a state that is conservative relative to abortion [15]; the majority (80%) of students at the UNC School of Medicine are North Carolina residents. Although the views of these students are likely representative of other North Carolina medical students at large, they cannot be generalized to other parts of the country. Nonetheless, our respondents’ views do appear similar to views reported by Shotorbani and colleagues (2004) among clinical students at the University of Washington, 70% of whom found abortion acceptable in all circumstances [11]. These results add to the minimal literature around medical student views on the moral acceptability of abortion. Prior to more routine inclusion of abortion in pre-clinical and clinical student views about the moral acceptability of abortion.

Prior to more routine inclusion of abortion in pre-clinical and clinical care providers, this study was conducted at a university in the Pacific Northwest, an area typically thought of as less conservative with regards to abortion than the Southeast [11, 14, 15].

Overall, there were no group differences regarding acceptability of abortion. The lack of group differences may be reflective of the high acceptance of abortion at baseline, leaving minimal room for change through formal academic exposure. However, among respondents who found abortion acceptable, second trimester abortions were found to be more acceptable by students with clinical and/or pre-clinical exposure. These findings do support literature demonstrating that increased exposure to the topic of abortion results in more accepting views [13].

In trying to better understand factors that might be associated with views on abortion, we found that religiosity and political affiliation, not gender or intention to enter into an OB/GYN residency, were associated with views that are more conservative. This suggests that students’ religious and political beliefs could impact their clinical opinion. However, further study is necessary to determine whether a causal association exists and if it affects clinical care.
In our setting where students have preclinical and clinical exposure to abortion, levels of acceptability are high. Our study may suffer from response bias given our 58% response rate. However, our respondent groups lack any notable differences—with the exception of respondent age—and basic demographic characteristics, including age, gender, and ethnicity, are reflective of the general medical student body at the UNC School of Medicine. It is unclear whether the acceptance we report reflects a trend among clinical training, most students expressed interest in having this educational exposure but didn’t necessarily have the option [8, 12, 17, 18]. Although the accrediting body for OB/GYN resident programs has clear statements regarding the requirement that residents have access to abortion training, guidance is less clear at the medical school level [6].

### TABLE 2A-D.

| Respondent Subgroup Analyses Reflecting Gender-Specific differences (2A), Religious-Specific Differences (2B), Residency Intention Specific Differences (2C), and Political Affiliation-Specific Views (2D) on Abortion |
|---|---|---|---|---|
| **A: Gender-specific views** | **Percent of responses as “Yes” (99% CI)** | **Question** | **N** | **Female** | **Male** | **P value** |
| Abortion morally acceptable | | Under any circumstance | 311 | 72.0 (62.9–81.2) | 67.3 (57.5–77.2) | .37 |
| From rape/incest | 93 | 71.1 (53.7–88.5) | 58.3 (40.0–76.7) | .2 |
| Result in defects | 93 | 57.8 (38.8–76.8) | 58.3 (40.0–76.7) | .96 |
| During 2nd trimester | 214 | 72.8 (62.1–83.6) | 78.0 (67.3–88.7) | .38 |
| During 3rd trimester | 214 | 31.0 (20.0–42.1) | 32.7 (20.4–44.9) | .8 |
| **B: Religious-specific views** | **Percent of responses as “Yes” (99% CI)** | **Question** | **N** | **Not religious** | **Religious** | **P value** |
| Abortion morally acceptable | | Under any circumstance | 296 | 80.5 (70.9–90.1) | 63.4 (54.2–72.6) | .002 |
| From rape/incest | 88 | 95.5 (84.0–100) | 54.5 (38.7–70.4) | <.001 |
| Result in defects | 88 | 95.5 (84.0–100) | 45.5 (29.6–61.3) | <.001 |
| During 2nd trimester | 204 | 88.8 (80.1–97.4) | 66.1 (54.7–77.5) | <.001 |
| During 3rd trimester | 205 | 46.7 (33.1–60.2) | 20.9 (11.1–30.6) | <.001 |
| **C: Intent to enter OB/GYN residency-specific views** | **Percent of responses as “Yes” (99% CI)** | **Question** | **N** | **Not OB/GYN** | **OB/GYN** | **P value** |
| Abortion morally acceptable | | Under any circumstance | 311 | 69.6 (62.4–76.9) | 70.7 (52.4–89.1) | .89 |
| From rape/incest | 93 | 61.7 (47.8–75.7) | 83.3 (55.6–100) | .14 |
| Result in defects | 93 | 56.8 (42.6–71.0) | 66.7 (31.6–100) | .52 |
| During 2nd trimester | 214 | 76.8 (68.7–84.8) | 65.5 (42.7–88.3) | .19 |
| During 3rd trimester | 214 | 31.9 (23.1–40.7) | 31.0 (8.9–53.2) | .93 |
| **D: Political affiliation-specific views** | **Percent of responses as “Yes” (99% CI)** | **Question** | **N** | **Republican** | **Democrat** | **Independent** | **P value** |
| Abortion morally acceptable | | Under any circumstance | 287 | 53.1 (34.7–71.5) | 77.1 (68.7–85.5) | 62.5 (47.8–77.2) | .002 |
| From rape/incest | 87 | 30.4 (5.7–55.2) | 91.6 (80.3–100) | 63.0 (39.0–86.9) | <.001 |
| Result in defects | 87 | 26.1 (2.5–49.7) | 86.5 (72.0–100) | 51.9 (27.0–76.7) | <.001 |
| During 2nd trimester | 196 | 42.3 (17.3–67.3) | 87.3 (79.6–95.0) | 56.8 (37.6–76.1) | <.001 |
| During 3rd trimester | 197 | 12.0 (0.2–28.8) | 37.5 (26.5–48.5) | 25.0 (8.2–41.8) | .025 |

Note. CI, confidence interval.
young people or medical students nationally or is a result of a level of awareness among the student body, given increased legislative activity around abortion in North Carolina.

Conclusion

Medical students are confronted with numerous clinical circumstances that challenge their preconceived ideas about medicine, health care, and ethics. As educators, our role is to provide them with tools to confront these circumstances in a patient-centered way. For some students, reproductive health care, and specifically abortion, offers many of these challenging clinical circumstances. Our findings suggest that future physicians from UNC generally have accepting views of abortion. Ongoing efforts to reform medical school curriculum should focus on providing students the tools required to deliver patient-centered care while navigating their own personal, political, or religious beliefs. NCMJ

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Acknowledgments

We thank the medical students that participated in this study. We also thank Dr. Lawrence Rosenfeld and Jason Bottcher for their advice and critical review.

Potential conflicts of interest. All authors have no relevant conflicts of interest.

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