



Medical and midwifery student attitudes toward moral acceptability and legality of abortion, following decriminalization of abortion in Chile



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ABSTRACT

Objective: Soon after Chile decriminalized abortion under three limited circumstances in 2017, we assessed medical and midwifery students' attitudes about abortion morality and legality when compared to national opinions.

Study design: We administered an anonymous, online survey to medical and midwifery students from seven secular and religiously-affiliated universities in Santiago, Chile. We compared student responses to a nationally representative public opinion survey.

Main outcome measures: We examined three main outcomes related to abortion attitudes: (1) moral acceptability of abortion and legal support for abortion in (2) one or (3) all listed circumstances. We used general estimating equations to examine whether university type, field of study, and other student characteristics are associated with each outcome and compared student views toward abortion legality with those of the general public.

Results: Among the 369 student respondents, most agreed that abortion can be a good thing for some women in some situations (82%). When compared to the general public, a larger proportion of students supported decriminalizing abortion in at least one (83% and 97%, respectively) or all (17% and 51%, respectively) seven listed circumstances. While secular university students held significantly more favorable views about abortion morality and legality than students from religiously-affiliated universities, the majority of students from both university types supported abortion in the three cases in which it was recently decriminalized.

Conclusions: Medical and midwifery students from not only secular but also religiously-affiliated universities are very supportive of the recent decriminalization of abortion, which presents training opportunities for both types of universities.

Introduction

On August 21st, 2017, Chile's constitutional tribunal approved a bill decriminalizing abortion in three specific circumstances: when the pregnant person's life is at risk, when the fetus is not compatible with life outside the uterus, and when the pregnancy is a result of rape [1]. Before the ban was lifted, Chile was one of few countries around the world in which a woman could face legal consequences including incarceration for undergoing an abortion with no exceptions for rape or health of the woman or fetus [2]. Providers of abortion also risked jail time if found to have performed an abortion, which resulted in fear of treating patients with high-risk pregnancies or symptoms of abortion complication and reporting on suspected abortion patients [2]. While women and providers still risk prosecution for undergoing or

performing abortions outside the limits of the current law, legal reform presents a new opportunity for medical and midwifery schools training future providers to serve people in need of abortion.

High rates of support for legal abortion in Chile in the circumstances in which it was decriminalized are consistent across national polls in the years leading up to 2017 when the ban was eased [3–5]. In 2015, 66% of Chileans supported the idea of abortion being legal if the pregnancy was the result of rape, 70% in the case of an unviable fetus, and 73% supported legal abortion to save the life of the pregnant person [6]. However, support is lower for pregnant women and their partners having the ability to choose to have an abortion and for choosing abortion in circumstances such as economic hardship or when the women is under 14 years of age among others [3,6]. These attitudes are consistent with findings in other Latin American countries where

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abortion is restricted on the same or similar grounds as it is in Chile [7–9].

The extent to which clinical students and providers embrace or welcome a change in Chile's abortion law is still unclear. Studies from Mexico, Brazil, and Argentina indicated that a majority of physicians, both general practitioners and obstetrics and gynecology (OB/GYN) specialists, support abortion decriminalization though varying by circumstance [9–13]. One study conducted in Brazil in 2013 compared the opinions of the general public toward abortion with those of medical students within São Paulo state. Support of abortion decriminalization among medical students was about 10% higher than the public in circumstances in which it is legal under Brazilian law and 20% higher in more liberal circumstances [14]. The public opinions in Brazil included in the comparison were very similar to those observed in the national opinion data in Chile in 2015 [6].

While support for decriminalization of abortion in an abstract sense is one thing, attitudes toward abortion can become more complex once one has had tangible experience with it. A recent study with university students in Ghana, which has similar abortion laws as Chile, found that students who know someone who has had an abortion are more likely to support women's right to an abortion than those who did not have any personal connection with an abortion experience [15]. A study among OB/GYNs in Brazil revealed that physicians are more likely to accept abortion as necessary when directly confronted with it. In this study, most agreed that abortion should be legal in the circumstances of rape, risk to the woman's life, and fetal malformation, however even among those who believed abortion should not be legal under any circumstances, 13%–58% had helped a patient, relative, or partner have an abortion or had undergone one themselves when confronted with an unwanted pregnancy [12].

Following the passage of the law, the Chilean Society of Obstetrics and Gynecology declared their intent to uphold the new legal framework and provide the infrastructure to do so [16]. While the current law only allows physicians to perform the abortion procedure, all people directly involved in the care, such as nurses, midwives, anesthetists, and others, can claim conscientious objection under any of the three legal grounds (women's health, fetal indication, or rape). Private universities, hospitals and other institutions can also claim conscientious objection at the institutional level. Yet, those serving women seeking abortion, including objecting providers and institutions, must offer people information about alternatives to abortion, referrals to abortion services if unable to provide these services, and psychological and emotional support services. Building a workforce of providers able to provide objective and non-judgmental abortion-related care is essential to ensuring access to quality abortion services. We must understand where medical and midwifery students stand in regard to the moral complexities of abortion and whether they support the newly liberalized legal framework. However, there is a distinct lack of knowledge of the attitudes toward moral acceptability or legality of abortion among future providers who are likely to serve people seeking abortion in Chile.

This study seeks to understand whether future health care providers support abortion decriminalization or find it morally acceptable by surveying Chilean midwifery students and medical students generally as well as those seeking specialization in OB/GYN. Previously published findings from this survey found that most Chilean medical and midwifery student respondents are interested in becoming trained to provide abortion services and believed their universities should offer such training with marked differences by field of study and university [17]. We build upon this work, with a specific interest in exploring medical and midwifery students' views about abortion and assessing whether their views differ by field of study (seeking medical or midwifery degree) and university type (secular or religiously-affiliated), and whether student views differ from those of the general public. Studies from other countries suggest that midwifery students hold more conservative views about abortion than medical students [18], but none have explored

differences in attitudes between secular and religiously-affiliated universities. This study will deepen our understanding about the extent that and under which circumstances students from both secular and religiously-affiliated universities support abortion, which is critical to identifying future training needs.

Methods

We conducted a cross-sectional study evaluating the perspectives of future providers in Chile who are likely to work with people seeking abortion care, using a web-based survey. Between October 2017 and May 2018, we fielded a self-administered, web-based survey to university students seeking degrees in medicine, medicine with a specialization in OB/GYN, and midwifery. We identified seven universities offering these degrees located in the Metropolitan Region of Santiago, Chile's capital and largest city, (referred to henceforth as the Metropolitan Region). The study received approval from the Ethics Committee of the University of Diego Portales.

Student sample

We selected seven universities in the Metropolitan Region that have departments of medicine and offer specialization in OB/GYN or midwifery. These seven universities include a mix of public and private, secular and religiously-affiliated (all Catholic) universities and house approximately 7,000 students across seven medical and five midwifery departments. Students of the departments of medicine and midwifery at the selected universities were eligible to participate in an anonymous, self-administered online survey. We powered our sample to detect mean differences in abortion attitudes by university type (secular vs religious university) and degree type (medical vs midwifery). We estimated that a sample of 300, with a minimum group size of 90, could detect a mean difference of 0.45, on a 4-point scale, and as reported in a published abortion stigma subscale, with a standard deviation of 1.07, and a two-sided alpha of 5% and 80% power [19].

Recruitment

We reached out to the administrations and student federations at each of the selected departments via email describing the study and inviting them to participate by disseminating the survey to their students. Three of the department administrators emailed the survey directly out to their students. At two universities, the department student federations emailed the survey directly to students or posted the survey link on a student group Facebook page. At the two non-responding universities, research staff distributed small flyers with the survey link in person.

Survey

We developed a survey to measure students' attitudes toward abortion provision in different circumstances both from a moral and legal standpoint. The survey also included questions around students' attitudes toward contentious objection and views on confidentiality and reporting. Participating students used an anonymous link or QR code to access the Qualtrics survey on a web browser online either through a computer or a mobile phone. Participants read a consent form and gave their consent to participate before beginning the survey. As compensation, participants had the option of entering into a raffle to win one of twenty-five gift cards for 24,000 Chilean Pesos, equivalent to approximately \$40 USD.

Outcome variables

We examined responses to three outcomes related to abortion attitudes. These included moral acceptability of abortion (ten, 5-point

Likert items ranging from strongly agree to strongly disagree) which were adapted from the published literature [19,20] and two attitudes toward abortion legality, which were based on seven, 2-point items (agree or disagree) identical to those included in the University of Diego Portales national polling data [6]. After determining that the moral acceptability items had an acceptable Cronbach's alpha reliability coefficient (> 0.80), we combined items to create one continuous outcome variable, ranging from 1 to 5, with higher scores indicating greater moral acceptability for abortion. For the abortion legality outcome, we created two dichotomous variables for those who agreed that abortion should be legal in at least one or more of the seven mentioned circumstances (1) or not (0) and in all of the circumstances (1) or not (0). We excluded missing responses for these outcomes from all analyses.

Independent variables

For multivariable analyses of the medical and midwifery student sample, our primary independent variables of interest were university type (secular or religiously-affiliated) and field of study (medicine-undecided specialty, medicine-OB/GYN specialty, and midwifery). We selected model covariates known to be associated with abortion attitudes according to the published literature [21]. These included gender, age group, region where student completed high school (Metropolitan Region vs other), political affiliation (none/center, right/center right, and left/center left), religion (Catholic or other religion vs no religious affiliation), frequency of attendance of religious services, and year in school.

National public opinion data

The University of Diego Portales (UDP) national public opinion survey is based on a national probability sample representative of Chile's adult population living in an urban area. It is conducted as either a face-to-face or telephone interview with an adult representative (age range: 18–89) of randomly selected households and includes a range of political topics including decriminalization of abortion. The most recent publicly available survey data is from 2015, is based on 1,302 interviews, and was used to compare how medical and midwifery student views about abortion legality compare to national public opinion data [6].

Statistical analyses

We estimated frequencies for participant characteristics (Table 1), as well as student attitudes about abortion morality (Table 2) and legality (Table 3). We compared students' support for abortion decriminalization to national public opinion data (Table 3) and assessed the internal consistency Cronbach's alpha reliability coefficients for each abortion attitude domain. For multivariable models, we used logistic general estimating equation (GEE) models, and selected model covariates a priori. Analyses accounted for clustering by university and were conducted in STATA 15. Significance was reported at $P \leq 0.05$.

Results

Respondent characteristics

We distributed the anonymous survey link to medical and midwifery students at each university, of which 459 clicked on the link to the survey. We removed responses from participants who completed less than 40% of the survey ($n = 68$), those who did not meet the inclusion criteria ($n = 9$), and those who did not complete the section around abortion attitudes ($n = 13$), leaving a final sample of 369 and a completion rate of 82% of those who were eligible and opened the survey (369/450). There were no statistically significant differences by

Table 1
Participant characteristics.

	n	%
Total	369	100
Age group		
17-19	91	25
20-24	218	59
25-37	60	16
Female	233	63
Field of study		
Midwifery	92	25
Medicine-Undecided specialty	182	49
Medicine-OB/GYN specialty	95	26
Year in school		
1st-2nd	158	43
3rd-4th	124	34
5th-6th	47	13
7 th /Graduated	40	11
Born in Chile	361	98
Lived one year or more outside of Chile	23	6
Region where completed high school		
Metropolitan region of Santiago, Chile	283	77
Northern Chile	29	8
Southern Chile	53	14
Other country	4	1
Single/not married	361	98
Political affiliation		
Right/center right	93	25
Center	32	9
Center left/left	170	46
None	74	20
Frequency of religious attendance		
Once a week/2-3 times a month	43	12
Once a month/2-3 times a year	61	17
Hardly ever/never	265	72
Religion		
Catholic	140	38
Evangelical/Protestant	15	4
Other	15	4
None/Atheist/Agnostic	199	54
Attends a non-religious university	287	78
Attends a private university	230	62

gender, religion, age, year in school, type of school, or field of study between the final sample ($n = 369$) and those with incomplete surveys. However, participants whose political affiliation was described as center or none were significantly ($p < .05$) less likely to complete the survey (60%) than those who identified as left/center left (94%) or right/center right (95%).

Student demographic and university characteristics are described in Table 1. Nearly two-thirds (63%) of the final sample identified as female, 78% were attending a secular university, 62% were attending a private university, and 75% were studying medicine (49% undecided specialty and 26% OB/GYN specialty).

Moral acceptability of abortion

We describe students' personal views about the moral acceptability of abortion, as well their perceptions of their peers' views in Table 2. Most students agreed/strongly agreed that abortion can be a good thing for some women in some situations (82%), that abortion is a woman's right (70%), and that abortion is acceptable past the first trimester in exceptional circumstances (67%). Approximately one in five respondents agreed/strongly agreed that abortion is the same as murder (20%) and one in ten (10%) agreed/strongly agreed that abortion is always wrong. All individual moral acceptability items differed significantly based on whether or not the respondent was attending a religiously-affiliated university; one item differed significantly by field of study. Students perceived their personal views about the moral acceptability of abortion to be very similar to their peers.

In multivariable analyses, attending a secular university (Beta: 0.49,

Table 2
Morality: Students' agreement (% agree/strongly agree) with the moral acceptability of abortion in a variety of circumstances vs perception of peers' attitudes.

Moral acceptability of abortion	Religiously-affiliated university		Field of study					
	Total	Yes (n = 82) (Ref)	No (n = 287)		Medicine-Undecided spec. (n = 182)		Midwifery (n = 92)	Medicine-OB/GYN specialty (n = 95)
			Yes	No	Medicine-Undecided spec. (Ref)	Medicine-OB/GYN specialty		
Abortion can be a good thing for some women in some situations	82	63	88*	84	78	83		
Abortion is a woman's right	70	40	78*	69	75	66		
Abortion is acceptable past the first trimester of pregnancy (13+ weeks) in exceptional circumstances	67	48	72*	69	62	68		
Abortion is acceptable if the woman feels she already has enough children	53	20	62*	54	47	55		
Abortion is acceptable if the woman does not have family support	47	15	56*	52	35*	49		
Abortion is acceptable in any situation	44	13	53*	43	42	47		
Abortion is acceptable if the man involved in the pregnancy will not support the woman in having a baby	33	13	38*	34	25	36		
Abortion is the same as murder	20	44	13*	16	25	21		
Abortion is acceptable past the first trimester of pregnancy (13+ weeks) in any situation	18	6	22*	18	21	17		
Abortion is always wrong	10	29	4*	10	12	7		
Overall attitudes toward abortion scale (alpha = 0.88), mean (standard deviation)	3.3 (1.05)	2.4 (1.05)	3.6* (0.89)	3.4 (1.04)	3.2 (1.05)	3.3 (1.07)		
Perceived attitudes of peers toward abortion								
Abortion can be a good thing for some women in some situations	78	64	82*	80	73	79		
Abortion is a woman's right	70	40	78*	74	76	55*		
Abortion is the same as murder	14	40	7*	13	20	10		
Abortion is always wrong	11	29	6*	12	13	7		

Ref. = referent group.

* p < .05.

Table 3
 Legality: Students' agreement (% agree/strongly agree) with decriminalization of abortion in Chile in comparison to national public opinion data, unadjusted.

Abortion should be legal if...	Student survey, 2017–2018				National UDP Survey, 2015 ^a	
	Religiously-affiliated university		Field of study		Total (n = 1273)	
	Yes (n = 82) (Ref)	No (n = 287)	Medicine-Undecided spec. (n = 182) (Ref)	Midwifery (n = 92)	Medicine-OB/GYN speciality (n = 95)	
Total (n = 369)	81	98*	96	88*	97	73
The life of the mother is in serious danger due to pregnancy	94	98*	96	88*	97	73
The fetus has a serious defect which makes it nonviable	87	95*	91	80*	87	70
The woman has become pregnant as a result of being raped	85	92*	88	83	80	66
The woman is less than 14 years of age	80	87*	83	80	73	37
The couple decides together not to have a child	66	77*	71	58*	62	31
The woman does not want to have a child	65	75*	67	60	65	33
The woman or the couple do not have the economic means to raise a child	64	74*	66	58	67	23
Believes abortion should be legal in at least one or more circumstances	97	99*	97	96	97	83
Believes abortion should be legal in all of the above circumstances	51	61*	53	42	53	17

Ref. = referent group.

* p < .05.

^a National polling data retrieved from [6].

95% confidence interval (CI): 0.29, 0.70), identifying as atheist, agnostic, or of no religion (Beta: 0.37, CI: 0.17, 0.57), having a left/center left political affiliation (Beta: 0.23, CI: 0.05, 0.42), and being in the fifth through seventh year at university or having graduated (Beta: 0.33, CI: 0.07, 0.59) were significantly associated with greater moral acceptability of abortion; field of study was not. Students 25 years of age or older (Beta: -0.26, CI: -0.51, -0.02), whose political affiliation was right/center right (Beta: -0.78, CI: -0.99, -0.57), and who attended religious services two or three times a month or more (Beta: -0.78, CI: -1.05, -0.51), were significantly less likely to view abortion as morally acceptable (Table 4).

Support for decriminalization of abortion

Student support for decriminalization of abortion was highest when the woman's life is in danger (94%), the fetus is not viable (87%), the pregnancy is a result of rape (85%), and when the pregnant woman is under age 14 (80%) (Table 3). Nearly all students (97%) supported decriminalization of abortion in one or more of the seven mentioned circumstances, and about half (51%) felt abortion should be legal in all of the seven mentioned circumstances. Across categories, students from secular universities described significantly greater support for abortion decriminalization than students from religiously-affiliated universities (p < .001). Midwifery students were significantly less likely to support decriminalizing abortion than medical students with an undecided specialty when the woman's life is in danger (88% vs 96%, p < .05), the fetus is not viable (80% vs 91%, p < .05) and if the couple decides together not to have a child (58% vs 71%, p < .05).

Support for decriminalization in the 2015 UDP national opinion survey was highest when the woman's life is in danger (73%), when the fetus is not viable (70%), and when the pregnancy is a result of rape (66%) (Table 3). The majority of those surveyed in the national opinion poll (83%) supported decriminalization of abortion in at least one circumstance, but only 17% supported decriminalization in all seven of the circumstances. Overall support for decriminalization of abortion was higher among the students surveyed than among the national sample across all variables (Table 3).

In multivariable analyses, when compared to students attending religiously-affiliated universities, students attending a secular university had greater odds of supporting decriminalization of abortion (adjusted Odds Ratio (aOR): 4.47, CI: 2.02, 9.89); field of study was not significantly associated with this outcome (Table 4). Other factors significantly associating with higher odds of student support for decriminalization of abortion in a number of circumstances included being female (aOR: 2.77, CI: 1.54, 4.97) and identifying as atheist, agnostic, or of no religion (aOR: 2.10, CI: 1.10, 4.00). Having a right/center right political affiliation (aOR: 0.32, CI: 0.15, 0.69) and attending religious services two to three times a month or more (aOR: 0.25, CI: 0.09, 0.70), were significantly associated with lower odds of student support for decriminalization of abortion.

Discussion

Medical and midwifery students in Chile are being trained to practice in a context in which abortion is newly legal in three specific circumstances. The results of this study show that most Chilean medical and midwifery students support the country's recent decriminalization of abortion. Almost two thirds of students from secular universities (61%) believe that abortion should be legal in all of the situations we asked about in the survey, including far more liberal circumstances than currently outlined in the law. Support for the legality of abortion in all seven circumstances (51%) and in at least one circumstance (97%) is higher among the students we surveyed, including students from both secular and religiously-affiliated schools, than the 17% and 83% respectively of the national panel who felt this way in 2015, before the 2017 law change. While the national polling data is only available

Table 4

Linear and logistic regression models of students' attitudes toward moral acceptability and decriminalization of abortion, adjusted.

Participant characteristics	Moral acceptability of abortion (range 1 to 5)		Supports decriminalization in:		
	Mean	β (95% CI)	All of the seven mentioned circumstances		At least one or more of the mentioned circumstances
			%	aOR (95% CI)	%
University type					
Secular	3.58	0.49* (0.29, 0.70)	61	4.47* (2.02, 9.89)	99
Religiously-affiliated	2.39	Ref.	14	Ref.	89
Field of study					
Medicine-Undecided specialty	3.37	Ref.	53	Ref.	97
Midwifery	3.19	-0.09 (-0.29, 0.12)	42	0.54 (0.27, 1.11)	96
Medicine-OB/GYN specialty	3.34	-0.05 (-0.23, 0.13)	53	0.87 (0.45, 1.70)	97
Gender					
Female	3.35	0.13 (-0.03, 0.30)	55	2.77* (1.54, 4.97)	97
Male/other	3.26	Ref.	43	Ref.	96
Age group					
17-19	3.26	-0.01 (-0.23, 0.22)	43	0.89 (0.41, 1.95)	100
20-24	3.39	Ref.	54	Ref.	96
25-37	3.12	-0.26* (-0.51, -0.02)	51	0.81 (0.30, 2.00)	95
Region where completed high school					
Metropolitan Region	3.33	0.06 (-0.12, 0.23)	50	0.91 (0.48, 1.69)	97
Other region	3.26	Ref.	51	Ref.	95
Political affiliation					
Right/Center right	2.26	-0.78* (-0.99, -0.57)	20	0.32* (0.15, 0.69)	89
Center/None	3.34	Ref.	49	Ref.	99
Center left/left	3.88	0.23* (0.05, 0.42)	69	1.18 (0.63, 2.20)	99
Religion					
Catholic/Protestant/Other	2.76	Ref.	31	Ref.	93
None/Atheist/Agnostic	3.79	0.37* (0.17, 0.57)	68	2.10* (1.10, 4.00)	100
Frequency of religious attendance					
Once a week/2-3 times a month	2.05	-0.78* (-1.05, -0.51)	14	0.25* (0.09, 0.70)	76
Once a month/2-3 times a year	2.87	-0.07 (-0.31, 0.18)	27	0.60 (0.26, 1.42)	97
Hardly ever/never	3.62	Ref.	62	Ref.	100
Year at university					
1st-2nd	3.23	Ref.	43	Ref.	97
3rd-4th	3.37	0.11 (-0.10, 0.32)	54	1.56 (0.74, 3.28)	97
5th-7th/Graduated	3.39	0.33* (0.07, 0.59)	59	2.51 (0.94, 6.67)	97

Ref. = referent group.

* $p < .05$.

from before the ban was eased, we do know from research in a similar Mexican context that public attitudes toward abortion have been known to become more supportive after liberalizing policy change [22]. We can infer from the nationally representative data that support for legal abortion was high in the cases in which it was decriminalized and that clinicians soon to be serving this population are highly supportive in the same circumstances.

Students attending secular universities were significantly more likely to find abortion morally acceptable and to support its decriminalization than students from religiously-affiliated universities. However, the majority of students from religiously-affiliated universities also demonstrated high levels of support for abortion in the three cases supported under the current law. The views of students from religiously-affiliated universities appear to be more supportive of abortion than those of their administrations, as suggested by the recent trend of religious universities to claim conscientious objection at the institutional level, despite their students' opposition to this stance [23,24]. The potentially incompatible views on abortion between students and those that design and implement the medical and midwifery school curricula may pose a barrier to ensuring that students interested in abortion receive the necessary training to offer abortion-related services.

Religion, political affiliation, and frequency of religious attendance were all correlated with both attitudes toward abortion legality and moral acceptability of abortion; associations that have also been found in other countries with similar abortion restrictions [8,11,13]. However, we find that despite the diversity of opinions across groups, favorable views toward decriminalizing abortion in at least one or more

circumstance were consistently high, with levels of support ranging from a low of 76% (among those attending religious services two times a month or more) to as high as 100%.

The observation that medical students who have not yet decided their specialty were as likely to support abortion decriminalization and to find abortion morally acceptable as medical students with an OB/GYN specialty or midwifery students illustrates a potential future medical workforce, beyond just specialists in women's health, that is supportive of abortion access in both a legal and moral sense. However, we also find that most students support decriminalizing abortion in broader range of circumstances that are not currently legal. General practitioners with favorable attitudes toward abortion have been observed in other contexts where abortion is restricted [25] suggesting that medical students with positive abortion attitudes going into other specialties or family medicine might help build a larger body of providers in Chile more accepting of legal abortion.

While there was no difference in the multivariate analysis between midwifery and medical students in terms of morality and legality overall, we did observe significantly lower levels of support among midwifery students for three of the legality and one of the morality items than in the medical student groups. These findings are consistent with another study that measured attitudes toward abortion among midwives and gynecologists in Sweden where abortion is legal and the physicians had slightly more liberal attitudes than the midwives [26]. Midwifery in Chile operates within a narrow framework which may contextualize the less favorable attitudes toward abortion among the midwifery students. Historically, the midwifery profession adheres to a conventional approach to maternal health that highly values

motherhood and bringing children into the world [27] and therefore might be less accepting of abortion. Regardless, it does highlight the importance of both midwives and physicians receiving high quality training in abortion care and counseling, given the high level of support among both groups.

As physicians who are more supportive of abortion are more likely to provide abortion [25], the favorable opinions of this next generation of providers in the country has the potential to increase access to and provision of abortion. Almost all of the students we surveyed across universities (97%) – including 89% of those from religiously-affiliated universities – believe that abortion should be legal in at least one of the circumstances included in the survey. A previous publication from this study reported that a majority of the same group of students (69%) said that they intend to become trained to provide abortions [17], so we can assume that at least some of these students will go on to provide abortions in Chile. They will need the necessary training including values clarification and exercises in refraining from judgmental behavior to ensure they are able to provide high-quality, non-judgmental services as well as support navigating their careers. Furthermore, as even those physicians and midwives who do not provide abortions are likely to treat women seeking abortions, they should all be trained to do so appropriately. Training should cover full spectrum reproductive health services including diagnosis of cases of legal abortion, accurate and informative options counseling, referral to providers who do practice abortion, and post-abortion care including complication management. Multiple studies conducted with physicians in the United States have found that those who have received quality abortion training are more likely to have supportive attitudes toward abortion and to integrate it into their own practice [28,29].

We observed that students in their 5th to 7th year of university education or who have graduated are more likely than 1st or 2nd year students to find abortion morally acceptable, which is indicative of greater experience leading to greater acceptability, an association that was also found among midwifery students in Poland [30]. Many medical students in Chile do not have access to training in abortion provision and those who do, may receive training in curettage as opposed to manual vacuum aspiration (MVA), a more modern and less invasive method, due to a widespread lack of knowledge and training across the medical community [31]. The finding that more experience in the fields of medicine, OB/GYN, and midwifery is associated with higher moral acceptance of abortion highlights the need for expanding training in non-judgmental abortion care, updated techniques, and ethics. This sample of students reported having some personal concerns about providing abortion in Chile [17] and are particularly susceptible to being stigmatized, a common experience of abortion providers, in a context in which abortion was only recently decriminalized. In addition to training on the skills of provision, it will be vital to also prepare clinicians for the potential stigma they may face by implementing tools such as the Providers Share Workshop, a resource for abortion providers to manage stigma experienced in their profession [32].

This study has important strengths and limitations. A study strength lies in that we fielded our survey in the months after the law changed and were able to gain unique perspectives among students. However, the most recent national public opinion survey was fielded in 2015 before the law changed and we do not have more recent data to compare with the 2017 student opinions. We acknowledge that comparing the students' attitudes after the law change to public opinion data that was collected before the law change is a limitation. Due to challenges recruiting students from religiously-affiliated schools to participate in the survey, our student sample includes an oversampling of students from secular universities. Despite this, our student sample comes from the universities whose total medical and midwifery student population represent 72% of medical students and 38% of midwifery students in the Metropolitan Region and 36% of medical students and 16% of midwifery students nationally. Another recruitment challenge was distributing the survey to all students enrolled in the programs of

interest; our original intention that we were unable to achieve.

Our study yielded a low completion rate, which may be attributed to the voluntary, online nature of our survey, the overall length of the survey, or its complex subject matter. While a low response rate and lower rates of completion for these mentioned reasons are common characteristics of online surveys [33], this recruitment method made our study susceptible to non-participation bias. Thus, the attitudes of the students who chose to participate and complete the survey may have differed from those who did not. Mitigating some concerns of participation bias lies in that there were no statistically significant differences on demographic variables between those with complete and incomplete surveys, with the exception of political affiliation. Students who identified as left leaning or right leaning were more likely to complete the full survey than those who identified as “center” or with no political affiliation. Nonetheless, our results are likely disproportionately supportive of abortion decriminalization and moral acceptability, limiting their generalizability.

An important strength is that we were able to gather perspectives from a range of both religiously-affiliated and secular universities, and of students in both medical and midwifery fields of study. As mentioned earlier, another noted strength of our study is that we fielded this study just a few months after the abortion ban was eased in Chile. Thus our findings are some of the first to come out that measure level of support of the recent decriminalization among medical and midwifery students.

Conclusion

Future health care providers in Chile are very supportive of the recent decriminalization of abortion. The views of students at religiously-affiliated universities may be more supportive of abortion than their administrations. Given that these are the first findings on abortion attitudes of future providers who are likely to serve people seeking abortion in Chile since the ban was lifted, this presents an opportunity to encourage medical and midwifery schools, regardless of their religious affiliation, to offer the necessary training to provide abortion-related care. Further research should be conducted with currently practicing healthcare professionals in the country regarding their attitudes toward abortion and their interest in and challenges experienced integrating varying aspects of abortion care into their scopes of practice. This may present opportunities to offer continuing education trainings for the currently practicing healthcare providers in Chile. There is a need to assess the scope and quality of abortion training programs that are being implemented at medical and midwifery schools and to determine whether they are meeting students' training needs.

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Compliance with ethical standards

Role of the funding source

The study's funders did not have any role in the study design, data collection, analysis, writing, or decision to submit the article for publication.

Research involving human participants

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee of the Institute of Social Science Research of the

University of Diego Portales and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent

Informed consent was obtained from all individual participants included in the study.

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