

Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix 1: BRFSS data source citations and disclaimers

Citations of state BRFSS data sources are listed below:

1. Utah BRFSS data 2014-16: Office of Public Health Assessment. Utah Behavioral Risk Factor Surveillance System Survey Data. Salt Lake City, UT: Utah Department of Health, 2014-16.
2. Michigan BRFSS data 2014-16. Lansing, MI: Michigan Department of Health and Human Services, 2014-16.
3. North Carolina 2014-16: North Carolina State Center for Health Statistics. Raleigh, NC: North Carolina Health and Human Services, 2014-16.

State BRFSS disclaimers are listed below:

1. In addition to the above disclaimers, authors disclaim that all analyses, conclusions, and interpretations in this study do not represent those of the Utah Department of Health.

eAppendix 2: Selection of control states

In this section of the Supplementary Appendix, we describe our selection of control states for each state that implemented a law permitting the denial of services to same-sex couples: Utah, Michigan, and North Carolina.

Utah:

Utah's neighboring states include Idaho, Wyoming, Colorado, New Mexico, Arizona, and Nevada. Of those states, Idaho and Nevada collected data on sexual orientation in 2014-2016. We used both states as control states for Utah (eTable 1).

eTable 1: Population characteristics in Utah and control states

Variable	Case state	Control states	
	Utah %	Idaho %	Nevada %
Sexual orientation			
Straight	93.3	96.0	93.3
Gay, lesbian, bisexual, or not sure	6.8	4.0	6.6
Race/ethnicity			
Non-Hispanic White	80.9	85.8	54.7
Non-Hispanic Black	0.8	0.5	8.5
Hispanic	11.7	8.5	24.6
Other race/ethnicity	4.3	2.4	9.7
Non-Hispanic multiracial	1.2	1.6	1.3
Unknown/other	1.2	1.3	1.3
Educational attainment			
Did not graduate high school	9.3	10.2	16.5
High school graduate	24.4	28.7	28.8
Attended college/technical school	39.7	37.6	34.9
Graduated from college/technical school	26.4	23.2	19.6
Not reported	0.2	0.3	0.3
Income group			
< \$10,000	2.6	3.7	4.6
\$10,000 - \$14,999	2.9	4.0	3.8
\$15,000 - \$19,999	4.5	7.1	6.8
\$20,000 - \$24,999	6.7	8.7	8.8
\$25,000 - \$34,999	8.2	11.7	9.7
\$35,000 - \$49,999	12.9	15.1	11.8
\$50,000 - \$74,999	16.6	16.5	12.9
\$75,000 or more	31.2	23.5	23.7
Not reported	14.4	9.8	17.9

Michigan:

Michigan's neighboring states include Wisconsin, Illinois, Indiana, and Ohio. Of these neighboring states, Ohio, Indiana, and Wisconsin collected data on sexual orientation. We compared the demographic characteristics of the populations of each state to identify the control states (eTable 2). The populations of Ohio and Indiana were most similar to Michigan with regard to sexual orientation, race/ethnicity, and income group, and we therefore chose Ohio and Indiana as control states.

eTable 2: Population characteristics in Michigan and potential control states

Variable	Case state	Potential control states		
	Michigan	Ohio	Indiana	Wisconsin
	%	%	%	%
Sexual orientation				
Straight	96.5	95.8	95.5	95.0
Gay, lesbian, bisexual, or not sure	3.5	4.2	4.5	5.0
Race/ethnicity				
Non-Hispanic White	77.3	82.0	82.9	86.2
Non-Hispanic Black	12.9	11.1	8.0	4.9
Hispanic	3.9	2.4	4.8	4.6
Other race/ethnicity	3.2	2.0	1.9	3.0
Non-Hispanic multiracial	1.4	1.2	1.1	0.6
Unknown/other	1.2	1.4	1.3	0.7
Educational attainment				
Did not graduate high school	10.5	11.3	12.6	9.2
High school graduate	29.8	34.3	34.4	32.7
Attended college/technical school	35.5	31.1	31.3	33.3
Graduated from college/technical school	24.2	23.1	21.6	24.8
Not reported	<0.1	0.1	0.2	<0.1
Income group				
< \$10,000	5.5	4.2	5.0	3.4
\$10,000 - \$14,999	4.1	4.1	4.5	3.6
\$15,000 - \$19,999	6.2	6.3	7.3	6.0
\$20,000 - \$24,999	8.2	9.1	8.5	7.6
\$25,000 - \$34,999	10.3	9.6	9.8	9.9
\$35,000 - \$49,999	13.6	13.2	14.2	14.5
\$50,000 - \$74,999	15.0	14.6	14.8	16.9
\$75,000 or more	27.6	25.1	24.3	29.2
Not reported	9.6	13.9	11.6	8.8

North Carolina:

North Carolina's neighboring states are Virginia, South Carolina, Tennessee, and Georgia. We selected the state of Virginia as one control state because it was the only neighboring state to North Carolina that captured data on sexual orientation using the CDC Sexual Orientation and Gender Identity Module in 2014-2016. We included the state of Delaware as an additional control state, because it is the only other BRFSS state in the mid-Atlantic region that collected sexual orientation data in all three study years. North Carolina's, Virginia's, and Delaware's populations have similar demographic characteristics (eTable 3).

eTable 3: Population characteristics in North Carolina and control states

Variable	Case state	Control states	
Variable	North Carolina	Virginia	Delaware
	%	%	
Sexual orientation			
Straight	96.4	95.3	94.0
Gay, lesbian, bisexual, or not sure	3.6	4.7	6.0
Race/ethnicity			
Non-Hispanic White	66.8	65.1	66.2
Non-Hispanic Black	20.5	18.3	19.3
Hispanic	7.3	7.7	7.4
Other race/ethnicity	3.6	5.6	3.8
Non-Hispanic multiracial	1.0	1.8	1.5
Unknown/other	0.9	1.4	1.8
Educational attainment			
Did not graduate high school	15.3	12.4	12.1
High school graduate	26.9	25.8	31.1
Attended college/technical school	33.2	30.2	29.7
Graduated from college/technical school	24.4	31.4	26.8
Not reported	0.3	0.2	0.3
Income group			
< \$10,000	4.5	3.2	3.3
\$10,000 - \$14,999	5.1	3.5	3.4
\$15,000 - \$19,999	8.1	5.8	5.7
\$20,000 - \$24,999	8.5	7.7	8.1
\$25,000 - \$34,999	9.3	8.3	9.0
\$35,000 - \$49,999	11.6	11.2	11.8
\$50,000 - \$74,999	12.6	13.1	13.3
\$75,000 or more	21.7	33.6	29.9
Not reported	18.6	13.7	15.5

eTable 4: Logistic regression analysis of prior trends in mental distress among all adults in states that passed laws permitting denial of services to same-sex couples and control states, 2012-2014 (N=159,189)

Variable	Adjusted odds ratio	95% Confidence Interval
<i>State that implemented law permitting denial of services to same-sex couples*year</i>	1.02	0.96 - 1.09
Year	0.96**	0.92 - 1.00
State		
Delaware	Ref	
Idaho	0.83***	0.73 - 0.94
Indiana	1.00	0.90 - 1.12
Michigan	0.96	0.82 - 1.13
Nevada	0.87*	0.76 - 1.01
North Carolina	0.84**	0.72 - 0.99
Ohio	0.99	0.89 - 1.10
Utah	0.87*	0.74 - 1.02
Virginia	0.91	0.82 - 1.02
Race/ethnicity		
Non-Hispanic White	Ref	
Non-Hispanic Black	0.67***	0.61 - 0.72
Hispanic	0.78***	0.68 - 0.88
Other race/ethnicity	0.78***	0.71 - 0.85
Sex		
Male	Ref	
Female	1.54***	1.47 - 1.63
Age group		
18-24	Ref	
25-34	1.06	0.95 - 1.17
35-44	1.13**	1.02 - 1.26
45-54	1.02	0.92 - 1.13
55 - 64	0.76***	0.68 - 0.85
Educational attainment		
Did not graduate high school	Ref	
High school graduate	0.77***	0.71 - 0.84
Attended college/technical school	0.80***	0.74 - 0.88
Graduated from college/technical school	0.53***	0.48 - 0.58
Unknown	0.60*	0.34 - 1.08
Income group		
< \$10,000	Ref	
\$10,000 - \$14,999	0.90*	0.80 - 1.01
\$15,000 - \$19,999	0.83***	0.74 - 0.92
\$20,000 - \$24,999	0.73***	0.65 - 0.81
\$25,000 - \$34,999	0.60***	0.53 - 0.67
\$35,000 - \$49,999	0.53***	0.48 - 0.60
\$50,000 - \$74,999	0.45***	0.40 - 0.50
\$75,000 or more	0.33***	0.29 - 0.37
Unknown	0.61***	0.54 - 0.68
Did not report	0.36***	0.31 - 0.42
Employment status		
Employed	Ref	
Self-employed	1.00	0.91 - 1.11
Out of work > 1 year	2.31***	2.08 - 2.56

Out of work < 1 year	1.87***	1.67 - 2.09
Homemaker	1.03	0.93 - 1.14
Student	1.05	0.92 - 1.19
Retired	1.36***	1.21 - 1.52
Unable to work	4.66***	4.31 - 5.03
Unknown	1.25	0.88 - 1.78
Marital status		
Married	Ref	
Divorced	1.32***	1.23 - 1.42
Widowed	1.36***	1.20 - 1.54
Separated	1.66***	1.46 - 1.89
Never married	1.14***	1.05 - 1.23
Unmarried couple	1.40***	1.23 - 1.58
Unknown	1.06	0.76 - 1.49
Constant	0.24***	0.19 - 0.29

Notes: *p<0.1, **p<0.05, ***p<0.01. The bold and italicized estimate reflects that there was not a significant difference in baseline trends in mental distress among adults living in states that did and did not go on to implement laws permitting denial of services to same-sex couples. The estimates were adjusted for each of the variables contained in the table. The race and ethnicity categories differed from the main analysis due to different coding of race and ethnicity in 2012 relative to later years.

eTable 5: Change in percent of population experiencing mental distress after implementation of laws permitting denial of services to same-sex couples (N=109,089)

Variable	Percentage points	95% Confidence Interval
Law permitting denial of services to same-sex couples	-0.36	-1.73 - 1.01
Sexual minority	5.14	-1.18 - 11.47
Law permitting denial of services to same-sex couples*sexual minority	10.13**	1.76 - 18.50
Year		
2014	Ref	
2015	0.40	-0.55 - 1.36
2016	1.35***	0.46 - 2.24
Year*sexual minority		
2014*sexual minority	Ref	
2015*sexual minority	-0.84	-6.72 - 5.04
2016*sexual minority	0.47	-4.77 - 5.70
State		
Delaware	Ref	
Idaho	-1.77**	-3.15 - -0.39
Indiana	0.28	-1.04 - 1.60
Michigan	0.90	-0.65 - 2.46
Nevada	0.68	-1.04 - 2.39
North Carolina	-0.93	-2.45 - 0.59
Ohio	0.67	-0.63 - 1.97
Utah	0.00	-1.44 - 1.44
Virginia	-0.17	-1.40 - 1.07
State*sexual minority		
Delaware*sexual minority	Ref	
Idaho*sexual minority	3.69	-4.30 - 11.67
Indiana*sexual minority	-0.21	-7.42 - 7.00
Michigan*sexual minority	1.77	-7.28 - 10.82
Nevada*sexual minority	7.56*	-0.14 - 15.27
North Carolina*sexual minority	-1.25	-10.42 - 7.92
Ohio*sexual minority	4.06	-3.20 - 11.33
Utah*sexual minority	-2.11	-10.01 - 5.79
Virginia*sexual minority	1.54	-4.99 - 8.06
Race/ethnicity		
Non-Hispanic White	Ref	
Non-Hispanic Black	-4.44***	-5.49 - -3.40
Non-Hispanic multiracial	-1.33	-3.01 - 0.35
Other race/ethnicity	4.50***	1.60 - 7.41
Hispanic	-6.53***	-7.86 - -5.20
Unknown/other	-1.26	-3.81 - 1.28
Sex		
Male	Ref	
Female	4.68***	4.02 - 5.33
Age group		
18-24	Ref	
25-34	-0.41	-1.94 - 1.12
35-44	-1.14	-2.68 - 0.41
45-54	-2.49***	-4.01 - -0.97
55 - 64	-5.91***	-7.44 - -4.38

Educational attainment		
Did not graduate high school	Ref	
High school graduate	-3.53***	-5.06 - -2.00
Attended college/technical school	-2.91***	-4.46 - -1.37
Graduated from college/technical school	-6.07***	-7.60 - -4.54
Unknown	-8.53***	-12.46 - -4.60
Income group		
< \$10,000	Ref	
\$10,000 - \$14,999	-2.93**	-5.80 - -0.05
\$15,000 - \$19,999	-4.60***	-7.24 - -1.96
\$20,000 - \$24,999	-5.09***	-7.59 - -2.58
\$25,000 - \$34,999	-8.62***	-10.99 - -6.25
\$35,000 - \$49,999	-9.55***	-11.88 - -7.21
\$50,000 - \$74,999	-11.08***	-13.38 - -8.78
\$75,000 or more	-12.22***	-14.51 - -9.93
Unknown	-9.25***	-11.74 - -6.76
Did not report	-11.52***	-13.99 - -9.06
Employment status		
Employed	Ref	
Self-employed	-0.06	-1.08 - 0.95
Out of work > 1 year	12.02***	9.46 - 14.58
Out of work < 1 year	7.95***	5.58 - 10.33
Homemaker	-0.78	-2.08 - 0.52
Student	0.04	-1.83 - 1.92
Retired	2.58***	1.37 - 3.78
Unable to work	26.22***	24.52 - 27.92
Unknown	3.01	-0.93 - 6.95
Marital status		
Married	Ref	
Divorced	3.53***	2.50 - 4.56
Widowed	6.28***	4.24 - 8.33
Separated	8.00***	5.43 - 10.57
Never married	0.53	-0.48 - 1.55
Unmarried couple	2.99***	1.02 - 4.96
Unknown	-2.69	-6.56 - 1.18
Constant	22.13***	18.94 - 25.33

Notes: *p<0.1, **p<0.05, ***p<0.01. The estimates were adjusted for each of the variables contained in the table.

eTable 6: Logistic regression analysis of state laws permitting denial of services to same-sex couples and mental distress (N=109,089)

Variable	Adjusted odds ratio	95% Confidence Interval
Law permitting denial of services to same-sex couples	0.95	0.83 - 1.09
Sexual minority	1.59**	1.01 - 2.48
Law permitting denial of services to same-sex couples*sexual minority	1.88**	1.13 - 3.13
Year		
2014	Ref	
2015	1.05	0.95 - 1.16
2016	1.15***	1.05 - 1.26
Year*sexual minority		
2014*sexual minority	Ref	
2015*sexual minority	0.90	0.62 - 1.32
2016*sexual minority	0.98	0.71 - 1.36
State		
Delaware	Ref	
Idaho	0.82**	0.71 - 0.96
Indiana	1.02	0.90 - 1.17
Michigan	1.11	0.94 - 1.29
Nevada	1.07	0.90 - 1.28
North Carolina	0.93	0.79 - 1.09
Ohio	1.07	0.93 - 1.22
Utah	1.01	0.87 - 1.17
Virginia	0.97	0.85 - 1.10
State*sexual minority		
Delaware*sexual minority	Ref	
Idaho*sexual minority	1.29	0.74 - 2.25
Indiana*sexual minority	0.89	0.54 - 1.47
Michigan*sexual minority	0.94	0.52 - 1.69
Nevada*sexual minority	1.53*	0.92 - 2.53
North Carolina*sexual minority	0.87	0.47 - 1.61
Ohio*sexual minority	1.16	0.71 - 1.90
Utah*sexual minority	0.85	0.49 - 1.47
Virginia*sexual minority	1.16	0.72 - 1.85
Race/ethnicity		
Non-Hispanic White	Ref	
Non-Hispanic Black	0.68***	0.61 - 0.75
Non-Hispanic multiracial	0.89	0.75 - 1.06
Other race/ethnicity	1.34***	1.10 - 1.63
Hispanic	0.55***	0.48 - 0.64
Unknown/other	0.89	0.69 - 1.15
Sex		
Male	Ref	
Female	1.57***	1.48 - 1.68
Age group		
18-24	Ref	
25-34	0.98	0.86 - 1.11
35-44	0.91	0.80 - 1.04
45-54	0.80***	0.70 - 0.91
55 - 64	0.57***	0.50 - 0.65

Educational attainment		
Did not graduate high school	Ref	
High school graduate	0.77***	0.69 - 0.86
Attended college/technical school	0.82***	0.73 - 0.91
Graduated from college/technical school	0.55***	0.49 - 0.62
Unknown	0.34***	0.16 - 0.69
Income group		
< \$10,000	Ref	
\$10,000 - \$14,999	0.91	0.78 - 1.06
\$15,000 - \$19,999	0.85**	0.73 - 0.98
\$20,000 - \$24,999	0.84**	0.72 - 0.97
\$25,000 - \$34,999	0.65***	0.56 - 0.75
\$35,000 - \$49,999	0.60***	0.52 - 0.70
\$50,000 - \$74,999	0.50***	0.43 - 0.58
\$75,000 or more	0.40***	0.34 - 0.47
Unknown	0.61***	0.52 - 0.70
Did not report	0.47***	0.39 - 0.56
Employment status		
Employed	Ref	
Self-employed	1.00	0.88 - 1.13
Out of work > 1 year	2.40***	2.07 - 2.78
Out of work < 1 year	1.88***	1.61 - 2.19
Homemaker	0.99	0.87 - 1.12
Student	1.06	0.90 - 1.24
Retired	1.32***	1.15 - 1.52
Unable to work	4.65***	4.23 - 5.11
Unknown	1.34	0.94 - 1.91
Marital status		
Married	Ref	
Divorced	1.38***	1.27 - 1.51
Widowed	1.68***	1.46 - 1.93
Separated	1.79***	1.52 - 2.11
Never married	1.10**	1.00 - 1.21
Unmarried couple	1.34***	1.15 - 1.56
Unknown	0.76	0.48 - 1.22
Constant	0.21***	0.17 - 0.27

Notes: *p<0.1, **p<0.05, ***p<0.01. The estimates were adjusted for each of the variables contained in the table.

eTable 7: Change in percent of population experiencing mental distress after implementation of laws permitting denial of services to same-sex couples including those aged 65 and older (N=166,459)

Variable	Percentage points	95% Confidence Interval
Law permitting denial of services to same-sex couples	-0.16	-1.29 - 0.97
Sexual minority	4.50	-1.07 - 10.07
Law permitting denial of services to same-sex couples*sexual minority	8.70**	1.18 - 16.22
Year		
2014	Ref	
2015	0.34	-0.44 - 1.12
2016	0.97***	0.24 - 1.70
Year*sexual minority		
2014*sexual minority	Ref	
2015*sexual minority	-1.25	-6.39 - 3.88
2016*sexual minority	0.66	-4.02 - 5.34
State		
Delaware	Ref	
Idaho	-1.85***	-2.98 - -0.73
Indiana	-0.16	-1.24 - 0.91
Michigan	0.33	-0.95 - 1.61
Nevada	0.32	-1.08 - 1.71
North Carolina	-1.09*	-2.34 - 0.16
Ohio	0.03	-1.03 - 1.08
Utah	-0.35	-1.55 - 0.84
Virginia	-0.69	-1.70 - 0.32
State*sexual minority		
Delaware*sexual minority	Ref	
Idaho*sexual minority	3.91	-3.26 - 11.08
Indiana*sexual minority	-0.05	-6.42 - 6.33
Michigan*sexual minority	2.45	-5.64 - 10.55
Nevada*sexual minority	6.73*	-0.12 - 13.58
North Carolina*sexual minority	-1.43	-9.49 - 6.62
Ohio*sexual minority	4.11	-2.13 - 10.36
Utah*sexual minority	-1.97	-8.97 - 5.02
Virginia*sexual minority	1.68	-4.11 - 7.47
Race/ethnicity		
Non-Hispanic White	Ref	
Non-Hispanic Black	-3.92***	-4.81 - -3.02
Non-Hispanic multiracial	-1.29*	-2.82 - 0.24
Other race/ethnicity	4.55***	1.96 - 7.13
Hispanic	-6.03***	-7.25 - -4.80
Unknown/other	-0.76	-2.90 - 1.37
Sex		
Male	Ref	
Female	3.99***	3.45 - 4.53
Age group		
18-24	Ref	
25-34	-0.52	-2.04 - 0.99
35-44	-1.28	-2.80 - 0.25
45-54	-2.46***	-3.95 - -0.96
55 - 64	-5.57***	-7.06 - -4.08

Educational attainment		
Did not graduate high school	Ref	
High school graduate	-3.15***	-4.36 - -1.93
Attended college/technical school	-2.51***	-3.74 - -1.27
Graduated from college/technical school	-5.15***	-6.36 - -3.93
Unknown	-6.10***	-9.45 - -2.74
Income group		
< \$10,000	Ref	
\$10,000 - \$14,999	-3.17**	-5.63 - -0.71
\$15,000 - \$19,999	-5.13***	-7.40 - -2.85
\$20,000 - \$24,999	-5.58***	-7.75 - -3.41
\$25,000 - \$34,999	-8.47***	-10.54 - -6.40
\$35,000 - \$49,999	-9.38***	-11.43 - -7.32
\$50,000 - \$74,999	-10.74***	-12.78 - -8.69
\$75,000 or more	-11.93***	-13.97 - -9.88
Unknown	-8.65***	-10.83 - -6.47
Did not report	-10.83***	-12.92 - -8.73
Employment status		
Employed	Ref	
Self-employed	0.18	-0.74 - 1.09
Out of work > 1 year	12.07***	9.64 - 14.51
Out of work < 1 year	8.05***	5.74 - 10.36
Homemaker	0.17	-0.95 - 1.28
Student	0.12	-1.75 - 1.98
Retired	2.54***	1.79 - 3.30
Unable to work	25.64***	24.12 - 27.16
Unknown	2.83	-0.60 - 6.25
Marital status		
Married	Ref	
Divorced	3.11***	2.27 - 3.95
Widowed	1.13***	0.28 - 1.99
Separated	7.66***	5.28 - 10.03
Never married	0.47	-0.48 - 1.41
Unmarried couple	2.99***	1.10 - 4.88
Unknown	-2.34	-5.64 - 0.96
Constant	22.45***	19.64 - 25.27

Notes: *p<0.1, **p<0.05, ***p<0.01. Notes: *p<0.1, **p<0.05, ***p<0.01. The estimates were adjusted for each of the variables contained in the table.

eTable 8: Change in percent of population experiencing mental distress after implementation of laws permitting denial of services to same-sex couples excluding those unsure of their sexual orientation (N=108,322)

Variable	Percentage points	95% Confidence Interval
Law permitting denial of services to same-sex couples	-0.37	-1.74 - 0.99
Sexual minority	9.72**	2.32 - 17.12
Law permitting denial of services to same-sex couples*sexual minority	9.75**	0.42 - 19.09
Year		
2014	Ref	
2015	0.41	-0.55 - 1.37
2016	1.36***	0.47 - 2.25
Year*sexual minority		
2014*sexual minority	Ref	
2015*sexual minority	-2.52	-9.15 - 4.11
2016*sexual minority	0.77	-5.23 - 6.76
State		
Delaware	Ref	
Idaho	-1.77**	-3.15 - -0.39
Indiana	0.30	-1.02 - 1.62
Michigan	0.95	-0.61 - 2.50
Nevada	0.50	-1.21 - 2.22
North Carolina	-0.95	-2.47 - 0.56
Ohio	0.71	-0.59 - 2.02
Utah	-0.00	-1.44 - 1.44
Virginia	-0.18	-1.41 - 1.06
State*sexual minority		
Delaware*sexual minority	Ref	
Idaho*sexual minority	-0.28	-9.54 - 8.98
Indiana*sexual minority	-0.87	-9.31 - 7.56
Michigan*sexual minority	-2.75	-12.71 - 7.22
Nevada*sexual minority	8.22*	-0.94 - 17.38
North Carolina*sexual minority	-3.10	-13.50 - 7.29
Ohio*sexual minority	1.15	-7.10 - 9.39
Utah*sexual minority	-1.28	-10.47 - 7.91
Virginia*sexual minority	1.13	-6.60 - 8.86
Race/ethnicity		
Non-Hispanic White	Ref	
Non-Hispanic Black	-4.42***	-5.46 - -3.37
Non-Hispanic multiracial	-0.99	-2.70 - 0.72
Other race/ethnicity	4.33***	1.43 - 7.23
Hispanic	-5.93***	-7.28 - -4.57
Unknown/other	-0.86	-3.44 - 1.71
Sex		
Male	Ref	
Female	4.67***	4.01 - 5.32
Age group		
18-24	Ref	
25-34	-0.33	-1.87 - 1.20
35-44	-1.01	-2.57 - 0.54
45-54	-2.34***	-3.87 - -0.82
55 - 64	-5.76***	-7.30 - -4.23

Educational attainment		
Did not graduate high school	Ref	
High school graduate	-3.88***	-5.44 - -2.33
Attended college/technical school	-3.32***	-4.89 - -1.75
Graduated from college/technical school	-6.48***	-8.03 - -4.93
Unknown	-8.68***	-12.70 - -4.67
Income group		
< \$10,000	Ref	
\$10,000 - \$14,999	-2.85*	-5.75 - 0.04
\$15,000 - \$19,999	-4.62***	-7.29 - -1.95
\$20,000 - \$24,999	-5.14***	-7.67 - -2.62
\$25,000 - \$34,999	-8.61***	-11.00 - -6.22
\$35,000 - \$49,999	-9.68***	-12.03 - -7.33
\$50,000 - \$74,999	-11.16***	-13.48 - -8.84
\$75,000 or more	-12.32***	-14.63 - -10.01
Unknown	-9.13***	-11.65 - -6.62
Did not report	-11.57***	-14.05 - -9.08
Employment status		
Employed	Ref	
Self-employed	-0.11	-1.12 - 0.91
Out of work > 1 year	11.91***	9.34 - 14.48
Out of work < 1 year	7.88***	5.50 - 10.27
Homemaker	-0.68	-1.99 - 0.64
Student	0.01	-1.88 - 1.89
Retired	2.56***	1.35 - 3.77
Unable to work	26.14***	24.44 - 27.85
Unknown	3.06	-0.95 - 7.07
Marital status		
Married	Ref	
Divorced	3.40***	2.37 - 4.43
Widowed	6.15***	4.10 - 8.19
Separated	8.16***	5.55 - 10.77
Never married	0.36	-0.67 - 1.38
Unmarried couple	2.92***	0.93 - 4.92
Unknown	-2.81	-6.71 - 1.08
Constant	22.44***	19.22 - 25.65

Notes: *p<0.1, **p<0.05, ***p<0.01. Notes: *p<0.1, **p<0.05, ***p<0.01. The estimates were adjusted for each of the variables contained in the table.

eTable 9: Change in percent of population experiencing mental distress after implementation of laws permitting denial of services to same-sex couples including same-sex marriage laws (N=109,089)

Variable	Percentage points	95% Confidence Interval
Law permitting denial of services to same-sex couples	-0.37	-1.74 - 1.00
Sexual minority	5.28	-2.28 - 12.84
Law permitting denial of services to same-sex couples*sexual minority	10.14**	1.77 - 18.51
Same-sex marriage	0.37	-1.38 - 2.12
Same-sex marriage*sexual minority	-0.28	-11.17 - 10.62
Year		
2014	Ref	
2015	0.18	-1.39 - 1.75
2016	0.99	-0.93 - 2.91
Year*sexual minority		
2014*sexual minority	Ref	
2015*sexual minority	-0.68	-10.75 - 9.40
2016*sexual minority	0.73	-11.18 - 12.64
State		
Delaware	Ref	
Idaho	-1.64**	-3.15 - -0.13
Indiana	0.41	-1.08 - 1.90
Michigan	1.08	-0.67 - 2.83
Nevada	0.81	-1.04 - 2.66
North Carolina	-0.75	-2.46 - 0.96
Ohio	0.92	-0.82 - 2.66
Utah	0.18	-1.46 - 1.83
Virginia	-0.04	-1.43 - 1.34
State*sexual minority		
Delaware*sexual minority	Ref	
Idaho*sexual minority	3.59	-5.08 - 12.25
Indiana*sexual minority	-0.31	-8.45 - 7.83
Michigan*sexual minority	1.63	-8.32 - 11.58
Nevada*sexual minority	7.47*	-0.97 - 15.90
North Carolina*sexual minority	-1.39	-11.45 - 8.67
Ohio*sexual minority	3.87	-5.88 - 13.63
Utah*sexual minority	-2.25	-11.17 - 6.67
Virginia*sexual minority	1.44	-5.95 - 8.83
Race/ethnicity		
Non-Hispanic White	Ref	
Non-Hispanic Black	-4.44***	-5.49 - -3.40
Non-Hispanic multiracial	-1.33	-3.01 - 0.35
Other race/ethnicity	4.50***	1.60 - 7.41
Hispanic	-6.53***	-7.86 - -5.20
Unknown/other	-1.27	-3.81 - 1.27
Sex		
Male	Ref	
Female	4.68***	4.02 - 5.33
Age group		
18-24	Ref	
25-34	-0.41	-1.94 - 1.12
35-44	-1.14	-2.68 - 0.41

45-54	-2.49***	-4.01 - -0.97
55 - 64	-5.91***	-7.44 - -4.38
Educational attainment		
Did not graduate high school	Ref	
High school graduate	-3.53***	-5.06 - -1.99
Attended college/technical school	-2.91***	-4.46 - -1.37
Graduated from college/technical school	-6.07***	-7.59 - -4.54
Unknown	-8.54***	-12.47 - -4.60
Income group		
< \$10,000	Ref	
\$10,000 - \$14,999	-2.93**	-5.80 - -0.06
\$15,000 - \$19,999	-4.60***	-7.24 - -1.95
\$20,000 - \$24,999	-5.09***	-7.59 - -2.58
\$25,000 - \$34,999	-8.62***	-10.99 - -6.25
\$35,000 - \$49,999	-9.55***	-11.88 - -7.21
\$50,000 - \$74,999	-11.08***	-13.37 - -8.78
\$75,000 or more	-12.22***	-14.51 - -9.93
Unknown	-9.24***	-11.73 - -6.75
Did not report	-11.52***	-13.99 - -9.05
Employment status		
Employed	Ref	
Self-employed	-0.06	-1.08 - 0.95
Out of work > 1 year	12.02***	9.46 - 14.58
Out of work < 1 year	7.95***	5.58 - 10.32
Homemaker	-0.78	-2.08 - 0.52
Student	0.05	-1.83 - 1.92
Retired	2.58***	1.37 - 3.78
Unable to work	26.22***	24.52 - 27.92
Unknown	3.01	-0.93 - 6.95
Marital status		
Married	Ref	
Divorced	3.53***	2.50 - 4.56
Widowed	6.28***	4.24 - 8.33
Separated	8.00***	5.43 - 10.57
Never married	0.54	-0.48 - 1.55
Unmarried couple	2.99***	1.02 - 4.96
Unknown	-2.70	-6.57 - 1.18
Constant	21.95***	18.71 - 25.19

Notes: *p<0.1, **p<0.05, ***p<0.01. Notes: *p<0.1, **p<0.05, ***p<0.01. The estimates were adjusted for each of the variables contained in the table.

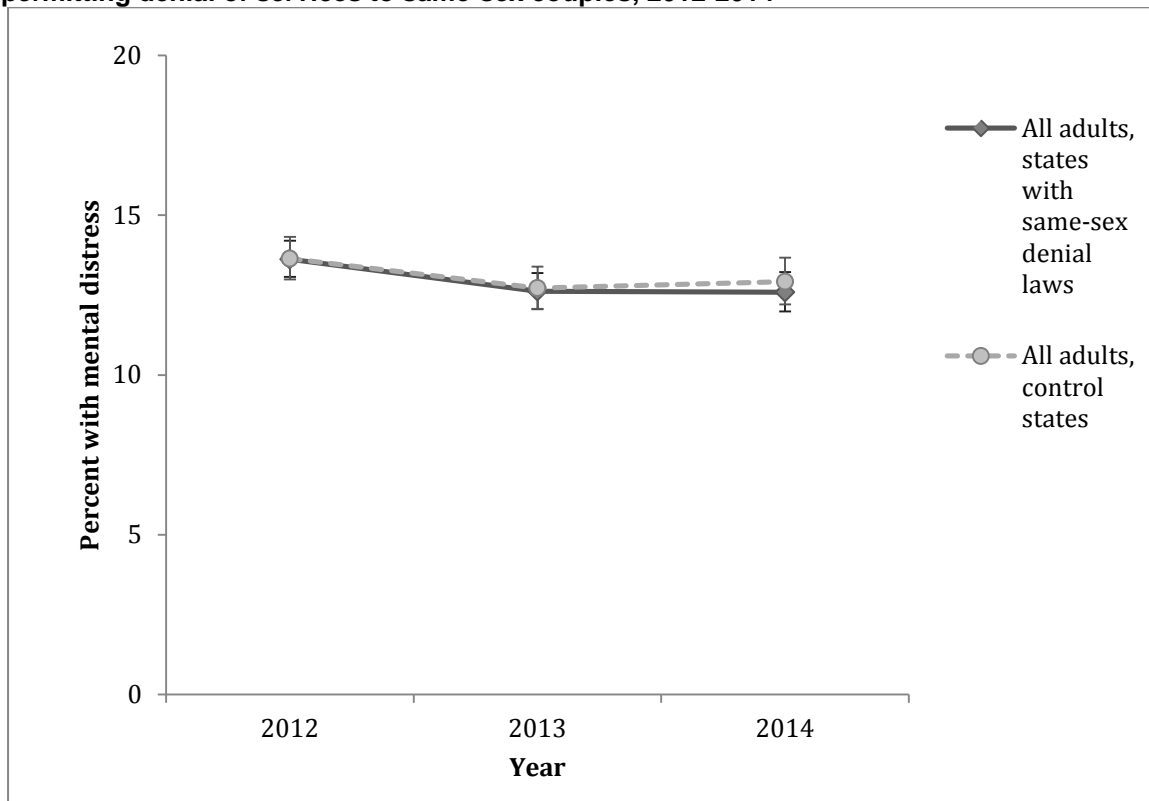
eTable 10: Change in mentally unhealthy days after implementation of laws permitting denial of services to same-sex couples (N=109,089)

Variable	Mentally unhealthy days	95% Confidence Interval
Law permitting denial of services to same-sex couples	0.00	-0.34 - 0.33
Sexual minority	1.48*	-0.01 - 2.97
Law permitting denial of services to same-sex couples*sexual minority	2.47**	0.49 - 4.46
Year		
2014	Ref	
2015	0.05	-0.19 - 0.29
2016	0.30***	0.08 - 0.51
Year*sexual minority		
2014*sexual minority		
2015*sexual minority	-0.53	-1.94 - 0.87
2016*sexual minority	-0.01	-1.31 - 1.30
State		
Delaware	Ref	
Idaho	-0.40**	-0.73 - -0.06
Indiana	0.17	-0.16 - 0.50
Michigan	0.26	-0.12 - 0.65
Nevada	0.28	-0.15 - 0.71
North Carolina	-0.32*	-0.70 - 0.06
Ohio	0.21	-0.12 - 0.54
Utah	0.01	-0.34 - 0.37
Virginia	-0.13	-0.44 - 0.18
State*sexual minority		
Delaware*sexual minority	Ref	
Idaho*sexual minority	1.60*	-0.28 - 3.48
Indiana*sexual minority	0.17	-1.41 - 1.75
Michigan*sexual minority	0.58	-1.49 - 2.65
Nevada*sexual minority	2.02**	0.17 - 3.88
North Carolina*sexual minority	-0.46	-2.56 - 1.63
Ohio*sexual minority	1.58*	-0.15 - 3.31
Utah*sexual minority	-0.66	-2.51 - 1.20
Virginia*sexual minority	0.22	-1.28 - 1.71
Race/ethnicity		
Non-Hispanic White	Ref	
Non-Hispanic Black	-1.21***	-1.47 - -0.95
Non-Hispanic multiracial	-0.64***	-1.03 - -0.26
Other race/ethnicity	1.22***	0.52 - 1.92
Hispanic	-1.84***	-2.17 - -1.51
Unknown/other	-0.47	-1.13 - 0.20
Sex		
Male	Ref	
Female	1.41***	1.25 - 1.57
Age group		
18-24	Ref	
25-34	-0.06	-0.43 - 0.31
35-44	-0.36*	-0.73 - 0.02
45-54	-0.79***	-1.16 - -0.43
55 - 64	-1.82***	-2.19 - -1.45

Educational attainment		
Did not graduate high school	Ref	
High school graduate	-0.89***	-1.26 - -0.51
Attended college/technical school	-0.63***	-1.00 - -0.25
Graduated from college/technical school	-1.42***	-1.79 - -1.05
Unknown	-2.11***	-3.13 - -1.09
Income group		
< \$10,000		
\$10,000 - \$14,999	Ref	
\$15,000 - \$19,999	-0.80**	-1.51 - -0.09
\$20,000 - \$24,999	-1.11***	-1.77 - -0.45
\$25,000 - \$34,999	-1.28***	-1.90 - -0.66
\$35,000 - \$49,999	-2.28***	-2.87 - -1.70
\$50,000 - \$74,999	-2.39***	-2.97 - -1.82
\$75,000 or more	-2.81***	-3.38 - -2.24
Unknown	-3.24***	-3.81 - -2.68
Did not report	-2.45***	-3.06 - -1.84
Employment status		
Employed	Ref	
Self-employed	-0.03	-0.28 - 0.22
Out of work > 1 year	3.26***	2.61 - 3.91
Out of work < 1 year	2.19***	1.60 - 2.78
Homemaker	-0.14	-0.46 - 0.18
Student	0.29	-0.15 - 0.72
Retired	0.62***	0.31 - 0.94
Unable to work	7.12***	6.70 - 7.53
Unknown	0.93*	-0.10 - 1.96
Marital status		
Married	Ref	
Divorced	0.97***	0.72 - 1.23
Widowed	1.83***	1.30 - 2.36
Separated	2.29***	1.65 - 2.93
Never married	0.23*	-0.02 - 0.49
Unmarried couple	0.73***	0.27 - 1.20
Unknown	-0.52	-1.60 - 0.57
Constant	6.41***	5.62 - 7.20

Notes: *p<0.1, **p<0.05, ***p<0.01. Notes: *p<0.1, **p<0.05, ***p<0.01. The estimates were adjusted for each of the variables contained in the table.

eFigure 1: Changes in mental distress over time in states that did and did not pass laws permitting denial of services to same-sex couples, 2012-2014



Note: The figure depicts that there were not pre-existing differences in mental distress time trends in states that did and did not go on to pass same-sex denial laws. Error bars depict 95% confidence intervals around estimates. Note that the scale of the y-axis differs from the main figure in order for error bars to be visible.