

Brief Report

An Examination of State-Level Personality Variation and Physician Aid in Dying Legislation



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Abstract

Context. Physician aid in dying is a controversial topic in the U.S., and legislation exists in some states. Personality traits are associated with preferences for end-of-life care and also tend to cluster systematically across states and other geographic regions. Such clustering of personality traits could relate to legislation including physician aid in dying.

Objective. To determine whether average levels of personality traits in each U.S. state differ between states with and without physician aid in dying legislation.

Methods. This secondary analysis of national surveys included data on state demographics, political leanings, and state-level averages of Five-Factor Model personality traits. Wilcoxon tests and logistic regression tests were used to assess whether state-level averages in personality traits differed across states with and without physician aid in dying legislation.

Results. States with physician aid in dying legislation had significantly higher average levels of the trait of openness and significantly lower average levels of the trait of neuroticism. The association with openness was no longer significant after accounting for state conservative advantage.

Conclusion. The social dialogue and potential controversy surrounding physician aid in dying may be linked to aggregate differences in state personality profiles. States with physician aid in dying legislation tend to be areas where constituents are on average more open minded and experience greater emotional stability. More work is needed to ascertain whether the experiences of receiving and providing end-of-life care may differ across these regions, particularly in relation to conversations around physician aid in dying. *J Pain Symptom Manage* 2018;56:385–389. © 2018 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.

Key Words

Personality, legislation, end-of-life care, physician aid in dying, hastening death

Introduction

Advances in public health, screening, and interventions have drastically expanded life expectancies, and this includes the time that individuals can live with terminal and life-limiting illnesses. These advances in health care are juxtaposed by cases where patients request physician aid in dying to end their pain and suffering.¹ Physician aid in dying or hastening death

is distinguished from suicide when a patient is deemed mentally competent, has a life-threatening illness, their life expectancy is six months or less, and they intend to limit suffering related to the illness. Physician aid in dying has been a topic of legal and social controversy,² yet a growing number of states have considered or implemented legislation to support physician aid in dying.^{2,3} Oregon was the first state

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in the U.S. to enact a so-called Death with Dignity Act in 1997, followed by Washington in 2009, and California in 2016, thus completing the West Coast's legalization of hastened death. Since 2013, similar laws have also been passed in Vermont, Colorado, and the District of Columbia. Presently, the Hawaii state senate has passed legislation supporting physician aid in dying, and the bill is awaiting approval from the governor.

Why might individuals disagree so strongly on physician aid in dying? Acknowledging that decisions making regarding end-of-life care may be acutely emotionally laden,^{1,4,5} personal and political viewpoints on these topics may be a reflection of long-standing core beliefs, preferences, and emotion. These personality traits predict mundane consumer preferences, political viewpoints, and also relate to decisions to seek or forgo life-sustaining treatments.^{6–8} Both patients and physicians have noted that threats to autonomy, independence, and one's sense of self or personality may be a motive for some individuals to request physician aid in dying.^{4,9} Within the Five-Factor Model of personality,¹⁰ openness refers to creative and liberal traits. Conscientiousness refers to dutifulness, rule following, and organization. Extraversion refers to sociability, gregariousness, and the proclivity to experience positive emotions. Agreeableness refers to empathic, trusting, and affiliative traits. Neuroticism refers to the tendency to experience mood swings, engage in negativistic thinking, and to use avoidant coping. These traits play important roles in shaping how patients with life-threatening illness, their families, and their clinicians perceive, manage, and express their psychological distress.^{7,8,11,12} Diverse viewpoints and personality traits may exist within couples and families,^{13,14} and this may be reflected in the finding that requests for aid in dying have been points of disagreement and distress for some family of terminally ill patients.⁹

Beyond the individual and family levels, *Geographical Psychology* is an emerging field that recognizes personality traits cluster systematically in geographic regions of the U.S., and this clustering is linked to social, political, and cultural processes.^{15–17} Rentfrow et al.¹⁷ gathered information on the Five-Factor Model of personality from more than 1.5 million respondents across the U.S. They found three profiles of these traits that clustered in geographic regions around the U.S. Friendly and conventional profiles clustered around Midwestern and Southern Atlantic regions. Relaxed and creative profiles marked by high levels of openness and low levels of neuroticism clustered around the Far West and Mid-Atlantic States. Temperamental and uninhibited traits were observed in the North Atlantic States. These regions were associated with a number of political, economic, and health

indicators. For instance, the relaxed and creative region had higher levels of social tolerance, were less likely to vote for Republican candidates, and had lower numbers of Protestant Christians. Such state-to-state variation in personality could relate to both the social dialogue and legal climate surrounding physician aid in dying.

Given that these state-level aggregate personality scores related to political outcomes, religious affiliation,¹⁷ and that patient personality traits are known to vary with preferences for end-of-life care,⁷ the present study explored whether state-level differences in personality would exist between U.S. states with and without physician aid in dying legislation. It was hypothesized that U.S. states (including the District of Columbia) with physician aid in dying legislation would report higher level of openness, as this trait is linked to creative problem solving and preferences for individualism. It was also hypothesized that states with physician aid in dying legislation would report lower levels of neuroticism as this trait is linked to risk aversion and negativistic problem orientations. Data were obtained from publicly available records.

Method

Procedure

Public data sets including a published report on personality norms,¹⁵ the U.S. Census Bureau 2015 American Community Survey,¹⁸ and the 2015 Gallup Daily Tracking Survey¹⁹ were linked in a common database. All information was publically available and deidentified data so institutional review board approval was not warranted. Data were compiled for all 50 U.S. states and the District of Columbia ($N = 51$).

Measures

Personality. State-level Five-Factor personality dimensions were retrieved from Rentfrow et al.¹⁵ Rentfrow et al. surveyed 619,387 U.S. adults who completed the 44-item Big Five Inventory²⁰ online during a six-year period beginning 1999. The report included national averages for each personality dimensions in each state and the national capital. Each state included at least 1500 respondents.

Demographic Covariates. Region-level data on population size, age, gender, race/ethnicity (% white and non-Latino/a vs. all others) were retrieved from the U.S. Census Bureau's public database for the 2015 American Community Survey.¹⁸ State political views were retrieved from the 2015 Gallup Daily Tracking survey.¹⁹ The number of hospitals per state was gleaned from the Center to Advance Palliative Care

Report Card, which gathered hospital data from American Hospital Association Annual Survey Database.²¹

Analysis. Data were analyzed using Wilcoxon signed rank tests to ascertain whether states with physician aid in dying legislation differed from others based on aggregate personality scores. Logistic regression was used to assess the unique associations of personality traits with physician aid in dying legislation and to control for potential confounding by other state demographics.

Results

Demographic characteristics of the U.S. states and the District of Columbia are displayed in Table 1. Results of the Wilcoxon signed rank tests (highest rank = 1; lowest rank = 51) indicated that states with physician aid in dying were marked by significantly higher levels of openness (mean rank = 10.86 vs. 28.41; $P = .0002$) and lower levels of neuroticism (mean rank = 38.57 vs. 24.00; $P = 0.014$). Potential confounders including state gender distribution, conservative advantage, and population were assessed. Conservative advantage was

Table 1
Demographic Characteristics for U.S. States and the District of Columbia

State	Female, %	Median Age	PAID Legislation	State Population	Number of Hospitals	Conservative Advantage
Alabama	51.6	38.7	No	4,858,979	50	31.9
Alaska	47.4	33.3	No	738,432	4	19.3
Arizona	50.4	37.4	No	6,828,065	38	12.8
Arkansas	50.9	37.9	No	2,978,204	38	30.0
California	50.3	36.2	Yes	39,144,818	227	1.6
Colorado	49.8	36.4	Yes	5,456,574	37	8.1
Connecticut	51.2	40.6	No	3,590,886	25	1.6
Delaware	51.6	39.7	No	945,934	4	9.3
District of Columbia	52.4	33.8	Yes	672,228	7	14.9
Florida	51.2	41.8	No	20,271,272	117	14.0
Georgia	51.3	36.4	No	10,214,860	58	21.0
Hawaii	49.4	37.7	Yes	1,431,603	10	1.3
Idaho	50.0	35.8	No	1,654,930	9	31.8
Illinois	50.9	37.7	No	12,859,995	104	5.1
Indiana	50.9	37.5	No	6,619,680	65	20.7
Iowa	50.4	38.1	No	3,123,899	30	17.3
Kansas	50.2	36.2	No	2,911,641	33	17.7
Kentucky	50.9	38.8	No	4,425,092	49	24.3
Louisiana	51.1	36.4	No	4,670,724	43	26.9
Maine	51.0	44.6	No	1,329,328	14	11.2
Maryland	51.5	38.3	No	6,006,401	40	4.5
Massachusetts	51.5	39.4	No	6,794,422	41	-5.8
Michigan	50.8	39.7	No	9,922,576	72	11.6
Minnesota	50.3	37.9	No	5,489,594	38	10.9
Mississippi	51.6	37.0	No	2,992,333	45	27.6
Missouri	51.0	38.4	No	6,083,672	63	20.0
Montana	49.8	39.9	No	1,032,949	9	23.2
Nebraska	50.3	36.1	No	1,896,190	16	18.6
Nevada	49.9	37.8	No	2,890,845	12	9.9
New Hampshire	50.6	42.8	No	1,330,608	11	12.0
New Jersey	51.2	39.6	No	8,958,013	57	3.3
New Mexico	50.4	37.4	No	2,085,109	14	6.9
New York	51.4	38.3	No	19,795,791	137	0.6
North Carolina	51.2	38.4	No	10,042,802	72	19.5
North Dakota	48.7	34.9	No	756,928	6	27.8
Ohio	51.1	39.3	No	11,613,423	99	16.3
Oklahoma	50.4	36.3	No	3,911,338	43	26.3
Oregon	50.6	39.1	Yes	4,028,977	27	2.7
Pennsylvania	51.1	40.7	No	12,802,503	120	12.3
Rhode Island	51.6	39.7	No	1,056,298	9	-0.9
South Carolina	51.3	39.0	No	4,896,146	43	25.1
South Dakota	49.7	36.9	No	858,469	9	25.3
Tennessee	51.3	38.7	No	6,600,299	50	24.4
Texas	50.4	34.4	No	27,469,114	198	19.8
Utah	49.7	30.6	No	2,995,919	13	27.7
Vermont	50.7	43.1	Yes	626,042	4	-15.3
Virginia	50.8	37.8	No	8,382,993	52	13.4
Washington	50.0	37.5	Yes	7,170,351	41	3.4
West Virginia	50.7	42.2	No	1,844,128	27	23.3
Wisconsin	50.3	39.4	No	5,771,337	57	14.9
Wyoming	49.7	36.5	No	586,107	6	27.6

PAID = physician aid in dying.

significantly lower in states with physician aid in dying legislation (mean rank = 9.93 vs. 28.56; $P = 0.001$). Table 2 presents a logistic regression with openness, neuroticism, and conservative advantage entered as predictors at separate steps, respectively. Although openness remained a significant predictor after the entry of neuroticism, openness was no longer significant after the entry of conservative advantage in the third and final models. In the final model, lower levels of neuroticism and lower levels of conservative advantage were significant predictors of physician aid in dying legislation. Probabilities of adopting physician aid in dying legislation were estimated for each state based on neuroticism, openness, and conservative advantage. Among states yet to pass such legislation, Nevada was the state with the highest estimated probability of adopting similar legislation (65.9%). Massachusetts and Arizona were the next highest states with probabilities of 25.1% and 22.8%, respectively.

Discussion

Although physician aid in dying legislation is relatively young in the political history of the U.S., there is fairly rapid growth of support during the last five to 10 years. With the exception of Colorado, legislation has been passed primarily in coastal states. These states tend to rank highly with regard to aggregate levels of openness to experience and tend to rank much lower with regard to neuroticism. Rentfrow et al.¹⁷ referred to this personality profile of high openness and low neuroticism as relaxed and creative and documented that it was linked to more liberal political views and a value for individualism. Individuals with these traits are more inclined to exploration and travel. It has been argued that the clustering of these individuals in the Western U.S. may be an outgrowth of early pioneers with adventurous traits exploring and settling in the Western regions and then passing these traits on to subsequent generations.

Although it is clear that individuals tend to cluster in social networks and communities of individuals with similar traits, the question remains of how such traits influence legislation around death with dignity. Open-minded individuals tend to be creative problem

solvers, liberally minded, and are willing to take the perspective of other individuals. This possibility is supported by the finding that openness was not significantly associated with physician aid in dying legislation after accounting for conservative advantage.

The association of low neuroticism with physician aid in dying remained significant after accounting for openness and state political leanings. Individuals who are low in neuroticism tend to experience more stability in their negative emotions as well as are less inclined toward pessimistic thinking and avoidant coping.²² Inversely, higher levels of neuroticism are linked to a greater anxiety and avoidance in response to reminders of mortality.^{23,24} Thus, areas characterized by lower average levels of neuroticism may be more amenable to contemplating the challenges faced at the end of life and are less fearful about the prospect of taking steps to hasten death.

The findings are qualified by its strengths and limitations. This secondary data analysis was conducted on well-validated measures. Statistical power was inherently limited by the analysis of legislation at the state level. Further work that assesses diverse religious affiliations and their relation to legislation is needed. Crossnational research on personality traits could be used to determine if similar relationships between personality and physician aid in dying are observed internationally.²⁵ Finally, care should be taken to avoid ecological fallacies in which findings from state-level analyses are interpreted at the individual level and vice versa. The passage of legislation is complex, and personality-legislation relationships should not be interpreted as causal. Multilevel analyses are needed to assess how personality traits and attitudes toward end-of-life care emerge and interact across social systems and over time. For example, linkages between individual's personality and preferences for end-of-life care could be moderated by the traits, preferences, and local norms of others living in their region.

In conclusion, an appreciation of the regional distribution of personality traits may provide insights into complex manner in which family, health care clinicians, and the broader community may react to requests for physician aid in dying and other requests near the end of life. When health care clinicians feel compelled to

Table 2
Logistic Regression Model of State Characteristics Associated With PAID Legislation

Model	Variable	B	SE	Wald	Degrees of Freedom	Significance	Exp(B)	Cox & Snell R ²
1	Openness rank	−0.116	0.047	5.989	1	0.014	0.891	0.180
2	Openness rank	−0.114	0.048	5.633	1	0.018	0.892	0.281
	Neuroticism rank	0.091	0.041	4.864	1	0.027	1.096	
3	Openness rank	−0.077	0.056	1.905	1	0.168	0.926	0.436
	Neuroticism rank	0.215	0.093	5.353	1	0.021	1.240	
	Conservative advantage	−0.289	0.124	5.451	1	0.020	0.749	

PAID = physician aid in dying.

Openness and neuroticism ranks were coded so that the highest rank was 1 and the lowest rank was 51.

provide care that goes against their personal beliefs, they may experience moral distress.²⁶ More work is needed to ascertain whether the state-to-state variation in personality traits impacts how patients, families, and clinicians respond to requests for physician aid in dying. It is possible that individuals could feel conflicted if their personalities, worldviews, and preferences for end-of-life care diverge from local norms. Awareness of these regional differences could offer insight to palliative care clinicians whose careers take them to new geographic regions, as the impact of psychosocial and behavioral health interventions may depend in part on the local context where treatments are delivered.²⁷

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