

Suicides of Psychologists and Other Health Professionals: National Violent Death Reporting System Data, 2003–2018

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Suicide is a prevalent problem among health professionals, with suicide rates often described as exceeding that of the general population. The literature addressing suicide of psychologists is limited, including its epidemiological estimates. This study explored suicide rates in psychologists by examining the National Violent Death Reporting System (NVDRS), the Centers for Disease Control and Prevention's data set of U.S. violent deaths. Data were examined from participating states from 2003 to 2018. Trends in suicide deaths longitudinally were examined. Suicide decedents were characterized by examining demographics, region of residence, method of suicide, mental health, suicidal ideation, and suicidal behavior histories. Psychologists' suicide rates are compared to those of other health professionals. Since its inception, the NVDRS identified 159 cases of psychologist suicide. Males comprised 64% of decedents. Average age was 56.3 years. Factors, circumstances, and trends related to psychologist suicides are presented. In 2018, psychologist suicide deaths were estimated to account for 4.9% of suicides among 10 selected health professions. As the NVDRS expands to include data from all 50 states, it will become increasingly valuable in delineating the epidemiology of suicide for psychologists and other health professionals and designing prevention strategies.

Public Significance Statement

This study advances knowledge regarding rates of suicide among psychologists by using a national database. Between 2003 and 2018, 159 psychologists died by suicide, with males comprising 64% of decedents. In 2018, psychologist suicide deaths were estimated to account for 4.9% of all suicides among selected health professions. Results highlight the need to improve suicide prevention efforts in psychologists, mental health, and other health professionals.

Keywords: psychologist, suicide, violent death, health professionals, mental health

Suicide is a serious public health problem globally and in the United States. The [World Health Organization \(WHO, 2021\)](#) estimates 700,000 deaths by suicide per year, which translates to one every 40 s, accounting for 1.3% of deaths

worldwide. In 2000, the [Centers for Disease Control and Prevention \(CDC, 2020a, 2020b\)](#) estimated 29,350 U.S. deaths by suicide. By comparison, in 2018, nearly 2 decades later, the National Center for Health Statistics (NCHS) of the

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CDC recorded 48,344 U.S. deaths by suicide, a staggering 65% increase. These statistics depict the concerning upward trend in U.S. suicide rates (National Institute of Mental Health [NIMH], 2020) and highlight the critical need for increased understanding and mitigation. To advance suicide prevention efforts, it is important to identify groups at risk for suicide, including occupations with heightened risk. Elevated suicide rates have been noted generally for health professionals (Agerbo et al., 2007; Davis et al., 2021; Duthiel et al., 2019; Kleespies et al., 2011; Milner et al., 2016; Witte et al., 2019), yet the literature to date addressing suicide in psychologists is limited. Psychologists, even luminaries such as Bruno Bettelheim, Phillip Brickman, Lawrence Kohlberg, and Michael Mahoney, have died by suicide. The WHO (2021) asserts, “the timely registration and regular monitoring of suicide form the backbone of effective national suicide prevention strategies,” making improved knowledge of death by suicide among psychologists and other health professionals imperative.

Early studies of suicide among psychologists offer conflicting findings. Using the American Psychological Association (APA) membership data from 1960 to 1969, Mausner and Steppacher (1973) calculated a rate for suicide in female psychologists approximately three times higher than the general population (standardized mortality ratio [SMR] = 2.8), whereas the suicide rate for male psychologists was comparable to the general population. Phillips (1999) later examined 1981–1990 APA membership data and found suicide rates among psychologists were comparable to or less than suicide rates in the general population with the overall rates decreasing from the 1960s to the 1980s. The generalizability of these findings may be limited as they only include data from APA members.

Kleespies et al.’s (2011) evaluation of the National Occupational Mortality Surveillance (NOMS) database for

28 states from 1984 to 1998 provides the most recent data on psychologist suicides. They estimated elevated risk for psychologists overall (proportionate mortality ratio [PMR] = 166 where $PMR > 100$ signifies increased risk; CDC, 2020a, 2020b). When stratified by sex and race, White male psychologists had a PMR of 161 and White female psychologists had a PMR of 212. Black male and female psychologists did not have elevated PMRs.

Suicidal ideation and related risk factors in psychologists have been documented in the literature. The majority of 800 psychologist respondents to Pope and Tabachnick’s (1994) survey reported having been in therapy (84%) and having experienced at least one bout of clinical depression (61%). Additionally, 29% disclosed having experienced suicidal feelings and 4% disclosed having made at least one suicide attempt. Gilroy et al.’s (2002) survey of practicing psychologists about personal mental health concerns ($n = 462$) revealed that 62% self-identified as depressed and 42% reported some form of suicidal ideation or behavior. Among psychologist respondents to the 2009 APA Colleague Assistance and Wellness Survey, 18% reported suicidal ideation. A large percentage of this group (43%) did not tell someone else about their suicidal ideation (Bridgeman & Galper, 2010).

The literature on suicide risk in health professionals in general informs the understanding of suicide risk in mental health professionals. Health professionals such as dentists, physicians, nurses, and veterinarians have been found to have heightened risk for suicide (Agerbo et al., 2007; Davis et al., 2021; Duthiel et al., 2019; Kleespies et al., 2011; Milner et al., 2016; Witte et al., 2019), even after controlling for variables like age, sex, marital status, and gross income (Agerbo et al., 2007). Studies have yielded variable evidence for higher suicide risk for health professionals when sex is examined and for health professionals compared to the general population. For example, some studies have suggested higher risk (Davidson et al., 2019; Duthiel et al., 2019; Witte et al., 2019) while other reports have been more nuanced, finding more heterogeneous patterns for sex and across professions (Davis et al., 2021).

A recent systematic review found that female physicians had a significantly higher suicide risk than other women but that male physicians were at lower suicide risk than the general male population (Duarte et al., 2020). Across medical specialties, suicide rates were highest in general practitioners, followed by internal medicine and then psychiatrists (Duthiel et al., 2019). The latter underscores the need for better understanding of mental health professionals’ suicide risk. Risk factors for suicide in physicians and other health professionals have been hypothesized or found to include job stress, personality traits, mental state, mental illness, social situation, access to lethal means, financial debt, and particular work experiences such as those leading to the desensitization of death and injury



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(Aasland, 2013; Cornette et al., 2009; Fink-Miller & Nestler, 2018; Gold et al., 2013).

Trends in suicidality of health professionals reveal its complexity. One longitudinal study revealed that whereas suicide rates of physicians may be high relative to the general population, there was a decrease in their suicide rates from 1980 to 2020 (Duarte et al., 2020). This latter finding contrasts with the increase in deaths by suicide in the general U.S. population since 2000 (NIMH, 2020).

Such inconsistencies underscore the reality that suicide risk is multifactorial and reflect that epidemiological efforts are based on estimates of different samples. The mental health burden placed on both the general public and health professionals by the nexus of stressors associated with the coronavirus disease (COVID-19) pandemic and the resultant psychiatric sequelae are noteworthy (Czeisler et al., 2020) and potentially affect suicide risk (Brown & Schuman, 2021). Anecdotal accounts such as the tragic death by suicide of Lorna Breen, an emergency medicine physician who died by suicide after working through the early dire phase of the pandemic in New York and contracting COVID-19 (Moutier et al., 2021), speak to the potential for elevated risk associated with the pandemic. The true impact of the pandemic on suicide rates in health professionals has yet to be determined.

There are early hints of potentially increased suicide rates for health professionals based on the rise in known risk factors. A survey of health care workers in China during the peak of the pandemic revealed high levels of anxiety, depression, distress, and insomnia (Lai et al., 2020). The dramatic rise in stress during the pandemic yields greater demand for, and systematic changes in, the provision of psychological services with concomitant potential for greater burnout in mental health professionals as they strive

to work effectively to address these challenges (Bojdani et al., 2020; Druss et al., 2021; Moreno et al., 2020; Stuijzand et al., 2020).

Aim of Study

This study aimed to elucidate suicides of psychologists by analyzing data in the National Violent Death Reporting System (NVDRS). Demographic, occupational, and other factors associated with psychologists' death by suicide between 2003 and 2018 are explored. Cases and rates of psychologist suicide are compared with those of selected other health professionals.

Method

Overview of the NVDRS

The CDC's NVDRS is a national system that pools state-based data on violent deaths, including suicide, and their circumstances into a systematic national data set. The NVDRS gathers information from various sources, including death certificates, law enforcement and medical examiner reports, and toxicology analyses into an anonymous database that excludes personally identifiable information. It includes over 600 unique data elements providing context about cases (e.g., mental and physical health problems, life stressors, finances, location of death, weapons used). It also provides narrative summaries based on law enforcement and coroner reports. Occupational information is entered in a free text field based on decedents' death certificates, allowing for analysis of occupation-specific suicide patterns.

Data reporting began with seven states and expanded over time. This study summarizes data from 2003 to 2018, the last year for which data were available as this article was written. By that point, 41 states were reporting. This study summarizes cases of psychologist suicide and reports on suicides of selected other health professionals. The Institutional Review Board (IRB) at the University of Minnesota determined the study to be exempt due to the data set's de-identified aggregate data.

Procedure

Access to the NVDRS was obtained via the CDC's standard application process specifying pertinent variables. Data were sorted by occupation. Decedents were reviewed for inclusion to identify psychologist suicide decedents with occupational categories of "psychologist" or "psychology." Excluded cases identified related occupations (e.g., psychology assistant, counselor, therapist) or master's degree in accord with APA's (2015) definition that psychologists have doctoral psychology degrees. Unemployed or retired psychologists were included. Two raters adjudicated entries meeting inclusion criteria. Of the 176 initially identified cases, 17 were excluded yielding a sample of 159 psychologist



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suicide decedents. For all disciplines, counts were derived following a rigorous, albeit imperfect, methodology that provides estimates of suicide incidence; true incidence is unknown.

Statistical Analysis

Summary statistics based on demographic variables and suicide method were calculated using Microsoft Excel. Differences between male and female decedents were evaluated on demographic characteristics, method of suicide, and histories of suicidal ideation and behavior. Independent samples *t* tests were used for continuous variables and chi-square tests of independence were used for categorical variables. Pearson correlations were computed for suicides per profession and workforce size of each profession.

Results

2003–2018 Psychologist Suicide Deaths

Figure 1 presents cumulative psychologist suicide deaths reported in the NVDRS from 2003 to 2018 for contributing states and how many states reported each year. Reporting states increased over time, accounting partially for the increasing slope of deaths. Of the 159 psychologist deaths by suicide identified, half were after 2014 (i.e., the last five of the system's 16 years to date). At least three psychologists died by suicide annually ($M = 9.7$; $Mdn = 7.5$; $SD = 7.52$). The most deaths (34) occurred in 2018, the year with the greatest number of reporting states.

Demographic Characteristics of Psychologist Decedents

Table 1 presents decedents' demographics. Approximately one third (58; 36%) were females; two thirds (101; 64%)

were males. The mean age was 56.3 years ($SD = 14.6$). Females ($M = 53.4$; $SD = 15.5$) were somewhat younger than males ($M = 57.9$; $SD = 13.9$), a modest effect size of .31. Chi-square test of independence revealed significant association between sex and age, $\chi^2(1, N = 159) = 5.8, p = .02$, when examined for age: Women (43.1%) more commonly than men were under 50. Married/civil union/domestic partnership was the most common marital status among decedents ($n = 64$; 40%), followed by divorced ($n = 47$; 30%). Most were White ($n = 147$; 92%), five were two or more races (3%), four were Black (3%), and three were Asian/Pacific Islander (2%).

Region

States were grouped into U.S. Census Bureau regions revealing the South had the most cases ($n = 57$; 35.8%), followed by the West ($n = 39$; 24.5%), Midwest ($n = 32$; 20.1%), and Northeast ($n = 31$; 19.5%). Southern states reported nearly twice the number of psychologist suicides reported in the Northeast.

Suicide Method and Alcohol Use

Table 2 reveals firearms ($n = 54$; 34%) were the most common suicide method, followed by asphyxia ($n = 44$; 28%) and overdose ($n = 41$; 26%). Male suicide deaths mirrored this trend, with firearms ($n = 43$; 43%) most common, asphyxia ($n = 32$; 32%) second, and overdose ($n = 15$; 15%) third. Female suicide deaths in order were overdose ($n = 26$; 45%), asphyxia ($n = 12$; 21%), and firearms ($n = 11$; 19%). Male and female methods differed significantly in terms of their relative frequency, $\chi^2(2, N = 139) = 20.7, p < .001$.

No alcohol use was suspected at the time of suicide in most cases ($n = 111$; 70%). Alcohol consumption preceding fatal incidents was suspected in 24 (15%) of the cases based on circumstantial evidence or reports. Alcohol use was unknown for the other 24 (15%) cases.

Mental Illness of Decedents

Table 3 presents decedents' mental health problems and diagnoses. Totals for these categories can exceed the total entries due to some decedents' multiple mental health problems or diagnoses. More than half of decedents reportedly had mental health problems ($n = 87$; 55%). Of those, 69 (43%) reportedly had current mental health treatment, while 74 (47%) had mental health treatment histories. The most common diagnoses were depression/dysthymia ($n = 68$; 43%) and anxiety ($n = 19$; 12%). Fewer were reported to have had alcohol ($n = 13$; 8%) or other substance use ($n = 12$; 8%) problems.



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History of Suicidal Ideation and Behavior

Table 3 presents decedents' histories of suicidal ideation and behavior. Histories of suicidal ideation or plans were identified for 35 (22%) decedents. Chi-square revealed association between sex and suicidal ideation history, $\chi^2(1, N = 159) = 4.3, p = .04$, with greater frequency in women. Suicide attempt histories were noted for 30 (19%) decedents. Chi-square revealed more previous attempts in women than men, $\chi^2(1, N = 159) = 6.5, p = .01$. Suicide intent was disclosed to others in 42 (26%) cases. Suicide notes, electronic or written, were found for 70 (44%) decedents. Chi-squares did not reveal sex differences in intent disclosure or suicide notes.

Suicide Rates for Selected Health Professions

NVDRS data for nine other health professions were mined to provide comparisons for psychologists as displayed in Table 4. Professions' suicide deaths are presented by sex and year, revealing 4,733 suicides across these health professions between 2003 and 2018. Of these, 2,749 (58.1%) were females and 1,984 (41.9%) were males. Suicides were evident for all selected professions, most having at least one suicide each reporting year.

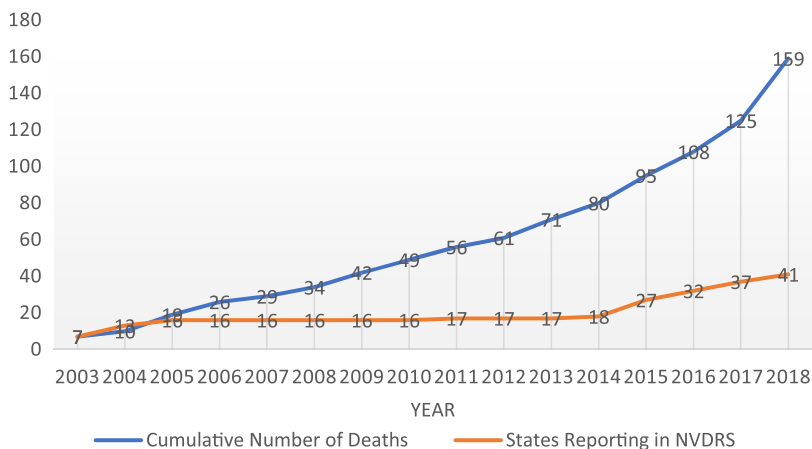
Nursing, the largest health profession (Robiner et al., 2014), had the most suicide deaths ($n = 2,532$). Psychiatrists and psychoanalysts constituted the fewest suicide deaths ($n = 57$). Overall suicide reports across professions increased in recent years, for example, from 2014 ($n = 325$) to 2018 ($n = 688$) suicide deaths more than doubled. This paralleled the increase in states reporting (from 27 to 41), with corresponding increase in populations surveyed. The extent to which this reflects an increase in the rate of suicide deaths, an increase in the number of states reporting, an increase in the number of health professionals, or combinations of factors, is not known.

More suicide deaths were reported for males than females in seven of these health professions, that is, for all but nurses, nurse practitioners, and social workers. The greatest number of male suicide deaths was in surgeons and nonpsychiatric physicians ($n = 610$), accounting for 87% of nonpsychiatric physician suicide deaths. Nurses ($n = 2,080$) had the greatest number of female suicide deaths, accounting for 82% of nursing suicides.

Longitudinal Trends

Figure 2 presents longitudinal data for the subset of 16 reporting states from 2005 to 2013, a period of consistency in

Figure 1
Cumulative Psychologist Death by Suicide/Intentional Self-Harm and Reporting States: 2003–2018



Note. See the online article for the color version of this figure.

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Table 1
Demographic Characteristics of Psychologist Death by Suicide/Intentional Self-Harm

Demographic characteristic	Female		Male		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	53.4	15.5	57.9	13.9	56.3	14.6
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
20–29	1	1.7	2	2.0	3	1.9
30–39	10	17.2	11	10.9	21	13.2
40–49	14	24.1	12	11.9	26	16.4
50–59	14	24.1	32	31.7	46	28.9
60–69	9	15.5	24	23.8	33	20.8
≥70	10	17.2	20	19.8	30	18.9
Total	58	100.0	101	100.0	159	100.0
Marital status						
Married/civil union/domestic partnership	22	37.9	42	41.6	64	40.3
Divorced	18	31.0	29	28.7	47	29.6
Widowed	5	8.6	8	7.9	13	8.2
Never married	13	22.4	20	19.8	33	20.8
Single NOS	0	0.0	2	2.0	2	1.3
Total	58	100.0	101	100.0	159	100.0
Ethnicity/race						
White	51	87.9	96	95.0	147	92.5
Black or African American	2	3.4	2	2.0	4	2.5
Asian/Pacific Islander	1	1.7	2	2.0	3	1.9
Two or more races	4	6.9	1	1.0	5	3.1
Hispanic	0	0.0	0	0.0	0	0.0
Total	58	100.0	101	100.0	159	100.0

Note. NOS = not otherwise specified.

the number of reporting states. This analysis is not subject to the confounding discussed earlier for Figure 1 which was influenced by the expanding number of reporting states over time. This subset comprised 58 suicides of psychologists, ranging between three and nine per year ($M = 6.4$; $Mdn = 7$; $SD = 1.87$). The number of suicides per year for the first 4 years ($M = 6$) is fairly consistent with the number for the last 4 years ($M = 6.5$). Of these, 18 (31%) suicide deaths were females and 40 (69%) were males. Their mean age was 55.3 years ($SD = 13.0$). Minor age differences were evident between females ($M = 52.4$; $SD = 14.0$) and males ($M = 56.6$; $SD = 12.4$).

Table 2
Psychologist Death by Suicide/Intentional Self-Harm by Method: 2003–2018

Death cause	Female		Male		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Asphyxia	12	20.7	32	31.7	44	27.7
Blunt impact	2	3.4	2	2.0	4	2.5
Drowning	3	5.2	2	2.0	5	3.1
Firearm	11	19.0	43	42.6	54	34.0
Laceration	0	0.0	3	3.0	3	1.9
Other trauma	1	1.7	1	1.0	2	1.3
Overdose	26	44.8	15	14.9	41	25.8
Poisoning	3	5.2	3	3.0	6	3.8
Total	58	100.0	101	100.0	159	100.0
Alcohol use suspected	9	15.5	15	14.9	24	15.1

Note. Alcohol use may be underreported as this data was unknown for some entries. The asphyxia category includes hanging.

Suicides of Psychologists and Other Selected Health Professions

Perspective on suicides of psychologists can be gleaned by comparing data for psychologists with that of other health professionals based on 2018 NVDRS data. That year's 41 participating states offered the most comprehensive reporting (see Table 5). Extrapolated estimates of suicides for each profession were derived assuming that the rates of suicide for reporting states were comparable to that of states not participating. Extrapolated estimates of suicides for 10 professions were calculated by dividing reported suicides by .69 because 69% of the U.S. population was accounted for by the participating states according to U.S. census data (U.S. Census Bureau Population Division, 2019). The number of suicides per profession was highly correlated with the size of the professions' workforce, $r(8) = .996$, $p < .001$.

In 2018, 688 suicides within these health professions were reported across 41 states, yielding an extrapolated estimate of nearly a thousand (i.e., 996) health professional suicides in the United States in these professions. The 34 psychologist suicides among these yield an extrapolated estimate of 49 psychologist suicides nationally, accounting for 4.9% of extrapolated suicides among these professions. Psychologist suicides comprised the fifth largest group among the 10 professions, following nurses, social workers, physicians, and pharmacists. The rank of extrapolated suicides for the groups with the greatest number of suicides was generally concordant with the rank of the size of the profession with the

Table 3
Psychologist Death by Suicide/Intentional Self-Harm Background

Mental health factor	Female		Male		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Mental health problem						
Yes	37	63.8	50	49.5	87	54.7
Current mental health treatment	33	56.9	36	35.6	69	43.4
History mental health treatment	34	58.6	40	39.6	74	46.5
Alcohol problem	2	3.4	11	10.9	13	8.2
Other substance use problem	6	10.3	6	5.9	12	7.5
Total	112		143		255	
Mental health diagnosis						
Anxiety	9	15.5	10	9.9	19	11.9
Bipolar	6	10.3	6	5.9	12	7.5
Depression/dysthymia	29	50.0	39	38.6	68	42.8
Schizophrenia	1	1.7	2	2.0	3	1.9
Other/not available	5	8.6	8	7.9	13	8.2
Total	50		65		115	
Suicidal ideation history						
Yes	18	31.0	17	16.8	35	22.0
No/not available	40	69.0	84	83.2	124	78.0
Suicide attempt history						
Yes	17	29.3	13	12.9	30	18.9
No/not available	41	70.7	88	87.1	129	81.1
Suicide intent disclosed						
Yes	18	31.0	24	23.8	42	26.4
No/not available	40	69.0	77	76.2	117	73.6
Suicide note						
Yes	25	43.1	45	44.6	70	44.0
No/not available	33	56.9	56	55.4	89	56.0
Physical health problem						
Yes	14	24.1	26	25.7	40	25.2
No/not available	44	75.9	75	74.3	119	74.8

Note. The percentages for the “mental health problem” and “mental health diagnosis” categories do not add up to 100% and may be overrepresented because some decedents had multiple mental health problems and diagnoses.

exception that advanced practice nursing had relatively fewer suicides than psychology despite its larger workforce.

Suicide Rates Within Selected Health Professions

Suicide rates for professions were calculated by dividing the extrapolated estimate of 2018 suicides by the U.S. Bureau of Labor Statistics (2019) estimate of professionals within each field. This yields a gross index of the number of suicides within each discipline (i.e., numerator) relative to the number of professionals within each field (i.e., denominator). As presented in Table 5, the combined calculated suicides per professionals within each field was .018 across professions. Psychiatrists had the highest rate (.062) based on the extrapolated estimate of 16 suicides. Nonpsychiatric physicians had the second highest rate (.028) based on the extrapolated estimate of 146 physician suicides, followed closely by dentists (.027), psychologists (.025) who had the fourth highest rate, veterinarians (.024), and pharmacists (.019). Although nursing was the profession with the most suicides, the rate of suicide in nurses was relatively lower (.016). Other

professions with higher proportions of women in their workforces also had lower suicide rates, that is, social workers (.015), advance practice nurses (.011), and physician assistants (.007) who had the youngest median age among these professions (Bureau of Labor Statistics, 2019) and had the lowest suicide rate.

Discussion

Between 2003 and 2018, 159 cases of psychologist death by suicide were identified in the NVDRS, providing a basis for examining the phenomenon rather than clarifying its true incidence. Suicide deaths spanned all U.S. regions, with the South accounting for the most (35.8%) cases, followed by the West (24.5%), Midwest (20.1%), and Northeast (19.5%). It is unclear whether this is due to the South and West actually having higher suicide rates among psychologists or if these regions have greater representation due to inclusion of more reporting states. It should also be noted that these regions make up different proportions of the population for the entire United States. According to the U.S. Census Bureau (n.d.), the proportion of each region’s population as compared to the entire U.S. population for the year 2019 was South (38.3%), West (23.9%), Midwest (20.8%), and Northeast (17.1%). This could have affected the number of cases seen within each region, as could other factors, such as the trend for gun ownership to be more than twice as common in the South than in the Northeast (Pew Research Center, 2017). The 2003–2018 psychologist suicide deaths were more than 13 times higher than NVDRS-identified psychologist homicide deaths ($n = 12$) for that same period (Robiner & Li, 2022).

The number of psychologist suicides identified in the NVDRS generally increased longitudinally. It is not clear whether this might signal an actual increasing incidence, and if so what factors may be contributing, or how much it is an artifact of the increasing number of NVDRS-reporting states. Starting in 2020, the data will more clearly reveal temporal patterns, with variation reflecting changes in suicide incidence rather than how many states reported. In the future, we anticipate longitudinal trends will not be confounded by variation in the number of reporting states.

Most psychologist suicide decedents were White (92.5%). Smaller percentages were Black, Indigenous, and People of Color (BIPOC): Black (2.5%), Asian or Pacific Islander (1.9%), and two or more races (3.1%). These proportions align largely with the racial/ethnic makeup of the psychologist workforce in APA’s Survey of Psychology Health Service Providers for White (87.8%), Black (2.6%), Asian (2.5%), and multiracial/multiethnic psychologists (1.7%; Hamp et al., 2016). The data are generally consistent with earlier findings of psychologist suicide (Phillips, 1999) that most psychologist suicide decedents are White and reveal slightly greater diversification within the field. CDC data from 2019 reveals rates in the general population of suicide

Table 4*Total Number of Suicides Per Year for Selected Health Professions in Reporting States: 2003–2018*

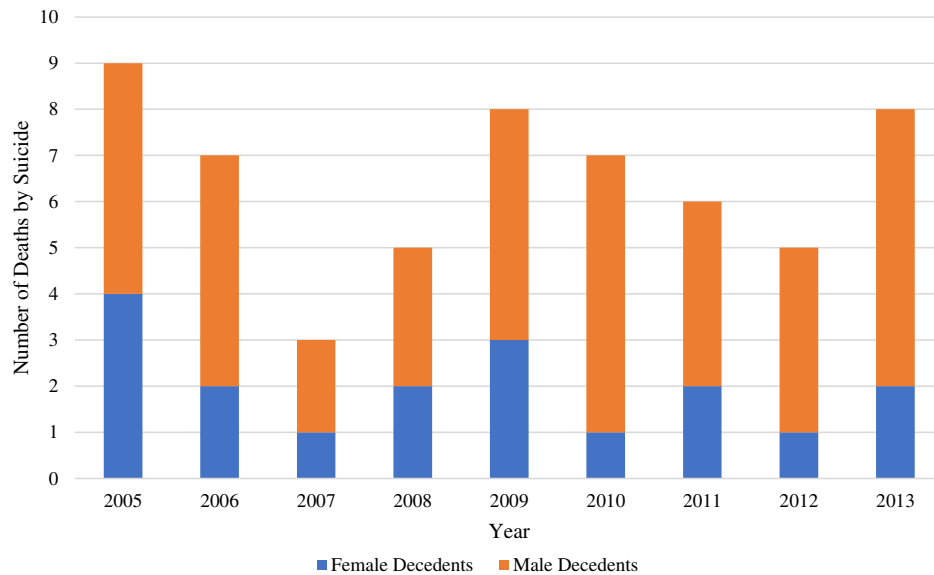
No. of states reporting	7	13	16	16	16	16	16	16	17	17	17	18	27	32	37	41	Total
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Dentist																	
Female	0	0	0	0	1	1	1	1	1	2	0	1	2	2	1	4	17
Male	8	9	10	15	11	8	11	9	10	10	12	16	16	25	28	25	223
Total	8	9	10	15	12	9	12	10	11	12	12	17	18	27	29	29	240
Advanced practice registered nurse																	
Female	1	0	2	1	0	2	1	1	3	6	1	9	8	5	10	15	65
Male	0	2	0	1	0	1	3	4	1	0	0	4	3	7	7	4	37
Total	1	2	2	2	0	3	4	5	4	6	1	13	11	12	17	19	102
Nurse																	
Female	29	55	72	87	77	90	82	90	110	132	129	147	185	232	268	295	2080
Male	8	7	17	18	15	11	11	22	24	21	28	38	45	64	60	63	452
Total	37	62	89	105	92	101	93	112	134	153	157	185	230	296	328	358	2,532
Pharmacist																	
Female	2	1	1	1	2	1	2	4	4	5	6	5	8	7	10	10	69
Male	2	9	3	9	11	10	13	6	11	9	15	9	16	21	25	33	202
Total	4	10	4	10	13	11	15	10	15	14	21	14	24	28	35	43	271
Physician assistant																	
Female	0	2	1	1	2	2	2	0	1	1	0	1	0	2	2	2	19
Male	0	1	3	1	3	2	4	2	4	5	0	4	5	1	6	4	45
Total	0	3	4	2	5	4	6	2	5	6	0	5	5	3	8	6	64
Nonpsychiatric physician																	
Female	1	4	3	3	3	3	2	4	10	5	7	4	6	14	14	11	94
Male	19	19	23	15	25	26	27	29	39	33	36	33	62	60	74	90	610
Total	20	23	26	18	28	29	29	33	49	38	43	37	68	74	88	101	704
Psychiatric physician																	
Female	0	0	0	0	0	0	1	0	2	0	3	1	0	0	3	2	12
Male	2	0	0	3	1	1	5	3	1	1	1	1	8	6	3	9	45
Total	2	0	0	3	1	1	6	3	3	1	4	2	8	6	6	11	57
Psychologist																	
Female	1	1	4	2	1	2	3	1	2	1	3	2	8	3	8	16	58
Male	6	2	5	5	2	3	5	6	5	4	7	7	7	10	9	18	101
Total	7	3	9	7	3	5	8	7	7	5	10	9	15	13	17	34	159
Social worker																	
Female	5	10	13	12	11	10	16	16	16	21	10	25	24	36	38	42	305
Male	0	3	6	5	12	10	7	6	4	8	11	11	12	20	39	30	184
Total	5	13	19	17	23	20	23	22	20	29	21	36	36	56	77	72	489
Veterinarian																	
Female	0	1	2	1	1	1	2	1	0	4	2	1	2	5	3	4	30
Male	2	2	2	2	0	5	6	4	3	6	7	6	7	11	11	11	85
Total	2	3	4	3	1	6	8	5	3	10	9	7	9	16	14	15	115
All groups																	
Female	39	74	98	108	98	112	112	118	149	177	161	196	243	306	357	401	2,749
Male	47	54	69	74	80	77	92	91	102	97	117	129	181	225	262	287	1,984
Total	86	128	167	182	178	189	204	209	251	274	278	325	424	531	619	688	4,733

Note. The advanced practice registered nurse category includes nurse practitioners, clinical nurse specialists, nurse midwives, and nurse anesthetists. The nonpsychiatric physician category includes physicians and surgeons. The psychiatric physician category includes psychiatrists and psychoanalysts.

per 100,000 are greatest in Whites (29.8 male, 8 female), followed by Blacks (12.4 male, 2.9 female), Asians (11.2 male, 4.0 female), and Hispanics (11.3 male, 3.0 female; NIMH, 2021). There were no cases of Hispanic psychologist suicide in this sample, which is generally consistent with the relatively lower numbers of suicides reported for Hispanics by the CDC. The relatively small numbers of suicides within subgroups limit the certainty of inferences that can be drawn about the association of ethnicity, and potentially other demographics, and suicide incidence. As the demographic composition of the field diversifies, the durability of the present findings for subgroups remains to be seen.

Sex and age played roles in the rates of psychologist suicide. The age of the sample was similar to Phillips's (1999) earlier report. Almost twice as many male psychologists ($n = 101$) died by suicide than female psychologists ($n = 58$). This could reflect the societal trend of more males than females dying by suicide (NIMH, 2021). By 2002, APA had more female than male members, so this is not due to there being more men in the field at the beginning of the NVDRS (APA, Center for Workforce Studies, 2003). The degree to which disproportionate male psychologist suicides merely mirrors the trends in the general population, or whether it reflects any unique risk associated with being a male psychologist is not known.

Figure 2
Longitudinal Psychologist Death by Suicide in Subset of 16 States: 2005–2013



Note. The 16 states are as follows: Alaska, Colorado, Georgia, Kentucky, Massachusetts, Maryland, New Jersey, New Mexico, North Carolina, Oklahoma, Oregon, Rhode Island, South Carolina, Utah, Virginia, and Wisconsin. The time frame 2005–2013 was chosen instead of 2003–2018 because there was a relatively constant number of states (16) participating during this time frame. Ohio began reporting in 2011 but it was not included in this figure so as to maintain consistency with the original 16 states reporting prior to 2011. See the online article for the color version of this figure.

The trend for more male than female suicide deaths was also true for most of the other selected health occupations. The exceptions were nurses, advanced practice registered nurses, and social workers. This is likely attributable to the higher proportions of females in these professions (National Council of State Boards of Nursing, n.d.; Salsberg et al., 2017).

The age for male and female psychologist suicide decedents ranged from the 20s to over 70, with most being over 50. Females were more likely than males to be younger than 50. This may reflect, in part, the upsurge of women in the psychologist workforce in recent decades. In 1970, women constituted about 20% of Psychology PhD recipients. By 2005, over 70% of PhD psychologists entering the field were women (Cynkar, 2007). As relatively more women have entered the psychologist workforce in recent years, the average age for women psychologists may skew younger relative to men in the field and likely will affect the epidemiology of psychologist suicide.

Sex differences in psychologist suicides reflect national suicide statistics generally of greater incidence of men relative to women (Suicide Prevention Resource Center, 2021) and of differences in suicide method. The most common suicide methods for male psychologists were in order, gunshot, asphyxia, and overdose contrasting with overdose, asphyxia and firearm by women. This is consistent with National Center for Injury Prevention and Control (2015) findings of sex differences in suicide attempts: males tend to

choose more certain, violent methods like firearms; females choose lower risk, more potentially rescuable methods like drug overdose. Males' choice of more lethal methods likely contributes to the relative preponderance of male suicides in psychology and possibly other health professions.

Sex differences also were seen in terms of history of earlier suicidal thoughts and attempts. Female psychologists who died by suicide were more likely than males to have had histories of suicidal ideation and attempts. A similar phenomenon is seen in the general U.S. population, where women more commonly attempt suicide, but men more frequently die by suicide (National Center for Injury Prevention and Control, 2015). Because women use less lethal methods, fewer of their attempts result in death. Conversely, even though men make fewer attempts, because they use more lethal means, they have higher likelihood of dying. NCHA (Petrone & Curtin, 2020) data reveal that women's rates of firearm-related suicide have been increasing in both rural and urban areas and that firearms are now the leading cause of suicide death in rural women. This trend could portend increasing suicide rates for women in psychology and other health professions.

Over half the psychologists whose suicides were captured by the NVDRS were identified as having mental health problems. The most common diagnoses were depression or dysthymia (42.8%) and anxiety (11.9%) reflecting the critical association between depression and suicide

Table 5
Prorated Suicides for Selected Health Care Professions in 2018

Professional group	Suicides ^b	Rank of suicides	Extrapolated number of suicides ^c	BLS estimate of professionals 2019	Rank of BLS estimated number of professionals	Suicide rate within profession (%) ^d	Rank of suicide rate within profession
Dentist	29	6	42	151,600	7	.027	3
Advanced practice registered nurse ^a	19	7	28	263,400	5	.011	9
Nurse	358	1	518	3,096,700	1	.016	7
Pharmacist	43	4	62	321,700	4	.019	6
Physician assistant	6	10	9	125,500	8	.007	10
Nonpsychiatric physician	101	2	146	752,400	2	.028	2
Psychiatric physician	11	9	16	25,530	10	.062	1
Psychologist	34	5	49	192,300	6	.025	4
Social worker	72	3	104	713,200	3	.015	8
Veterinarian	15	8	22	89,200	9	.024	5
All groups	688		996	5,731,530		.018	

Note. BLS = U.S. Bureau of Labor Statistics.

^aThe advanced practice registered nurse category includes nurse practitioners, clinical nurse specialists, nurse midwives, and nurse anesthetists. The nonpsychiatric physician category includes physicians and surgeons. The psychiatric physician category includes psychiatrists and psychoanalysts. ^bThis was based on 41 states that accounted for 69% of the U.S. population. ^cCalculated by dividing number of suicides by .69. Note that this assumes that the overall rate of suicides in the nine states for which data were not available is the same as those 41 for which it was. ^dCalculated as extrapolated estimate of suicides/BLS estimate professionals \times 100.

(Arsenault-Lapierre et al., 2004; Borges et al., 2006; Cheng et al., 2000). Jenkins and Singh (2000) posited a pathway linking depression to suicide: Factors that cause depression (e.g., chronic stress and lack of social support) can generate depressive thoughts and suicidal ideation. Coupling these with access to means of suicide (e.g., weapons, drugs) can ultimately result in suicide. Of the 50 males for whom mental health problems were identified, 36 (72%) were in treatment when they died. Among the 37 female psychologist decedents with identified mental health problems, 33 (89%) were being treated at the time of suicide. This is consistent with general trends for females to be more open to seeking mental health treatment. Possible contributing factors are males may be hesitant to seek help, be less in touch with their emotions, seek to deny problems, disavow vulnerabilities, or cleave to sex roles and expectations that increase risk (Winerman, 2005).

Suicide Prevention and Treatment

Several factors may be linked to rates of suicide, suicidal ideation, and depression among psychologists. Job strain can be associated with distress (Sherman & Thelen, 1998) and increased prevalence of depression, a workplace characteristic that psychologists and other health professionals experience (Mausner-Dorsch & Eaton, 2000). Working conditions involving high job responsibility and stressful interactions with difficult patients (Robiner & Petrik, 2017) may be associated with increased suicide risk (Schneider et al., 2011). Physical and emotional isolation as well as challenging patient behaviors are occupational hazards for therapists (Rokach & Boulazreg, 2020). In addition to work-related stressors, myriad life events, including personal (e.g., health, substance use) and social (e.g., relationship) factors can be associated with distress and impairment (Sherman & Thelen, 1998).

Psychologists and other health professionals may also be at risk for burnout (Maslach & Leiter, 2016), a syndromal occupational hazard that appears to be related to depression (Schonfeld & Bianchi, 2016), but whose relationship to suicide per se is not fully understood. Burnout may lead to diverse negative outcomes like lower quality patient care, increased risk of mental health problems, as well as compounded suicide risk (Morse et al., 2012). Many (59%) psychologist respondents to the 2009 APA Colleague Assistance and Wellness Survey reported that burnout or compassion fatigue interfered with their functioning as psychologists (Bridgeman & Galper, 2010). High workload and time pressure contributing to burnout and emotional exhaustion have been described in psychologists (McCormack et al., 2018). Among psychologists in academic health centers, variable burnout levels have been reported ranging from no symptoms (8%) to being occasionally stressed (59%), "symptoms won't go away" (12%), definitely burning out (18%), or being completely burned out (3%; Williams et al., 2020).

For physicians, the interpersonal theory of suicide (Chu et al., 2017) may enhance understanding of suicide risk, as perceived burdensomeness and thwarted belongingness have been shown to predict suicidal ideation and behavior (Fink-Miller, 2015). Similarly, it may be relevant for understanding psychologists' risk as features of some psychological practice (e.g., isolation, exposure to human suffering, challenging interactions, or patient death by suicide) may contribute to self-perceived burdensomeness and thwarted belongingness potentially affecting suicide risk.

Recent research has revealed limitations in theory-driven suicide prediction (e.g., Schafer et al., 2021). A meta-analysis of 365 studies spanning the past 50 years found that suicide risk factors predicted suicidal thought and behaviors only slightly better than chance (Franklin et al., 2017). Machine learning calculating risk algorithms has been examined as an alternative to suicide prediction based on risk factors (Franklin et al., 2017). Such findings should be considered when attempting to understand health professionals' suicide risk. Machine learning may yield more nuanced understanding of factors contributing to health professionals' suicide.

Diverse barriers may prevent psychologists from seeking help when needed. According to the 2009 APA Colleague Assistance and Wellness Survey, lack of time (61%), denial or minimization of mental health issues (43%), and confidentiality concerns (43%) were barriers to psychologists seeking assistance or practicing self-care (Bridgeman & Galper, 2010). Even when signs may become visible, colleagues may hesitate to intervene due to concern that addressing it or attempting to intervene could yield negative consequences like defensiveness, strained collegial relationships, or rejection. Such barriers may limit awareness of these matters or how to address impairment in themselves or in psychologist colleagues.

Greater education or dissemination of resources addressing distress, impairment, or suicide risk in colleagues, potentially may help psychologists become more capable of addressing such matters when they arise. For example, training and discussion of these issues could lead to a higher index of suspicion and greater sensitivity in detecting concerning signs and symptoms and result in earlier, potentially more effective preventive interventions. Kleespies et al. (2011) offered recommendations for intervening with colleagues, such as starting conversations with impaired colleagues, sharing available resources, and seeking help from state psychological associations. Institutions' leadership or human resources may develop processes for addressing concerns including monitoring and facilitating referral and intervention.

Similarly, professional associations might play pivotal roles developing and publicizing mechanisms for addressing distressed/impaired psychologists such as APA's Advisory Committee on Colleague Assistance. Additional national, regional, and institutional suicide prevention efforts seem warranted to elucidate, target, and mitigate factors that affect suicide risk in psychologists and other health professionals.

For example, the development of a National Psychologist Suicide Awareness Day, or a more broadly interprofessional National Health Professional Suicide Awareness Day, may draw recurring attention to the need to prevent suicides and to address the burnout, mental health, systems, and other phenomena contributing to them.

Limitations and Strengths of This Study

Several limitations of this study may affect our findings. The reported data likely underestimate the true incidence of suicide among psychologists as well as for other professions. It is possible that in some cases, the occupation of a psychologist was not known and therefore not reported. Confusion about differences among mental health professions may have led to erroneous occupational codes for some decedents. Suicides also may be underreported due to misclassifications in the manner of death. When classifying the manner of death to estimate incidence, cases are typically underreported due to instances of undetermined classifications, missing information, or stigma associated with suicide (Bakst et al., 2016). In addition, true incidence rates could not be calculated due to limited precision of estimates of the psychologist workforce (Markit, 2018).

The limited and variable number of states participating in the NVDRS throughout this reporting period also constrained this analysis. The number of states reporting to the NVDRS differed as the database grew. Gaps in reporting preclude painting a complete national picture of suicide incidence and confound conclusions that can be drawn about longitudinal trends. Following this reporting period, the NVDRS expanded to include information from all 50 states. As that data becomes available, it will allow for future analyses to be based on more comprehensive data that will be more conducive to cross-sectional and longitudinal study of health professionals' violent deaths.

A third limitation was the variation in the completeness of information regarding decedents' personal information that was entered into the NVDRS database. For example, some variables (e.g., suspected alcohol use) included cases coded as unknown or unavailable, leading to uncertainty in some cases.

Despite these inherent limitations, this preliminary study had multiple strengths. It provides an overview of the largest sample of psychologist suicides to date. The study reports on the NVDRS, a nationwide database operated in partnership with states' health departments. It serves as an important baseline assessment, allowing comparison in future years as the database improves. Presumably, future NVDRS data will become more comprehensive and precise in revealing insights into suicide and related trends.

The study is evidence based, providing data spanning multiple years about suicide deaths including relevant variables (e.g., demographics, mental illness, method of suicide) that may influence suicide deaths. Despite psychologists' skills and knowledge about mental health, contributing factors, and

suicide, the data confirm that some psychologists die by suicide every year. By presenting data about the who, how, when, and where of suicides within the psychologist workforce, it acknowledges that suicide is both an historic and ongoing problem affecting psychologists and reveals associated factors. The data offer insights into the need for more effectively addressing suicide risk (e.g., mental illness, firearm availability, drugs) among psychologists that ultimately may inform designing and targeting strategies for preventing future suicides.

Future Directions

The role of suicide in psychologists and other health professionals is a pressing issue warranting future research and the development of more effective prevention approaches. Identifying the scope of the problem hopefully galvanizes professional and societal action toward educating about suicide risk and developing policies and disseminating resources to enhance detection of heightened risk and shore up processes and prevention strategies for intervening with at-risk psychologists and other health professionals. Periodic assessments of suicide in psychologists and other health professionals using the NVDRS will allow for clarification of the scope and trends in health professional suicide as well as evaluation of the effectiveness of intervention strategies. Future research could also examine how factors contributing to suicide of psychologists and other health professionals are understood in the context of predictive models (Belsher et al., 2019). Future studies could also address developmental aspects of career trajectories such as expanding responsibilities or shrinking supports, as well as the impact of non-work-related factors (e.g., growing likelihood of developing serious health problems associated with age), that might affect suicidality.

Another direction for future research could be to examine suicide data on a state-by-state basis to determine how states compare. The NVDRS provides state-specific data that warrants more granular analysis. This could be useful in determining unique stressors in states and regions that may increase the risk of suicides among psychologists and other health professions. Such data potentially would permit more precisely targeted education, prevention, and intervention efforts augmenting national efforts described earlier.

Another potentially fruitful investigation is the impact of the COVID-19 pandemic on health professional suicide. As newer NVDRS data become available, analyses could be conducted to compare suicide incidence for the years of the pandemic with those immediately preceding it to determine whether and how the pandemic impacted health professional suicide. If, as feared “the dual pandemic” of suicide and COVID-19 (Banerjee et al., 2021) adds to the mortality associated with COVID-19, it is urgent that potential increases in suicide be detected and that strategies be implemented without delay.

Concluding Remarks

Distress and impairment in psychologists and other health professionals are long-recognized problems. These data confirm the notable rates of death by suicide in psychologists though likely underestimates the true scale of the problem. The numbers speak to the importance of increasing understanding of the distress, impairment, and suicide risk of health professionals and developing mechanisms to attenuate suicide risk and mitigate the factors that contribute to it.

Each of the souls belying the numbers reported should be remembered for their humanity and for the nobility of their purpose, for the many roles they served, important service they provided, contributions they made, and challenging situations they faced. Their heartbreaking loss is experienced at personal, familial, professional, collegial, institutional, organizational, and societal levels. For example, the suicide of a psychologist may be traumatic for patients, resulting in stress, grief, and other emotional responses; it may decrease others' willingness to seek psychological services or increase willingness to perceive suicide as an option for resolving personal problems (Reynolds et al., 1997).

One can only imagine what more good each of these trained professionals might have done, and what richer legacy they might have left, if their premature deaths could have been averted. The magnitude of these losses dictates that sustaining and expanding programs such as the APA Advisory Committee on Colleague Assistance and similar programs in other health professions, as well as institutional wellness initiatives, must be high priorities backed up by adequate resources.

At the most basic level, the suicide of health professionals highlights the importance of being alert, attending to, and caring for colleagues whose distress may place them in greater jeopardy than may be apparent. The reality of health professional suicide underscores the necessity for health professionals, and the institutions in which they work, placing a premium on their work life, personal life, wellness and self-care, and of developing policies and enacting measures to achieve these as part of the quadruple aim of health reform (Bodenheimer & Sinsky, 2014).

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