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## Research report

## Is suicide an option?: The impact of disability on suicide acceptability in the context of depression, suicidality, and demographic factors

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## ABSTRACT

**Background:** Suicide is a major clinical and public health issue, especially in people with disabilities. However, research on the acceptability of suicide in people with disabilities has not directly compared the relative acceptability of suicidality in people with and without disabilities.

**Method:** An online sample of five hundred American adults read five pairs of vignettes about individuals who were experiencing suicidal ideation following a life stressor. Each pair contained a disability and no-disability condition; a sixth pair of vignettes discussed suicidal ideation in an elderly individual and contained physical and cognitive disability conditions. Participants completed questions regarding the relative acceptability of suicidality for each vignette as well as demographic items and measures of suicidality, depressive symptoms, and attitude towards disability.

**Results:** In all vignette five pairs, suicidality was seen as significantly more acceptable in the disability condition; this was true even when the participants themselves had disabilities or friends or family members with disabilities. Suicidality, depressive symptomology, and more negative attitudes towards disability predicted greater acceptability in both conditions; no factors predicted greater differences between the two conditions.

**Limitations:** The vignettes in this study focused primarily on individuals in their 20s and most did not compare two disabling conditions.

**Conclusions:** The greater social acceptability of suicidality in people with disabilities may be taken by individuals with disabilities who are suicidal as implicit permission to end their lives. The potential impact of such social influences should be assessed and addressed by clinicians and suicide prevention advocates.

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## 1. Introduction

Suicide is the 10th leading cause of death in the United States, accounting for over 41,149 deaths in 2013 (Centers for Disease Control and Prevention, n. d.). Further, increased rates of suicidality among individuals with diverse disabilities have been well documented in the literature (e.g., Pompili et al., 2012; Giannini et al., 2010; Wetzel et al., 2011). However, most of the literature regarding acceptability of suicide in people with disabilities has focused on physician-assisted suicide among people with disabilities and terminal illnesses (e.g., see Achille and Ogloff, 2003; Emanuel et al., 1996). Some people feel that the availability of

assisted suicide provides people greater autonomy over their bodies, while others feel that it devalues life (Fadem et al., 2003; Krahn, 2010). The topic is perhaps particularly divisive among people with disabilities, with some groups strongly and vocally opposed (Amudsen and Tairia, 2005; Krahn, 2010), and other groups showing a general approval of the option (see Achille and Ogloff, 2003; Emanuel et al., 1996).

Individual differences, such as religiosity and depression, may affect attitudes towards assisted suicide. For example, research has demonstrated that depression was associated with a greater likelihood of endorsing physician-assisted suicide among people with ALS, while involvement in weekly religious services predicted a lower likelihood of endorsement (Achille and Ogloff, 2003). Similarly, Fishbain et al. (2012) found that, among people with chronic pain, past and current suicidality predicted a greater preference for death over the experience of life with disability. Emanuel et al. (1996) also found that depression predicted greater interest in

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assisted suicide among cancer patients, although religiosity was associated with lower interest. This is similar to studies in the general population, which have consistently found that religiosity and religious involvement is a protective factor against general suicide acceptability (Neeleman et al., 1998; Stack, 1998a,b; Stack and Kposowa, 2011). Conversely, depression (Gibb et al., 2006; Zhang et al., 2014) and suicidality (Gibb et al., 2006; Li et al., 2009; Kleiman, 2015) have been shown to be risk factors for greater general suicide acceptability. Higher education has also been frequently found to be a risk factor for greater general suicide acceptability in the general population (e.g., Stack 1998a,b; Zhang et al., 2014).

Outside of the debate over assisted suicide specifically, a small body of literature has examined attitudes toward suicide among people in general. In a sample of 80 undergraduate students, Droogas et al. (1982) found that physical deterioration and pain were viewed as significantly more acceptable reason to commit suicide than were mental deterioration or pain. Similarly, Deluty (1989) surveyed 780 undergraduate students and found that suicide was more acceptable if the hypothetical suicidal person had terminal cancer than depression, with non-terminal chronic pain being more acceptable than depression and less acceptable than terminal cancer. Additionally, suicide was seen as more acceptable in and by men and in elderly (versus middle-aged) hypothetical individuals.

## 2. Purpose of the present study

Although studies have examined whether terminal illness or physical deterioration affect an individual's view of suicide acceptability, this research has yet to examine the impact of disability status directly. Thus, it is unclear how the presence of a significant but non-terminal disability affects suicide acceptability. Second, the existent studies are rather old, and it is very possible that attitudes toward suicide acceptability in individuals with disabilities and chronic health conditions has changed over the past 20–30 years. Third, the current empirical literature draws exclusively from undergraduate populations and may not be generalizable to the broader population. Fourth, these studies only examined non-disabled people's attitudes toward suicide acceptability in hypothetical people with disabilities. Thus, it is unclear if or how the relative acceptability of suicide for people with disabilities differs from people without disabilities. Therefore, we sought to expand the literature by answering the following questions using an online, non-clinical sample of 500 American adults:

1. How do attitudes toward suicidal ideation differ in vignettes where the hypothetical suicidal person does and does not have a disability?

**H<sub>1</sub>.** : We predicted that suicidal ideation would be seen as more acceptable in vignettes where the person was identified as having a disability, as compared to similar vignettes where disability status was not mentioned.

2. What factors predict a lower difference in the acceptability of suicidal ideation in hypothetical people with versus without disabilities?

**H<sub>2</sub>.** : We predicted that more positive attitudes towards disability, personal experience with disability, and having friends and family

members with disabilities would result in smaller differences in acceptability between the disability and no-disability conditions.

3. What factors predict greater acceptability of suicidal ideation in hypothetical people with versus disabilities?

**H<sub>3</sub>.** : We predicted that suicidality, depressive symptoms, less frequent religious participation, and more negative attitude toward disability would predict greater acceptability of suicidal ideation in both the disability and no-disability conditions.

## 3. Method

### 3.1. Recruitment and procedures

Five hundred participants completed an online survey concerning personal attitudes about acceptability of suicide by people with and without disabilities. Participants were recruited from Amazon Mechanical Turk (MTurk), an online participant recruitment system that produces valid data that is generally demographically representative of the general population (Buhrmester et al., 2011; Shapiro et al., 2013), with roughly equal male–female gender distribution and a mean age in the mid-30s. To participate, MTurk users must be 18 or older; participation was also restricted to those currently living in the United States. After being recruited via MTurk, participants completed the questionnaires on via Qualtrics online survey software (Qualtrics, 2015). The informed consent discussed attitudes towards suicide and the presence of suicidality but did not specifically mention disability as an area of key interest. After completing the survey, participants were provided with information on national emergency, crisis, and suicide hotlines and were provided with a code that they could enter to receive compensation of \$0.25 from MTurk. The survey itself was hosted on a secure server, and participants' responses were collected completely anonymously and could not be linked to their MTurk accounts.

### 3.2. Participants

Five hundred participants completed the survey. A majority were female (60.4%;  $n=302$ ) and Caucasian (74.4%;  $n=372$ ), with a mean age of 35.92 years ( $SD=13.85$ , range: 18–75). Participants were fairly well-educated, with two-fifths of respondents ( $n=203$ ; 40.6%) having earned a bachelor's degree or higher and an additional 43.0% ( $n=215$ ) having completed an associate's degree or some college. Most reported working full-time ( $n=178$ ; 35.7%) or part-time ( $n=75$ ; 15.0%); about a fifth were full-time students ( $n=94$ ; 18.8%). A majority of participants reported being married ( $n=153$ ; 30.6%) or in a committed relationship ( $n=105$ ; 21.0%), but over a third ( $n=183$ ; 36.6%) were single.

About two-fifths ( $n=211$ ; 42.2%) of the sample identified as adherents to either Protestant, Roman Catholic, or evangelical Christianity. Over a quarter ( $n=140$ ; 28.0%) identified as agnostic or atheist, with the remainder of the sample endorsing a wide variety of religious and spiritual beliefs including Judaism, Islam, Buddhism, and Hinduism. Just over half ( $n=251$ ; 51.8%) reported attending religious services.

Ninety-two of the 485 participants (19.0%) who responded to the disability question endorsed having one or more disabilities. The most common types of disabilities reported were psychiatric ( $n=25$ ; 27.2%), physical ( $n=23$ ; 25.0%), and chronic health

**Table 1**  
Demographics.

Variable	Percent (n) of sample (n=500)
Sex	
Male	39.6% (198)
Female	60.4% (292)
Ethnicity	
White	74.4% (372)
Black/African-American	10.4% (52)
Hispanic/Latino/a	4.6% (23)
Asian/Pacific Islander	7.4% (37)
Native American	0%
Other	2.0% (10)
Prefer not to disclose	1.2% (6)
Disability (n=92)*	
Psychiatric	27.2% (25)
Physical	24.0% (23)
Chronic health condition	22.9% (22)
Visual impairment	3.3% (3)
Hearing impairment	1.1% (1)
Speech impairment	3.3% (3)
Learning disability	4.3% (4)
Autism	2.2% (2)
Did not state type of disability	13.0% (12)
Religious affiliation	
Protestant Christianity	23.0% (115)
Roman Catholic	13.6% (68)
Evangelical Christian	5.6% (28)
Jewish	2.2% (11)
Muslim	1.0% (5)
Hindu	.8% (4)
Buddhist	2.2% (11)
Atheist/agnostic	28.0% (140)
Other	23.6% (118)
Frequency of participation in religious services	
Never	48.2% (241)
Once a week or more	16.2% (81)
Once every two weeks	5.8% (29)
Once a month	8.2% (42)
Once every sixth months	17.5% (88)
Other/not stated	4.0% (20)
Employment status	
Working full-time	36.3% (176)
Working part-time	15.0% (75)
Homemaker	6.8% (34)
Student	18.8% (94)
Unemployed	14.0% (70)
Retired	4.0% (20)
On disability	5.8% (29)
Marital status	
Single	35.6% (178)
In a committed relationship	21.0% (105)
Married	30.6% (153)
Separated	1.8% (9)
Divorced	8.2% (41)
Widowed	1.8% (9)
Education	
Grade school	.2% (1)
Some high school	1.0% (5)
GED	3.6% (18)
High school diploma	11.0% (55)
Some college	32.0% (156)
Associate's degree	11.6% (58)
Bachelor's degree	28.8% (144)
Graduate degree	11.8% (59)

Notes.

\* Participants could indicate multiple disabilities.

conditions ( $n=22$ ; 24.0%). Over a third of 489 respondents who answered the question ( $n=172$ ; 35.2%) reported having a friend with a disability or disabilities. Similarly, just over two-fifths ( $n=198$ ; 40.7%) of the 487 respondents who answered the relevant item reported having a family member with a disability. More detail on participant demographics can be seen in [Table 1](#).

### 3.3. Measures

The order of the measures in the survey was as follows: (1) attitude towards disability, (2) suicide acceptability, (3) depressive symptoms, (4) suicidality, and (5) demographics and suicide history. This order was chosen so that more emotionally-laden topics, such as depression, suicidality, and suicide history, were asked later in the survey.

#### 3.3.1. Demographics and suicide history

Participants were asked to complete a number of demographic items related to their gender, age race/ethnicity education, employment status, income, religious affiliation, and frequency of attendance at religious events and services. They were also asked about their personal disability status and if they had any close friends or family members with disabilities. Finally, participants were asked if they had a friend or family member who attempted or died by suicide, and if they themselves had ever attempted suicide and if so, how many times.

#### 3.3.2. Attitudes toward suicide

Historically, research on suicide acceptability has included a one-item assessment of "Is suicide never, sometimes, or always justified?" (e.g., [Stack, 1998a,b](#)), a two-item assessment of "I think it's okay to end your life if you're tired of living" and "I think it's okay to end your life if you don't see any reason to keep on living" ([Kleiman, 2015](#)), or a summed score of four dichotomous items that ask if suicide is acceptable or not in certain situations (terminal illness, unemployment, etc; [Stack and Kposowa, 2011](#)). Although such measures can be useful for determining overall suicide acceptability, they are also very broad and thus may obscure situational factors that may influence the relative acceptability of suicide in a given circumstance. Thus, we developed a vignette-based measure to assess attitudes toward suicidality in people with and without disabilities. The measure, located in [Appendix A](#), consists of five pairs of vignettes. Each vignette describes a hypothetical situation of a person experiencing suicidal ideation. In each pair of vignettes, the gender, age, and life stressors of the person (e.g., break-up of a romantic relationship, unemployment, academic difficulties) is kept consistent, but the minor details of the situation are changed (e.g., difficulty with law school admission v. medical school admission). In one vignette, the individual is stated to have a disability while in the other vignette, disability status is not stated. When disability is stated, the limitations of the disability are succinctly described (e.g., "he continues to have trouble remembering things and needs his parents' help with some everyday activities, like cooking, so it would be difficult for him to live on his own"; "Stan was recently diagnosed with Parkinson's disease, and the resulting tremor has made it very difficult for him to do even basic chores around the house."). Descriptions of the vignettes are available in [Table 2](#). Vignettes are available in [Appendix A](#), and a sample pair of vignettes is as follows:

**Table 2**  
Vignette descriptions.

Vignette pair	Age	Gender	Life stressor	Disability
Pair 1	Early twenties	Male	Loss of independence	Traumatic brain injury
Pair 2	Early twenties	Female	Career issues/academic difficulties	Congenital blindness
Pair 3	Middle age (late thirties/early forties)	Female	Social isolation/lack of meaning	Chronic health condition
Pair 4	Mid-twenties	Male	Unemployment	Bipolar disorder
Pair 5	Late twenties	Male	Romantic break-up	Spinal cord injury

### 3.3.3. Disability condition

Maddy is a 22 year-old college student who worked hard to prepare for medical school applications. She has been blind since a young age and has always wanted to be a doctor. Recently, Maddy was told that because she is blind, medical school will probably not be an option for her. She has looked into other majors and careers, but cannot think of one that she is interested in where her blindness would not be an issue. Because of this, Maddy has felt very hopeless and sad. She has begun to think of killing herself, as she can't do anything due to her disability.

### 3.3.4. No-disability condition

Jill is a 22 year-old college student. She has wanted to be a lawyer since she was a child and has worked hard to achieve that goal. She recently took the LSAT, a law school admissions test, and received a poor score. Her score will make it very difficult to get in the law school. Because Jill studied hard for the test, she does not feel like she can raise her score and cannot find any other careers that she is interested in pursuing. Because of this, she feels hopeless and has begun to think of killing herself, as she feels like she can no longer pursue a good career.

Participants answered the following questions for each vignette on a 5-point Likert-type scale, from 1 (strongly disagree) to 5 (strongly agree): (1) I can understand why [individual] would want to kill himself [herself]; (2) I think [individual] should have the right to kill himself [herself]; (3) [Individual]'s situation is very poor; (4) [Individual] has a lot of to live for (reverse-coded); and (5) If I were in [individual]'s situation, I would probably feel the same way. Scores were summed for each vignette, with a possible range of 5–25 per vignette. In addition, total scores for both the disability and no-disability conditions were calculated by summing participants' scores for each of the relevant vignettes.

Internal consistency was generally acceptable on all vignettes as well as on the total scores. Cronbach's alpha on each vignette ranged from .685 to .754, with only one vignette below .700. Internal consistency for all suicide acceptability items in the no-disability condition was .931, and internal consistency for all suicide acceptability items in the disability condition was .925, placing both in the excellent range (George and Mallery, 2003).

A sixth pair of vignettes, which was not included in the total scores, described two different disability scenarios—a primarily physical disability (Parkinson's disease) and a primarily cognitive disability (Alzheimer's disease). In both scenarios, the person was a man in his early- to mid-eighties who disability forced him to retire from his job. These vignettes were rated on the same items as the main five vignette pairs. Cronbach's alpha was .790 for the physical vignette and .814 for the cognitive vignette.

### 3.3.5. "Right to kill oneself" item

Although the acceptable internal consistency for the five-item acceptability scales tentatively indicates that they measure a single construct, it is also possible that the items that assess, for example, empathy for the individual ("If I was in [person's] situation, I would feel the same") or judgement of the severity of the situation ("[Person's] situation is very poor.") may evoke different responses than asking directly about the person's perceived right to commit

suicide. Therefore, in addition to conducting analyses comparing five-item suicide acceptability scores within vignette pairs and by mean acceptability difference by condition (disability/no disability), we also repeated these analyses using only the mean scores for the "right to kill oneself" item from each vignette. Both sets of results are reported. The summed right to kill oneself items had excellent internal consistency for the disability (.963) and no-disability (.979).

### 3.3.6. Mean acceptability difference

Mean suicide acceptability difference was calculated by subtracting the total suicide acceptability score in the no-disability condition from the total suicide acceptability score in the disability condition for each vignette pair and then averaging the differences across all five disability/no-disability vignette pairs. Thus, a positive score means that the person generally rated suicide as more acceptable when disability was present whereas a negative score indicates that the person rated suicide as more acceptable when not disability was present. Mean acceptability difference for the isolated "right to kill oneself" item was calculated in the same manner. By calculating mean acceptability difference in this manner, we were able to analyze intra-participant differences in acceptability between the disability and no-disability conditions. We were also able to analyze factors that influenced intra-participant differences in acceptability.

### 3.3.7. Attitude towards disability

Attitude towards disability was assessed using the Multi-dimensional Attitudes Scale (MAS; Findler et al., 2007). The MAS measures responses to a hypothetical social encounter with a person with a physical disability. Participants read a short vignette in which a hypothetical person meets an individual in a wheelchair who they do not know in a coffee shop. In the original MAS, the gender of the person in the vignette was matched to individual of the participant; however, in this study, the gender was consistently male for all participants. After reading the vignette, participants are asked to rate the likelihood of a variety of affective, cognitive, and behavioral responses on a 5-point Likert type scale, ranging from 1 (not at all) to 5 (very much). Items representing positive emotions, cognitions, and behaviors are reverse scored, so that lower scores represent more positive attitudes towards disability.

The affective, cognitive, and behavioral subscales are 16, 10, and 8 items, respectively, for a total of 34 items. Because the subscales have different numbers of items, an average for each subscale is calculated by summing the items for that subscale and then dividing by the number of items in the subscale. The three averages are then summed together to produce a total score. Scores on each subscale can range from 1 to 5, and total scores can range from 3 to 15.

For the 499 participants for whom complete MAS data was available, the mean scores on the affective, cognitive, and behavioral subscales, respectively, were as follows: 2.55 (SD=.657), 2.31 (SD=.637), and 2.27 (SD=.713). Mean scores for the total MAS were 7.13 (SD=1.53), with lower scores representing more positive attitudes towards disability. Cronbach's alpha was .887 for

**Table 3**  
Intra-pair correlations and mean suicide acceptability differences.

Vignette pair	Mean acceptability (disability)	Mean acceptability (no disability)	Correlation*	Paired sample t-test t value***	Mean acceptability difference
Pair 1	14.28 (3.70)	10.74 (4.03)	.571	22.07	3.54 (3.59)
Pair 2	12.48 (4.13)	9.55 (3.64)	.690	21.18	2.93 (3.09)
Pair 3	13.85 (4.21)	10.25 (4.03)	.549	20.47	3.60 (3.93)
Pair 4	13.27 (3.91)	10.25 (4.06)	.758	10.14	1.28 (2.81)
Pair 5	14.10 (4.26)	9.69 (3.78)	.516	24.48	4.41 (3.98)

\* All  $p$ -values are  $p < .001$ .

\*\* All  $df=499$ .

the affective subscale, .902 for the cognitive subscale, and .830 for the behavioral subscale. Cronbach's alpha for the total scale was .911.

### 3.3.8. Depressive symptoms

Depressive symptoms were assessed using the Center of Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20-item, self-report measure of depressive symptoms. The CES-D is scored on a four-point scale (0–3) with scores ranging from 0 to 60. A score of 16 is commonly used as the cutoff indicating clinically-significant depressive symptoms (Radloff, 1977). It has acceptable internal consistency for both the general ( $\alpha=.85$ ) and clinical ( $\alpha=.90$ ) populations (Radloff, 1977). It has been demonstrated to be a valid screening measure for detecting depressive symptoms (Weissman et al., 1977). Reliability was acceptable in our sample ( $\alpha=.790$ ).

### 3.3.9. Suicidality

Suicidality was assessed using the Suicidal Behaviors Questionnaire-Revised (SBQ-R; Osman et al., 2001). The SBQ-R, a revised version of the Suicidal Behaviors Questionnaire (Linehan, 1981), is a 4-item, self-report measure designed to assess levels of suicidal risk. The SBQ's four items are summed to create a score ranging from 3 to 18. The first item assesses past suicidal thoughts and suicide attempts, the second and third items inquire about past suicidal ideation and threats, and the fourth item assesses potential future suicidal behavior. It has acceptable internal consistency with an alpha of 0.88 in a clinical sample and 0.87 in a non-clinical sample (Osman, et al., 2001). A cutoff score of 7 may be used to determine clinically-significant levels of suicide risk (Osman, et al., 2001) in the general population. Because scores are non-normally distributed, they were logarithmically adjusted to better fit the assumptions of our statistical tests. The measure had acceptable reliability in our sample ( $\alpha=.792$ ).

## 4. Results

### 4.1. Suicide history and mental health

Fifteen percent of participants ( $n=76$ ) reported having attempted suicide in the past. The number of attempts reported ranged from one to seven, with most reporting one ( $n=35$ ) or two ( $n=21$ ) attempts. On the SBQ-R, more than one-third (38.2%) of participants reported scores that fell at or above the cut-off of 7, indicating clinically-significant risk for suicidal behavior. The mean score for the unadjusted total scores on the SBQ-R was 6.16 ( $SD=3.31$ ; range=3–18); for the logarithmically adjusted score the mean was 1.69 ( $SD=.51$ ). Of the 496 participants who responded to the question, two-fifths ( $n=201$ , 40.5%) reported having a friend or family member who had attempted or died by suicide.

The mean total score on the CES-D was 17.18 ( $SD=13.41$ ; range=0–57). Almost half of our participants (46.6%) scored at or

above the recommended cutoff of 16, suggesting that many participants in our sample may have been experiencing clinical levels of depressive symptomatology. This suggests that our sample, while demographically similar to general population in terms of age, race/ethnicity, and disability status, did report higher rates of depressive symptoms than would be expected in the general population; this aligns with previous research that indicates that MTurk samples may have higher rates of psychiatric symptoms than would be expected in the general population (Shapiro et al., 2013). In addition, the topic of the study—suicide—may have been more likely to attract participants with previous personal experience with suicide and depression. In order to account for this, we examined the effects of depressive symptomatology and suicide on acceptability scores. The sample also had a slight over-representation of females.

### 4.2. Presence of disability and suicide acceptability

#### 4.2.1. Overall acceptability score

We used paired sample  $t$ -tests to assess the impact of the presence of disability on suicide acceptability. The summed, cross-vignette scores for the five pairs of disability and non-disability vignettes were highly correlated ( $r=.768$ ;  $p < .001$ ), suggesting that both the disability and non-disability vignettes measured the same construct. Additionally, all five sets of disability/no disability vignette pairs were significantly correlated within the pairs (see Table 3 for correlations), indicating that the vignettes were comparable on factors other than the presence or absence of disability. For all five vignette pairs, the disability vignettes received significantly higher acceptability ratings than the non-disability vignettes (see Table 3 for a breakdown of the paired comparisons). The total acceptability score for all disability (mean=67.98;  $SD=17.36$ ) vignettes were significantly higher than that for all non-disability (mean=52.22;  $SD=17.37$ ) vignettes ( $t(499)=29.814$ ;  $p < .001$ ). Table 3 shows all the means and standard deviations, paired  $t$ -test results, and intra-pair correlations for each of the five vignette pairs.

The sixth vignette pair, which compared physical versus cognitive disability in an elderly individual, showed similar results. As with the other five vignette pairs, the acceptability scores for physical and cognitive vignettes were strongly correlated ( $r=.821$ ;  $p=.000$ ), suggesting that they were similar in other aspects. The mean acceptability for the cognitive vignette disability (16.15,  $SD=4.59$ ) was significantly higher ( $t(499)=4.93$ ,  $p < .001$ ) than for the physical disability vignette (15.56,  $SD=4.37$ ). The acceptability scores for both vignettes were similar or higher than the other disability vignettes.

The mean acceptability scores for all participants were calculated as described in the methods section. Thirty three (5.6%) participants had a negative score, 11 (2.2%) had a neutral score, and 456 (91.8%) had a positive score, indicating that, on the whole, the vast majority of participants viewed suicide as more acceptable when a disability was present than when it was not. The vignette pair with the highest mean acceptability difference was pair 5 (spinal cord injury—break-up), and the vignette pair with

**Table 4**  
Intra-pair correlations and “right to kill oneself” mean differences.

Vignette pair	Mean acceptability (disability)	Mean acceptability (no disability)	Correlation <sup>*</sup>	Paired sample <i>t</i> -test <i>t</i> value <sup>***</sup>	Mean acceptability difference
Pair 1	2.46 (1.26)	2.10 (1.30)	.826	10.54 <sup>*</sup>	.356 (.755)
Pair 2	2.19 (1.26)	2.03 (1.28)	.904	6.48 <sup>*</sup>	.162 (.559)
Pair 3	2.45 (1.31)	2.05 (1.29)	.765	9.95 <sup>*</sup>	.396 (.890)
Pair 4	2.23 (1.27)	2.13 (1.29)	.878	3.46 <sup>***</sup>	.098 (.633)
Pair 5	2.30 (1.28)	2.02 (1.26)	.844	12.27 <sup>*</sup>	.284 (.710)

<sup>\*</sup>  $p < .001$ .

<sup>\*\*</sup> All  $df = 499$ .

<sup>\*\*\*</sup> All  $df = 499$ .

the lowest mean acceptability difference was pair 4 (mental illness—unemployment). Mean acceptability differences for all five vignette pairs are listed in Table 2.

#### 4.2.2. “Right to kill self” item

In addition to examining the total acceptability scores for each vignette pair, we also examined the differences on the second item of the scale, “I think [individual] should have the right to kill himself [herself].” Because the other items on the scale may tap into general understanding or sympathy for the person's suicidal thoughts without giving permission for suicide, we decided to isolate this particular item on order to see if the effect of disability status on suicide acceptability remained when only perceived right to suicide was directly assessed. The means, *t*-scores, intra-vignette pair correlations, and degrees of freedom by vignette pair can be seen in Table 4. Again, in all five vignette pairs, suicide was significantly more acceptable when the hypothetical suicidal person had a disability than when he or she did not ( $p < .001$  for pairs 1, 2, 3, and 5;  $p = .001$  for pair 4). The highest mean difference was for pair 3 (chronic physical illness—loss of meaning) and the lowest was for pair 4 (mental illness—unemployment).

As with the total scale scores, the scores on the “right to kill self” item were totaled for the disability (mean = 11.63,  $SD = 5.95$ ) and no-disability conditions (mean = 10.32,  $SD = 6.17$ ). Again, the two were very highly correlated ( $r = .925$ ;  $p < .000$ ), and the disability score was significantly higher than the no-disability score ( $t(499) = 12.27$ ,  $p < .000$ ). The mean difference between the “right to kill self” items in the disability and no-disability conditions was calculated using the same methods that were used to calculate the total scale mean acceptability difference; thus, a positive score represents more permissible attitudes towards the hypothetical suicidal individual's right to kill him or herself when disability was present than when it was not mentioned. Thirty three participants (5.6%) had a negative difference, half had a no difference ( $n = 249$ ; 49.8%), and 218 (44.4%) had a positive difference. Thus, just under half the participants saw disability as conferring a greater right to kill oneself on average, and about half saw the disability and no-disability conditions, on average, as conferring equal right to kill oneself. The remaining 5.6% of participants saw disability, on average, as conferring a lesser right to kill oneself.

The significant difference between vignettes did not remain for the sixth pair of vignettes, which compared Alzheimer's and Parkinson's disease in an elderly adult. The mean score for “right to kill self” item on the Alzheimer's vignette was 2.73 ( $SD = 1.39$ ); for the Parkinson's vignette, it was 2.68 (1.39). This difference was not statistically significant ( $t(499) = -1.36$ ;  $p = .194$ ).

#### 4.2.3. Results of $H_1$

These results generally confirm our first hypothesis. In all five vignette pairs, suicidal ideation was scored as significantly more acceptable in the disability condition compared to the no-disability condition. Furthermore, over 90% of participants had a higher overall acceptability score for the disability condition, as

compared to the no-disability condition. When we isolated the “right to kill oneself” item from the measures, the disability condition still produced a significantly higher mean perceived right to kill oneself in all vignette pairs, and the mean perceived right to kill oneself was still higher significantly higher in the disability condition than in the no-disability condition. However, only about half of the participants had a higher mean acceptability score on the right to kill oneself item in the disability condition, with about half having a neutral mean acceptability difference.

#### 4.3. Predictors of suicide acceptability difference

Correlations between mean suicide acceptability difference and suicidality ( $r = .080$ ,  $p = .075$ ), depressive symptomology ( $r = -.022$ ,  $p = .626$ ), age ( $r = -.049$ ,  $p = .273$ ), education ( $r = .001$ ,  $p = .980$ ), frequency of attendance at religious services ( $r = -.029$ ,  $p = .532$ ), and negative attitudes towards disability ( $r = .084$ ,  $p = .062$ ) yielded no significant outcomes. Furthermore, paired sample *t*-tests showed no significant difference in mean suicide acceptability difference on the basis of own disability status ( $t(483) = -1.650$ ,  $p = .100$ ), family disability status ( $t(485) = .869$ ,  $p = .385$ ), friend disability status ( $t(487) = -1.650$ ,  $p = .100$ ), or family and friend suicide history ( $t(494) = .168$ ,  $p = .866$ ). Sex was not significant predictor, either ( $t(357.85) = 1.455$ ,  $p = .147$ ).

In addition, we also conducted a regression in order to examine how the variables interact in predicting suicide acceptability difference (Table 5). As would be expected given the abovementioned correlations, the regression poorly explained the variance in mean acceptability scores, accounting for only 3.5% of the variance ( $R^2 = .035$ ). Suicidality was a significant predictor ( $\beta = .149$ ,  $p = .007$ ). However, the weight of this result should be interpreted with caution given the poor explanatory power of the model as a whole. As an isolated variable, suicidality was non-significant ( $\beta = .080$ ,  $p = .075$ ) and accounted for only .6% of the variance in total scale mean acceptability difference ( $R^2 = .006$ ).

**Table 5**  
Predictors of suicide acceptability difference.

Variable	Total scale			Right to kill oneself		
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>
Negative attitudes toward disability	.011	.010	.052	.004	.002	.097 <sup>*</sup>
Suicidality	.690	.258	.149 <sup>*</sup>	.057	.051	.062
Depressive symptoms	-.016	.010	-.089	.002	.002	-.059
Friend disability	-.418	.248	-.085	.035	.049	.036
Family disability	-.417	.237	-.088	.043	.047	-.046
Personal disability	.371	.300	.062	-.048	.059	-.041
Age	-.002	.008	-.012	-.001	-.002	-.097
Sex	-.305	.230	-.064	-.057	.045	-.061
Religiosity	-.011	.070	-.052	-.010	.014	-.036
Education	.018	.078	.011	-.018	.015	.057

<sup>\*</sup>  $p < .05$

When we examined mean difference on the “right to kill” item only, only more negative attitude towards disability was a significant predictor ( $r=.104, p=.020$ ), with more negative attitudes towards disability correlating with greater relative endorsement of the “right to kill oneself” in the disability condition. Again, suicidality ( $r=.06, p=.181$ ), depressive symptomology ( $r=-.001, p=.981$ ), education ( $r=.078, p=.083$ ), frequency of attendance at religious services ( $r=-.063, p=.170$ ) were not significantly related to acceptability difference. Age was almost significant ( $r=-.088, p=.05$ ). However, given the large number of correlations run, the possibility of a false positive due to chance is high (Thompson, 2006). If alpha were corrected to  $p < .001$  to account for this, then the correlation between attitudes towards disability and mean difference in perceived right to kill oneself would not be considered significant or notable. Furthermore, paired sample  $t$ -tests showed no significant difference in mean suicide acceptability difference on the basis of sex ( $t(325.63)=1.839, p=.067$ ), own disability status ( $t(483)=-.863, p=.389$ ), family disability status ( $t(485)=.706, p=.480$ ), friend disability status ( $t(487)=-.688, p=.492$ ), or family and friend suicide history ( $t(494)=.209, p=.835$ ).

As with the regression model for total scale suicide acceptability difference, the regression model for mean difference on the isolated right to kill oneself item poorly explained the data (Table 5). The model only accounted for 2.6% of the total variance ( $R^2=.026$ ). Negative attitude towards disability was a significant predictor of greater mean acceptability difference in the model ( $\beta=.097, p=.046$ ); however, again, the poor explanatory power of the model should be considered when interpreting the results. As an isolated predictor, negative attitude towards disability ( $\beta=.104, p=.020$ ) predicted 1.1% of the variance in mean difference in perceived right to kill oneself ( $R^2=.011$ ).

#### 4.3.1. Results of $H_2$

Our second hypothesis was not supported. None of the covariates or demographic factors analyzed, including disability status, attitude towards disability, or family or family member disability status, predicted significant differences in the impact of disability on suicide acceptability. When we isolated the “right to kill oneself” item, more negative attitude towards disability was correlated with greater perceived right to kill oneself in the disability condition; however, this should be interpreted with caution given the number of correlations run and the relatively high  $p$ -value of .020. In the regression models, suicidality did significantly predict greater difference in total scale mean acceptability difference; however, the regression models for both total scale and right to kill oneself were rather poor predictors of the variance and thus the contribution of suicidality or any other variable to mean acceptability difference is not truly notable. As a whole, these results strongly suggest that suicidal ideation is generally seen as more acceptable when disability is involved, regardless of an individual's background.

#### 4.4. Predictors of suicide acceptability

Correlational analyses of continuous variables showed that the same factors predicted the acceptability of suicide in both the disability and no-disability conditions. In particular, respondent's suicidality (disability:  $r=.479$ ; no disability:  $r=.424$ ; both  $p < .001$ ), depressive symptomology (disability:  $r=.395$ , no disability:  $r=.409$ ; both  $p < .001$ ), and attitude towards disability (disability:  $r=.280$ , no disability:  $r=.254$ ; both  $p < .001$ ) were all significantly positively correlated with suicide acceptability for both conditions. Age was negatively correlated with suicide acceptability for both conditions (disability:  $r=-.191$ , no disability:  $r=-.158$ ; both  $p < .001$ ) as was religious frequency (disability:

$r=-.144, p=.002$ ; no disability:  $r=-.124, p=.006$ ). Education was not correlated with either form of acceptability (disability:  $r=-.026, p=.567$ ; no disability:  $r=.029, p=.515$ ).

Individuals without disabilities did not differ from individuals with disabilities with regard to suicide acceptability disability condition ( $t(483)=-.990, p=.323$ ) but had significantly higher acceptability scores for the no-disability condition ( $t(483)=2.10, p=.036$ ). Participants with a family member with a disability reported significantly lower suicide acceptability for both the disability ( $t(485)=-2.24, p=.025$ ) and no-disability conditions ( $t(466.73)=-2.901, p=.004$ ). Participants who reported having a close friend with a disability did not have significantly different mean acceptability scores in either the disability ( $t(487)=-1.91, p=.057$ ) or no-disability conditions ( $t(487)=-.780, p=.436$ ). Similarly, participants who reported having a friend or family member who attempted or died by suicide did not differ in either the disability ( $t(494)=-.241, p=.810$ ) or no-disability conditions ( $t(494)=-.356, p=.722$ ). Women did not differ from men in no-disability condition acceptability ( $t(498)=1.04, p=.301$ ) but had significantly higher scores in the disability condition ( $t(498)=2.08, p=.038$ ).

#### 4.4.1. Regression

We ran a regression to determine predictors of greater suicide acceptability (Table 6). In the disability condition, significant predictors were suicidality ( $\beta=.371, p < .001$ ), depressive symptoms ( $\beta=.187, p < .001$ ), negative attitude towards disability ( $\beta=-.187, p < .001$ ), frequency of attendance at religious events ( $\beta=-.082, p=.038$ ), and sex ( $\beta=-.095, p=.018$ ; males coded as 1, females coded as 2). Suicidality alone was predictive of nearly 23% ( $R^2=.227$ ) of the variance in suicide acceptability–disability condition, and suicidal behavior and depressive symptoms together predicted almost 26% ( $R^2=.258$ ) of the variance. Adding attitudes toward disability to the model accounted for another 4% of the variance, gender accounted for 1.6%, and religious frequency accounted for another 1.2%. Together, these significant predictor variables accounted for over 32% of the variance ( $R^2=.324$ ) in suicide acceptability–disability condition.

The same model was tested for suicide acceptability in the no-disability condition (Table 6). Again, suicidality ( $\beta=.270, p < .001$ ), depressive symptoms ( $\beta=.226, p < .001$ ), and attitudes toward disability ( $\beta=.174, p < .001$ ) all were significant predictors. Unlike suicide acceptability–disability condition, however, religious frequency ( $\beta=-.078, p=.058$ ) and sex ( $\beta=-.053, p=.204$ ) were not significant predictors of suicide acceptability in the no disability condition. Suicidality alone accounted for 17.6% of the variance, and suicidality and depressive symptomology together accounted for just over 22% of the variance ( $R^2=.223$ ), with negative

**Table 6**  
Total scale suicide acceptability in the disability and no-disability conditions.

Variable	Disability condition			No disability condition		
	B	SE B	$\beta$	B	SE B	$\beta$
Negative attitudes toward disability	2.130	.454	-.187**	1.979	.471	.174**
Suicidality	12.902	1.601	.371**	9.411	1.661	.270**
Depressive symptoms	.224	.062	.169**	.300	.064	.226**
Friend disability	-2.477	1.535	-.068	-.362	1.593	-.010
Family disability	-.666	1.480	-.019	-2.702	1.535	-.076
Personal disability	-1.324	1.849	-.029	.503	1.918	.011
Age	-.084	.052	-.066	-.073	-.053	-.058
Sex	-3.394	1.434	-.095*	-1.895	1.488	-.053
Religiosity	-.900	.433	-.082*	-.854	.449	-.078

\*\*  $p < .001$ .

\*  $p < .05$ .

**Table 7**  
“Right to kill oneself” in the disability and no-disability conditions.

Variable	Disability condition			No disability condition		
	B	SE B	B	B	SE B	B
Negative attitudes toward disability	.037	.024	.070	.018	.025	.033
Suicidality	3.043	.616	.225**	2.769	.654	.222**
Depressive symptoms	.037	.024	.081	.046	.025	.097
Friend disability	.106	.590	.008	-.043	.627	.003
Family disability	-1.155	.567	.095*	-1.388	.602	-.109*
Personal disability	-.561	.712	-.036	-.362	.756	-.022
Age	-.014	.020	-.031	-.006	.021	-.013
Sex	-1.140	.550	-.093*	-.846	.584	-.066
Religiosity	-.663	.167	-.167**	-.578	.177	-.147

\*\*  $p < .001$ .

\*  $p < .05$ .

attitudes toward disability accounting for another 3%. Together, these significant predictor variables accounted for 25.3% of the total variance in suicide acceptability-no disability.

The regression was also run for the isolated right to kill oneself item using the same set of predictors (Table 7). In the disability condition, the model accounted for 16.3% of the variance in combined right to kill oneself ratings. It was significantly predicted by suicidality ( $\beta = .255$ ,  $p < .001$ ), having a family member with a disability ( $\beta = .095$ ,  $p = .042$ ), frequency of attendance at religious events ( $\beta = .167$ ,  $p < .000$ ), and sex ( $\beta = -.93$ ,  $p = .038$ ), with females endorsing a higher mean score on the summed right to kill oneself items. In the no-disability condition, the model accounted for 13.2% of variance and was significantly predicted by suicidality ( $\beta = .222$ ,  $p < .001$ ), having a family member with a disability ( $\beta = .109$ ,  $p = .022$ ), and frequency of religious attendance ( $\beta = -.147$ ,  $p = .001$ ).

#### 4.4.2. Results of $H_3$

In general, our findings confirmed our third hypothesis. Suicidality, depression, and less positive attitudes towards disability predicted increased acceptability of suicidality in both conditions. However, frequency of attendance at religious events and sex were only significant predictors of suicide acceptability in the disability condition. When we isolated the right to kill oneself item, suicidality, frequency of attendance at religious events, and having a family member with a disability all predicted greater belief that in the suicidal individual's right to kill him or herself in both conditions. Sex was again a significant predictor in the no-disability condition; depressive symptoms were not a significant predictor in either regression.

## 5. Discussion

This study examined the relative acceptability of suicide in hypothetical scenarios when a disability was and was not present through the use of five vignette pairs. In each pair, suicide was seen as significantly more acceptable when the person expressing suicidal ideation had a disability than when they did not have a disability. Surprisingly, this difference was true for both participants with and without disabilities. Similarly, having friends or family members with disabilities did not significantly influence the relative acceptability of suicide in people with and without disabilities. Although attitudes toward disability did not significantly influence the relative acceptability of suicide in people with disabilities, more negative attitudes towards disability significantly predicted greater acceptability of suicide regardless of the hypothetical person's disability status. Not surprisingly, higher

levels of suicidality and depressive symptoms also significantly predicted higher suicide acceptability in both conditions. These results generally remained consistent when the “right to kill oneself” item was isolated as well; in all five vignette pairs, the disability condition still produced greater endorsement of the individual's right to kill him or herself. Having a family member with a disability, suicidality, and higher frequency of attendance at religious events predicted greater endorsement of the right to kill oneself in both the disability and no-disability conditions. There were no strong predictors of relative endorsement of the right to kill oneself between the conditions, although more negative attitudes towards disability emerged as a possible, although weak, predictor.

### 5.1. Implications

The results of this study strongly suggest that the presence of disability makes suicidal ideation more understandable and acceptable in the eyes of the general population. It may be that the general permanency of disability generates a greater sense of hopelessness, and people are less willing to consider that the person's situation may improve. Alternatively, it may be that disability itself is seen as a status so undesirable that it justifies suicidal ideation in and of itself—an attitude noted by some opponents of physician-assisted suicide (Fadem et al., 2003; Krahn, 2010).

Interestingly, the lowest mean difference in acceptability was for the vignette pair in which the disability was mental illness, whereas the greatest mean difference was in the vignette pair where the disability was spinal cord injury for the total measure and chronic physical illness for the isolated “right to kill oneself” item. It may be that spinal cord injury and chronic physical illness are generally viewed as more debilitating or hopeless than mental illness; the latter may be seen as more likely to improve with treatment and therefore less hopeless. Additionally, some participants may have viewed suicidality as a symptom of mental illness that could be addressed by treatment. These findings are also similar to those reported by Droogas et al. (1982) and Deluty (1989), who found that physical disability was generally viewed as a more acceptable reason to commit suicide than psychiatric or cognitive disability. However, it is important to note that suicidality was still seen as significantly more acceptable in an individual with mental illness as opposed to an individual with no stated disability who was in a similar circumstance. In contrast to Droogas et al.'s findings, however, cognitive disability provoked greater suicide acceptability than physical disability in the one vignette pair that compared two different disability conditions in an elderly adult. However, when the “right to kill oneself” item was isolated, there was no significant difference between the cognitive and physical disability conditions for the elderly individual, suggesting that the difference arose mainly from perceptions that the individual with Alzheimer's disease was in a subjectively worse situation than the individual with Parkinson's disease.

As in the general suicide acceptability literature (Gibb et al., 2006; Li et al., 2009; Zhang and Sun, 2014), suicidality and depression were significant predictors of suicide acceptability in both the disability and no-disability conditions. Frequency of participation in religious services only predicted suicide acceptability in the disability condition, although the contribution of the religious participation neared significance for the no-disability condition. Additionally, frequency of religious participation was a significant predictor of acceptability in both conditions, suggesting that it is generally a consistent predictor of suicide acceptability.

Attitude towards disability did not predict a difference in suicide acceptability between the disability and no-disability conditions when total scale scores were used and only marginally

predicted greater acceptability when the “right to kill oneself” item was isolated. However, a more negative attitude towards hypothetical interactions with people with disabilities significantly predicted greater total suicide acceptability in both conditions, even when depressive symptoms and suicidality were held constant. It could be that people with more negative attitudes toward disability are more likely to be uncomfortable with situations that invite vulnerability or weakness and would thus be more sympathetic toward the idea of suicide as an avoidance or coping mechanism for stress or be likely to see those situations as very bad. Alternatively, more negative attitudes toward social interaction in general could indicate a social isolation above and beyond that accounted for depressive symptoms and suicidality.

Greater perceived right to kill oneself was predicted by suicidality, having a family member with a disability, and less frequent attendance at religious services in both conditions; as with total suicide acceptability, sex was only a predictor in the disability condition. Although it is not surprising that both suicidality and less frequent religious attendance predicted greater right to kill oneself, it is somewhat surprising that people with family members with disabilities endorsed a greater perceived right to suicide in both conditions. It may be that witnessing the difficulties associated with a loved one's condition may make people more accepting of the idea of suicide in general, as they may view it as a way to curtail suffering in general. Depressive symptomology was not a significant predictor in either condition, suggesting that the contribution of non-suicide-related depression symptoms to the greater suicide acceptability seen above may be in making suicidal ideation more understandable, but not in making those thoughts more acceptable to act out.

## 5.2. Limitations and future research

This study has some limitations that should be discussed. First, the vignettes were not randomly ordered, so it possible that some order effects may have occurred. Relatedly, participants may have grasped the nature of the study (i.e., that disability status was the main factor that differentiated the vignette pairs, and this could have created a social desirability effect when responding; however, if there was a social desirability effect related to disability, one would expect to suppress the acceptability of suicide in the disability condition. The fact that acceptability was still significantly higher in the disability condition suggests that social desirability likely did not strongly influence results. Second, most vignettes dealt with individuals in their mid- to late twenties, with only one vignette pair featuring middle-aged individuals. Future studies should expand this research by creating additional vignettes that cover a wider variety of ages. Third, only one vignette pair compared the effects of type of disability on suicide acceptability. Given that this study strongly establishes greater suicide acceptability for the disability condition versus the no-disability condition, future research could expand this work by further examining the differential effects of type of disability on suicide acceptability. Finally, this study could also be replicated in other countries to examine if the observed differences in suicide acceptability are seen in other cultures.

In addition, this sample had high rates of depressive symptomology and suicidality relative to what would be expected in a typical community sample. Thus, it is possible that a ceiling effect may have occurred with regards to somewhat reduced variability in CES-D and logarithmically adjusted SBQ-R scores. However, the paired nature of the vignettes does allow for some intra-participant comparison, mitigating the potential influence of a ceiling effect to some degree. Also, neither depressive symptoms nor suicidality were independently related to mean difference on either the total suicide acceptability measure or the right to kill

oneself item. In the regression, suicidality only accounted for a very small portion of the variance in mean acceptability difference for total scores and a non-significant portion of the variance in mean acceptability difference for the right to kill oneself item. These results suggest that suicidality and depression do not account for a significant or meaningful portion of the difference in suicide acceptability between the disability and no-disability conditions. Still, efforts should be made to replicate the present study with a sample that has more typical rates of depression and suicidality in order to account for possible correlates that may have been suppressed by a ceiling effect. Researchers may wish to replicate the study with alternative, more specific measures of depression and other psychopathology in order to create more variance in the measure of depression (Winer et al., 2014). This may elicit other relationships that may have been downplayed or obscured here.

## 6. Conclusions

This study found that suicide was generally viewed as more acceptable when the hypothetical suicidal individual had a disability than when they did not. These findings not only have implications for the broader social perceptions of disability and suicide but may also have clinical implications. If individuals with disabilities who are experiencing suicidal ideation receive a social message that their disability makes suicide more acceptable or understandable, they may feel that they have implicit social permission to commit suicide; in other words, the message of “suicide is not an option” could instead be conveyed as “suicide is not an option for everyone, but it is an option for you.”

Greater acceptability of suicidality in people with disabilities could convey to individuals with disabilities who are suicidal and reaching out for help that their feelings of hopeless are justified and even rational, potentially having an iatrogenic effect. Similarly, clinicians who hold such attitudes may be less likely to attribute person with a disability's suicidality to treatable conditions, such as depression, which is elevated in people with even temporary, non-terminal illnesses (Hendon and Epting, 1989), or transient life stressors. Thus, they may see people with disabilities' desire to take their lives as rational and logical given their disability (Lee-man, 1999). Again, this could interfere with individuals with disabilities' access to proper treatment and assessment for suicidality. Clinicians, advocates, and those who work in suicide prevention should be aware of these societal attitudes toward disability and suicide, and should work to confront them, especially when working with individuals with disabilities.

## Appendix A

### 6.1. Vignette pair 1

John is 21 year-old man. Last year, he acquired a brain injury as a result of a car accident, and as a result, he had to leave college and move back home. Although John has made progress since his accident, he continues to have trouble remembering things and needs his parents' help with some everyday activities, like cooking, so it would be difficult for him to live on his own. Lately, John has began feeling very depressed about his life, and has thought about killing himself because he does not feel like his situation will get better.

Robert is a 22 year-old man. He lives at home with his parents. He previously lived on his own for two years, but had to move back in due to financial issues. He misses being independent and worries that he will not make enough money to move out. He is

very unhappy with his situation and feels like he cannot get out of it. Because of this, he is thinking of killing himself.

### 6.2. Vignette pair 2

Maddy is a 22 year-old college student who worked hard to prepare for medical school applications. She has been blind since a young age and has always wanted to be a doctor. Recently, Maddy was told that because she is blind, medical school will probably not be an option for her. She has looked into other majors and careers, but cannot think of one that she is interested in where her blindness would not be an issue. Because of this, Maddy has felt very hopeless and sad. She has begun to think of killing herself, as she cannot do anything due to her disability.

Jill is a 22 year-old college student. She has wanted to be a lawyer since she was a child and has worked hard to achieve that goal. She recently took the LSAT, a law school admissions test, and received a poor score. Her score will make it very difficult to get in the law school. Because Jill studied hard for the test, she does not feel like she can raise her score and cannot find any other careers that she is interested in pursuing. Because of this, she feels hopeless and has begun to think of killing herself, as she feels like she can no longer pursue a good career.

### 6.3. Vignette pair 3

Carol is 39 year-old mother of two college-age children. For the past five years, she has had a chronic illness that comes and goes. Some days, Carol is in significant physical pain and has difficulty getting out of bed. Other days, she does not feel very sick and can do most things. Her doctors say that the medication she is on right now is the best treatment available, and that her condition is unlikely to get better. Sometimes, Carol thinks that she cannot deal with her illness anymore and considers killing herself to end the pain.

Helen is a 40 year-old mother of two college-aged children. Helen feels like she has little to do in life, and has been unable to find a job or meaningful volunteer work. Some days she does not leave the house and feels very bored. Because she lacks much education or work experience, she feels like she will be unable to find meaningful activities now that her children have moved out of the house. Some days, Helen feels so hopeless that she has thought about killing herself.

### 6.4. Vignette pair 4

Michael is a 26 year-old man with bipolar disorder. Due to his disorder, Michael has times where he feels very energetic and happy, though he sometimes does dangerous or risky things like spending all of his money or doing drugs during these high times. Michael also has times where he feels very sad and depressed, and has little energy. Michael has seen a doctor and is on medication, but he still experiences drastic changes in mood. Recently, Michael lost his job due to his behavior during a manic (high energy) episode and feels very depressed—so much so that he has considered killing himself because he doubts he will be able to find and keep another job.

Tim is a 27 year-old man. He has recently been laid off from his job and has looked for another job for months without any success. This is the third job Tim has lost in five years, and he has doubts about his ability to find and keep another job. He feels very bad about his situation and has been thinking of killing himself, mostly due to his seemingly constant employment and financial problems.

### 6.5. Vignette pair 5

Dan is a 30 year-old man. He was recently in a car accident and now is paralyzed from the waist down. Dan has gotten out of the hospital and is doing well learning to take care of himself. Last week, Dan's girlfriend of five years broke up with him, saying that she felt overwhelmed by his disability. Dan misses his girlfriend very much and worries that he will be unable to find someone special again, especially because of his disability. He is very sad and has considered killing himself because he feels heartbroken and hopeless.

Derrick is 29 year-old man. He has a good but demanding job, and until last week was generally doing well. Last week, his girlfriend of 5 years broke up with him, stating that she could not see herself with Derrick for life due to his high-pressure career. Derrick cannot see himself finding someone else and feels heartbroken. Because of this, he feels that his life is hopeless and has considered killing himself.

### 6.6. Vignette pair 6

Stan is 85 year-old man. Stan has always been extremely self-sufficient, and took great pride in being handy and doing things himself. However, Stan was recently diagnosed with Parkinson's disease, and the resulting tremor has made it very difficult for him to do even basic chores around the house. Even though his medication helps some, he knows that his condition will only get worse with time. Because of this, he feels that his life is hopeless and has considered killing himself.

Homer is 83 year-old man. Until recently Homer had worked in the Philosophy department of the local university. However, Homer has been very forgetful and has struggled to concentrate, which forced him to retire from his job. Shortly after his retirement, Homer was diagnosed with Alzheimer's disease. Because of this, he feels that his life is hopeless and has considered killing himself.

## References

- Achille, M.A., Ogloff, J.R., 2003. Attitudes toward and desire for assisted suicide among persons with amyotrophic lateral sclerosis. *OMEGA—J. Death Dying* 48 (1), 1–21.
- Amundson, R., Taira, G., 2005. Our lives and ideologies: the effect of life experience on the perceived morality of the policy of physician-assisted suicide. *J. Disab. Policy Stud.* 16 (1), 53–57.
- Buhrmester, M., Kwang, T., Gosling, S.D., 2011. Amazon's Mechanical Turk: a new source of inexpensive, yet high-quality data? *Perspect. Psychol. Sci.* 6 (1), 3–5.
- Centers for Disease Control and Prevention, nd. Web-based injury statistics query and reporting system. Retrieved February 20, 2014, from: (<http://www.cdc.gov/injury/wisqars/index.html>).
- Droogas, A., Siiter, R., O'Connell, A.N., 1982. Effects of personal and situational factors on attitudes toward suicide. *OMEGA—J. Death Dying* 13 (2), 127–144.
- Deluty, R.H., 1989. Factors affecting the acceptability of suicide. *OMEGA—J. Death Dying* 19 (4), 315–326.
- Emanuel, E., Fairclough, D., Daniels, E., Clarridge, B., 1996. Euthanasia and physician-assisted suicide: attitudes and experiences of oncology patients, oncologists, and the public. *Lancet* 347, 1805–1810.
- Fadem, P., Minkler, M., Perry, M., Blum, K., Moore, L.F., Rogers, J., Williams, L., 2003. Attitudes of people with disabilities toward physician-assisted suicide legislation: broadening the dialogue. *J. Health Politi. Policy Law* 28, 977–1002.
- Fishbain, D.A., Bruns, D., Meyer, L.J., Lewis, J.E., Gao, J., Disorbio, J.M., 2012. Exploration of the relationship between disability perception, preference for death over disability, and suicidality in patients with acute and chronic pain. *Pain Med.* 13, 552–561.
- Findler, L., Vilchinsky, N., Werner, S., 2007. The Multidimensional Attitudes Scale toward persons with disabilities (MAS): construction and validation. *Rehabil. Counsel. Bull.* 50, 166–176. <http://dx.doi.org/10.1177/0034352070500030401>.
- George, D., Mallery, P., 2003. SPSS for Windows step by step: A simple guide and reference.
- Giannini, M.J., Bergmark, B., Kreshover, S., Elias, E., Plummer, C., O'Keefe, E., 2010. Understanding suicide and disability through three major disabling conditions: intellectual disability, spinal cord injury, and multiple sclerosis. *Disab. Health J.*

- 3 (2), 74–78.
- Gibb, B.E., Andover, M.S., Beach, S.R., 2006. Suicidal ideation and attitudes toward suicide. *Suicide Life-Threat. Behav.* 36 (1), 12–18.
- Hendon, M.K., Epting, F.R., 1989. A comparison of hospice patients with other recovering and ill patients. *Death Stud.* 13, 567–578.
- Kleiman, E.M., 2015. Suicide acceptability as a mechanism of suicide clustering in a nationally representative sample of adolescents. *Compr. Psychiatry* 59, 17–20.
- Krahn, G.L., 2010. Reflections on the debate on disability and aid in dying. *Disab. Health J.* 3 (1), 51–55.
- Leeman, C.P., 1999. Depression and the right to die. *Gen. Hosp. Psychiatry* 21 (2), 112–115. [http://dx.doi.org/10.1016/S0163-8343\(98\)00069-3](http://dx.doi.org/10.1016/S0163-8343(98)00069-3).
- Li, X., Phillips, M.R., Yang, S., Wang, Z., Zhang, Y., Lee, S., 2009. Relationship of suicide acceptability to self-reports of suicidal ideation and behavior. *Chin. Ment. Health J.* 23, 734–739.
- Linehan, M.M., 1981. *The Suicidal Behaviors Questionnaire (SBQ)*. University of Washington.
- Neeleman, J., Wessely, S., Lewis, G., 1998. Suicide acceptability in African- and White Americans: the role of religion. *J. Nerv. Ment. Dis.* 186 (1), 12–16. <http://dx.doi.org/10.1097/00005053-199801000-00003>.
- Osman, A., Bagge, C.L., Gutierrez, P.M., Konick, L.C., Kopper, B.A., Barrios, F.X., 2001. The Suicidal Behaviors Questionnaire-Revised (SBQ-R): validation with clinical and nonclinical samples. *Assessment* 8 (4), 443–454. <http://dx.doi.org/10.1177/107319110100800409>.
- Qualtrics, 2015. (<http://www.qualtrics.com>). Provo, UT: Author.
- Pompili, M., Forte, A., Palermo, M., Stefani, H., Lamis, D.A., Serafini, G., Girardi, P., 2012. Suicide risk in multiple sclerosis: a systematic review of current literature. *J. Psychosom. Res.* 73, 411–417.
- Radloff, L.S., 1977. The CES-D scale: a self-report depression scale for research in the general population. *Appl. Psychol. Meas.* 1 (3), 385–401. <http://dx.doi.org/10.1177/014662167700100306>.
- Shapiro, D.N., Chandler, J., Mueller, P.A., 2013. Using Mechanical Turk to study clinical populations. *Clin. Psychol. Sci.* 1 (2), 213–230.
- Stack, S., 1998a. Gender, marriage, and suicide acceptability: a comparative analysis. *Sex Roles* 38, 501–520. <http://dx.doi.org/10.1023/A:1018770124576>.
- Stack, S., 1998b. Heavy metal, religiosity, and suicide acceptability. *Suicide Life-Threat. Behav.* 28, 388–394.
- Stack, S., Kposowa, A., 2011. Religion and suicide acceptability: a cross-national analysis. *J. Sci. Study Rel.* 50 (2), 289–305.
- Thompson, B., 2006. *Foundations of Behavioral Statistics: An Insight-based Approach*. Guilford, New York.
- Wetzel, H.H., Gehl, C.R., Dellefave-Castillo, L., Schiffman, J.F., Shannon, K.M., Paulsen, J.S., 2011. Suicidal ideation in Huntington disease: the role of comorbidity. *Psychiatry Res.* 188, 372–376.
- Weissman, M.M., Sholomskas, D., Pottenger, M., Prusoff, B.A., Locke, B.Z., 1977. Assessing depressive symptoms in five psychiatric populations: a validation study. *Am. J. Epidemiol.* 106 (3), 203–214.
- Winer, E.S., Nadorff, M.R., Ellis, T.E., Allen, J.G., Herrera, S., Salem, T., 2014. Anhedonia predicts suicidal ideation in a large psychiatric inpatient sample. *Psychiatry Res.* 218 (s 1-2), 124–128.
- Zhang, J., Sun, L., 2014. Suicide ideation and acceptability among females aged 15–34 years in rural China. *J. Nerv. Ment. Dis.* 202 (2), 161–166. <http://dx.doi.org/10.1097/NMD.0000000000000104>.