Assessing the Economic and Quality of Life Impacts of Grief and Suicide in the United States

by

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DEDICATION

This dissertation is dedicated to my dearest friend and champion wife Janice who has believed in me and supported me through the ups and downs of life. It is also dedicated to my wonderful children Isaac, Amy, Joanna, Peter, Scott, and the little girl who will be born to us in June. My hope is that they may be inspired to work hard, help others, seek "out of the best books words of wisdom," and "seek learning, even by study and also by faith" (Doctrine and Covenants 88:118).

Finally, I dedicate this dissertation to all those who are experiencing grief from the death of a loved one, that they may know that they are not alone and that there are opportunities to get help with coping and adjusting amidst their grief. My hope is that this and future work I pursue may "give light to them that sit in darkness and in the shadow of death" (Luke 1:79).

ACKNOWLEDGMENTS

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ABSTRACT

This dissertation includes several studies regarding the impact of grief and suicide on economic and quality of life outcomes in the US. Measuring this impact allows for comparisons to other health conditions and provides a foundation for understanding the value of investing in grief support and suicide prevention interventions.

The first study examined the impacts of grief on medical expenditures. Individuals whose spouse died had expenditure increases of $498 in the year following the death (p=0.018), and children ages 1-24 whose parent died had an average decrease of $334 in expenditures (p=0.032). In identifying the sample, two-thirds of bereaved individuals were excluded from the analysis because of changes in health insurance the year before or the year after the death.

The remaining studies explored the prevalence and burden of suicide-related bereavement. A US nationally-representative survey was conducted with adolescents and adults who knew someone who died by suicide. Among adolescents ages 15-17, 44% knew someone who died by suicide and an additional 17% knew someone who attempted suicide. An estimated 7% of adolescents were currently experiencing emotional, mental, or physical health effects from a suicide death or attempt. In the adult US population, 58% of people knew someone who died by suicide and 7% were experiencing complicated grief.

Multiple measures of health-related quality of life were used in the survey. The preference weighted measure of health utility was measured using both a time trade-off (TTO) question and the EuroQol 5 dimensions (EQ-5D). Only those who were currently experiencing health effects from the suicide exposure were asked the TTO question and 94% either skipped

the question or were unwilling to trade off time. Respondents' current health, as reported in a visual analogue scale, was transformed to approximate their health utility as measured with the EQ-5D.

Retrospective approximations of health utility over time were combined to measure the quality adjusted life years (QALYs) lost from suicide-related bereavement. QALYs lost from suicide decedents were also estimated based on health utility estimates by age and sex among those with fair or good health, and average life-expectancy. Each suicide resulted in approximately 16.4 QALYs lost from the bereaved and 14.3 QALYs lost from the deceased, or a total of 30.6 per suicide. At a national level, the 44,965 suicides in 2016 resulted in approximately 1.4 million QALYs lost.

Absenteeism losses (not being at work) and presenteeism losses (being at work but not being as productive as normal) were quantified from the national survey on suicide bereavement. Estimates of net productivity losses among the suicide decedents were also generated. Together the productivity losses totaled $3.0 million per suicide death, or $134 billion from all the suicides in 2016.

These studies found substantial economic and quality-of-life losses from suicide deaths alone; thus grief in general poses very substantial losses each year. The majority of these losses appear to take place outside the health care sector. A public health approach is needed to support and help those bereaved from suicide and all causes of death.

CHAPTER I: An Introduction to Grief

Most people's introduction to grief is through lived experience that is unwanted and often unexpected. Almost everyone will be introduced to grief at some stage in their life, if they have not already been introduced.

Grief is a companion to death. It may arrive before death occurs and may linger long afterward. The initial phase of grief following death is an acute experience that is manifest outwardly through mourning and manifest inwardly through emotional, mental, spiritual, and physical reactions to the loss. The internal disruption of grief, as well as stigma and social awkwardness talking about death, can significantly disrupt social relationships. In some cultures social interactions are very supportive during the acute phase of grief; however, in many American cultures grief can be socially isolating because surrounding individuals do not know what to say or how best to support the bereaved.[1–4]

There are many theories that explain the grief experience. In 1969, Dr. Kübler-Ross introduced a framework of stages for experiencing grief.[5] These stages include denial and isolation, anger, bargaining, depression, and acceptance. These have been researched, critiqued, and expanded upon throughout the years.[6–10] A more recent theory of the grief experience is the dual process model by Stroebe and Schut.[11,12] This theory captures the dynamic and non-linear experience of grief, suggesting that people oscillate between loss-oriented and restoration-oriented activities. Within these two orientations and pursuits, people may engage in positive or negative behaviors. Problems arise when one does not oscillate and gets stuck in restoration-

oriented or loss-oriented tasks. This theory has helped guide the development of recent grief-related therapies.[12–15]

Other researchers have developed a clinical distinction of grief when it has become abnormally disruptive and long-lasting in one's life. One group of researchers has called this experience prolonged grief disorder, and another has called this complicated grief.[16–19] The two slightly different but overlapping perspectives on grief-related disorders have been combined into one set of proposed clinical criteria in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), and is called persistent complex bereavement disorder.[20] The "complex" or "complicated" aspect of grief is when an individual has complications that inhibit a successful transition from an acute phase of grief to an integrated phase of grief, or where one has regained control and function in life despite the continued feelings of loss and longing.

One of the most tragic types of death, and one that results in high rates of complicated grief among the bereaved, is suicide.[18,21–25] Many studies have shown substantial decreases in the physical, psychological, and social well-being of those bereaved by suicide.[26–30] There is much more stigma associated with suicide deaths than deaths from natural or accidental causes.[30,31] Those bereaved by suicide also experience the harrowing feelings of guilt, shame, and often anger.[32–34]

The purpose of this dissertation is to explore the overall economic and quality of life impacts of grief in the United States, with a special focus on suicide and suicide-related bereavement. Chapter II explores how the death of a family member in a US hospital can affect medical expenditures in adults and children the year following the death. That chapter pertains to any cause of death. The remaining chapters focus on the impact of knowing someone who died by suicide. They are based on a national survey I conducted among individuals who were

exposed to a suicide death. Chapter III provides an overview of initial findings from the survey, including the prevalence of suicide exposure, the prevalence of complicated grief from a suicide, the impact of the death on respondents' health-related quality of life, and the impact on other domains of life. Chapter IV explores and compares the different measures of health utility and health related-quality of life that were used in the survey. Chapter V quantifies the total quality adjusted life years (QALYs) and productivity losses from suicide and suicide-related bereavement in 2016. A summary of contributions and recommendations for future research in the area of grief from suicide and other types of death is provided in Chapter VI.

CHAPTER II: Medical Costs Associated with Grief and Bereavement

Introduction

Following the death of a family member, individuals may experience grief that can have a significant impact on their medical use and expenditures. This impact has been documented in countries throughout the world.[35–39] Bereaved individuals may experience increases in medical expenditures because they seek out professional help with their grief. The stress of bereavement can also impact the physical and psychological health of individuals, resulting in symptoms such as sleep disturbances, increased heart rate and blood pressure, weight loss, physical pain, depression, loneliness, and anxiety.[19,40–42] These health impacts can potentially lead to increases in emergency care services and outpatient services where grief may or may not be identified as one underlying cause. Among children, the decision to receive care is filtered by their parents, which may be associated with limited access to care during a time of family bereavement.

There are few studies that have examined changes in medical expenditures among bereaved individuals in the United States.[38,43] One used self-reported information to identify increases in out-of-pocket prescription among mothers whose child had died,[38] and the other examined Medicare claims to understand the changes in medical expenditures among those 65 and older whose spouse died in the hospital.[43] The present study uses health insurance claims rather than self-reported expenditures. It also adds to the literature by examining the effect among men, women and children less than 65, and examines the effect of bereavement on medical expenditures for different types of relationships to the deceased.

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Understanding these dynamics and the potential economic impacts of grief on the healthcare system can provide society with a foundation for determining the value of investing in additional medical and community support services for bereaved family members. The aim of this study was to quantify changes in medical expenditures the year following the death of a family member in a US hospital.

Methods

Study Population

Using a large database of employer-sponsored health insurance claims, the MarketScan® Commercial Claims and Encounters database, I identified individuals aged 1 to 64 who died in a US hospital in 2009. Deaths were identified by the discharge status of the insurance claim record. The date of discharge was assumed to be the date of death.

I also identified individuals aged 1 to 64 who were discharged from the hospital in 2009 but did not die in the hospital. These individuals were required to have some inpatient, outpatient, or medication use 180 days after the event to ensure they had survived the hospitalization and did not die at home. I also required that the primary diagnosis for their hospitalization was similar to those of the deceased individuals based on the clinical classification software level 2 diagnostic categories.[44]

Family members of the deceased (i.e., the bereaved) and family members of the hospitalized but not deceased (i.e., the not bereaved) were identified using the family id for all those covered under the same family insurance plan. All were less than 65 years old. A relationship to the deceased or hospitalized was assigned based on each family member's relationship to the primary beneficiary of the insurance plan (see Appendix A for details). There

were some individuals with erroneous ages, but 99% or more of the adults were ages 19 to 64 and 99% or more of the children had recorded ages of 1 to 24. I required that the bereaved and not bereaved individuals have the same relationship to the deceased or hospitalized.

One study exclusion criteria was if the deceased or injured individual was the primary beneficiary. These situations were excluded because a primary beneficiary's death results in a disruption in insurance coverage and a change in the family insurance plan id, which change I was unable to track in the dataset. I also excluded bereaved and not bereaved family members if they had some other disruption in their enrollment the year before or the year after the event. These two requirements removed about two thirds of the bereaved individuals from the study. As a comparison, requiring continuous enrollment for two years in the non-bereaved population reduced the sample by half. I also excluded situations among the non-bereaved population where the hospitalized family member was the primary beneficiary. Other study exclusion criteria were missing medication or mental health coverage information in the dataset, or the bereaved or not bereaved individual had an overlapping hospitalization with the injured or deceased family member's hospitalization. The latter exclusion was to avoid increases in medical expenditures associated with an injury that may have also caused the death or hospitalization (e.g., a car accident affecting both the bereaved and the deceased).

Study Design

Since family members may not all be under the same insurance plan, this study focuses on changes in medical expenditures for specific family relationship types rather than the entire family household. In particular, I examined the effect on adults whose spouse died, adults whose child died, children ages 1 to 24 whose parent died, and children ages 1 to 24 whose sibling died. I used a difference-in-differences approach to measure the effect. Changes in medical

expenditures from the year before to the year after a family member's death among bereaved individuals were compared to the changes before and after a family member's hospitalization among not bereaved individuals.

Outcomes

There were six cost outcomes for which I calculated the post-year minus pre-year differences:

- Total medical expenditures

- Inpatient or emergency room expenditures

- Outpatient grief-related expenditures

- Outpatient mental health or substance abuse expenditures where grief was not diagnosed

- Other outpatient expenditures

- Medication expenditures

These outcomes were examined for each of the four relationship types. I assumed that bereavement would not have extreme effects on changes in medical expenditures, and so all differences were capped at -$100,000 and $100,000. This approached minimized the impact of outliers and still allowed there to be an effect, if there was any, for those differences more than $100,000 or less than -$100,000. In a trend analysis, I also examined the average monthly expenditures of the six cost categories in the 12 months leading up to the event and the 12 months following the event. For the bereaved and not bereaved spouses, pregnancy-related costs were removed from all analyses since the bereaved spouses would be less likely to incur these costs than the not bereaved spouses.

Outpatient grief-related expenditures were determined as outpatient visits where there was a primary or secondary diagnosis of the following ICD-9-CM codes: 309.0 (adjustment disorder with depressed mood), V62.82 (bereavement, uncomplicated), or V61.07 (family disruption due to death of family member). Outpatient mental health or substance abuse expenditures were those visits that did not have a primary or secondary grief diagnosis but did have a primary or secondary diagnosis that was in the following single-level clinical classification software categories[44]: adjustment disorders (650); anxiety disorders (651); attention-deficit, conduct, and disruptive behavior disorders (652); impulse control disorders not elsewhere classified (656); mood disorders (657); personality disorders (658); schizophrenia and other psychotic disorders (659); alcohol-related disorders (660); substance-related disorders (661); suicide and intentional self-inflicted injury (662); and miscellaneous mental health disorders (670). I also included part of the diagnoses in the category of disorders usually diagnosed in infancy, childhood or adolescence (655), excluding those regarding autism or Asperger's syndrome.

Predictors

Thousands of potential predictor variables were generated from the information available in the claims database. These variables pertained to age, sex, indicators for different industries and employment status of the primary beneficiary, state and region indicators, prescription drug categories using Redbook® therapeutic groups and classes, number of unique categories of medications being taken, major diagnostic categories of visits and hospitalizations, clinical classification software multi-level diagnostic categories of visits and hospitalizations, number of different categories of diagnoses in the past year, clinical classification software current procedural terminology categories for procedures performed, Charlson Comorbidity Index score

and indicators, utilization by health care setting, and indicators of having no use by setting or outcome category in the pre-period.

All the variables generated pertained to the year prior to the event. Variables were generated for the bereaved and not bereaved groups as well as their family members who died or were injured. For all the different predictors I created indicator variables for having any event in the past year as well as a second variable that was a count of the number of events in the past year.

To capture experiences among the deceased or injured I also included variables pertaining to how much money was spent on the events in the past year, capping the cost at $100,000 and including indicators when the costs were capped. The predictors were capped to match what was done for the outcomes and to give the outliers less influence in predicting the outcomes. Variables for the 60 days prior to the event were included, as well as variables for the day of discharge when the event occurred. The dataset of variables pertaining to the injured or deceased was merged to the dataset of bereaved and not bereaved. Only those variables that were present in 5% of the bereaved were kept for the analysis.

Given that there were still over a thousand predictor variables, I further restricted the set of variables to those that were potential confounders or those that were related to the six outcomes of interest. To do this I used lasso regression.[45,46] Lasso regression fits the coefficients based on their ability to reduce the residual sum of squares while also penalizing them by the sum of their absolute values. This trade-off in the fitting process can act as a selection process for identifying the variables that are the strongest predictors of the outcome. A Gaussian distribution was assumed for the six outcomes in these regression models. Many of the outcomes were peaked near 0 and had long tails in the distribution that went out to -$100,000 and $100,000. To

adjust for this, in the lasso selection models only, I transformed the outcome using a square root function while maintaining the negative and positive values of the outcome. The number of predictor variables selected for each of the relationship types and outcomes is provided in Table II-1.

Table II-1. Number of Potential Confounders Identified, by Outcome and Relationship Type

Outcomes	Adult Whose Spouse Was Hospitalized	Adult Whose Child Was Hospitalized	Child Whose Parent Was Hospitalized	Child Whose Sibling Was Hospitalized
Total medical expenditures	476	191	426	222
Inpatient or emergency room expenditures	328	170	287	109
Outpatient grief-related expenditures	159	118	187	134
Outpatient mental health or substance abuse expenditures where grief was not diagnosed	220	191	177	84
Other outpatient expenditures	565	216	238	125
Medication expenditures	276	132	289	49

Note: Some adults had erroneous ages, but more than 99% of them had recorded ages of 19 to 64. Children were, at a minimum, 16 years younger than their parent who died. 99% of children had a recorded age of 1 to 24 with a few outliers or erroneous ages greater than 24.

Statistical Analysis

Average monthly expenditures and standard errors for the bereaved and not bereaved groups were plotted for each of the relationships and outcomes. Adjusted analyses for the annual difference-in-differences were performed using two approaches: one that measured the average effect assuming no heterogeneity, and the other that measured the effect accounting for the heterogeneity in the outcomes.

To measure the effect without capturing potential heterogeneity I used inverse probability of treatment weighting[47] and then calculated the weighted mean difference in the outcomes for the bereaved and not bereaved groups. The statistical significance in these differences was calculated using a non-parametric Mann-Whitney U test. The probability of treatment used for

weighting, or in this case the probability of bereavement, was calculated using a random forest model with all the potential confounders. Such an approach has been done in other studies,[48,49] and using the potential confounders rather than all possible covariates to calculate a propensity score has been shown to achieve greater precision in treatment effect estimates.[47,50]

The random forest method is a non-parametric approach that averages predictions generated across multiple decision trees that are fitted to the data.[51] There are many advantages to using random forests compared to the traditional logistic regression models for calculating propensity scores. The decision tree framework allows for any meaningful interactions between covariates to be included in the prediction of the outcome. Random forest models also do not automatically use all the potential confounders in the model, as would a parametric logistic regression model, but instead the approach uses the potential confounders that are most strongly predictive of the propensity for bereavement. Overall, propensity weights developed using random forests have been shown to perform better than propensity weights using logistic regression models.[49]

Each random forest was generated with 100 decision trees and allowed for a minimum of 5 observations to be within each node of every tree. Over the 100 trees I calculated a predicted probability that the observation was classified as being bereaved. I removed observations where the predicted probability was 0 in order to calculate the inverse weights.

The common support in predicted probabilities for the bereaved and not bereaved was also examined, and all cases where there was no common support were removed (Table II-2 and Table II-3, for details see Appendix A). The situations with no common support included hospitalizations where the death was fairly imminent based on the diagnosis-related groups (DRGs) of the hospitalization. Some of the most frequent DRGs without common support were

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ventilator support DRGs, severe sepsis with major complications or comorbidities, and poisoning or toxic effects of drugs with major complications or comorbidities.

To measure the effect of bereavement while identifying and accounting for heterogeneity, I use the method of causal forests. Causal forests are a generalization of random forests. [52,53] Instead of developing trees to predict an outcome the approach generates trees based on the treatment effect within each node. The treatment effect in this study was the difference in the pre-post effect for the bereaved compared to the pre-post effect for the not-bereaved within each node. Heterogeneity is captured because each split within a causal tree is based on the threshold for a given covariate that would maximize the difference in the treatment effects of the two sub nodes.

For this approach 2,000 trees were developed with a threshold of 10 observations or less to stop the splitting process for each node. The R package "grf" was used. This package also adjusted for differences in the predicted probability of treatment by transforming the bereavement indicator to be the bereavement indicator minus the probability of bereavement. Running the model with this transformed indicator is similar to using an inverse probability of treatment weighting when measuring the effect. [52]

Parametric regression models were considered but not used to measure the overall effect of bereavement on different expenditure outcomes. The main reason for this was because some of the outcomes have atypical distributions that do not fit within the assumptions of generalized linear models. Most of the cost outcomes would require a two-stage hurdle model and some would also require additional transformations of the outcome. These approaches would have complicated the interpretation of the outcome. Parametric regression models can include

heterogeneous effects, but are not designed to identify the heterogeneity as is possible with the

causal forest method used.

Table II-2. Sample Size by Outcome Among Adult Relationship Categories

Expenditure Outcomes	Adults Whose Spouse Was Hospitalized				Adults Whose Child Was Hospitalized			
	Bereaved		Not Bereaved		Bereaved		Not Bereaved	
	Sample with Common Support	No Common Support (Excluded)	Sample with Common Support[a]	Common Support & No 0 Propensities[b]	Sample with Common Support	No Common Support (Excluded)	Sample with Common Support[a]	Common Support & No 0 Propensities[b]
Overall	1,143	52	112,429	17,067	195	102	42,011	5,814
Inpatient or emergency room	1,141	54	112,427	18,349	168	129	41,994	5,407
Outpatient grief-related	1,095	100	112,369	14,449	151	146	41,964	4,695
Outpatient mental or substance use expenditures, no grief diagnosis	1,097	98	112,431	16,599	145	152	42,002	4,868
Other outpatient	1,147	48	112,440	16,603	181	116	42,060	5,491
Medications	1,153	42	112,363	18,050	235	62	41,969	6,404

[a]This was the comparison group in the causal forests. [b]Individuals with a propensity score of zero were excluded from the propensity weighted analysis

Table II-3. Sample Size by Outcome Among Child Relationship Categories

Expenditure Outcomes	Children Whose Parent Was Hospitalized				Children Whose Sibling Was Hospitalized			
	Bereaved		Not Bereaved		Bereaved		Not Bereaved	
	Sample with Common Support	No Common Support (Excluded)	Sample with Common Support[a]	Common Support & No 0 Propensities[b]	Sample with Common Support	No Common Support (Excluded)	Sample with Common Support[a]	Common Support & No 0 Propensities[b]
Overall	235	404	47,536	6,639	99	140	24,953	3,191
Inpatient or emergency room	224	415	47,519	6,539	138	101	24,999	4,144
Outpatient grief-related	261	378	47,590	6,820	90	149	25,017	3,044
Outpatient mental or substance use expenditures, no grief diagnosis	295	344	47,653	8,137	150	89	24,980	4,257
Other outpatient	352	287	47,548	8,888	127	112	25,061	3,833
Medications	251	388	47,548	7,243	201	38	24,949	4,200

[a]This was the comparison group in the causal forests. [b]Individuals with a propensity score of zero were excluded from the propensity weighted analysis

Results

Unadjusted Trend Analysis

The four family relationship types showed very different trajectories in their overall monthly expenditures. Adults whose spouse died showed the clearest increase in medical expenditures in the year following the death (Figure II-1). There were two major peaks in expenditures following the death, one at three months and another at seven to eight months. Adults whose child died showed substantial increases in expenditures the first three months after death; however, they also had an increase in expenditures in the third and fourth months before the death of the child (Figure II-2). Children whose parents died had highly variable costs in the year before and after, fluctuating up to $200 on average per month, with no apparent trend over time except for a potential decline near the end of the year after the death (Figure II-3). Children whose sibling died had some increases in expenditures around the time of the death and then large increases at the very end of the year following the death (Figure II-4). Across all relationship groups and months there were large 95% confidence intervals that most often overlapped with the estimates for the not bereaved group.

Figure II-1. Unadjusted Trend Analysis of Average Monthly Medical Expenditures for the Bereaved and Not Bereaved Family Members Among Adults Whose Spouse Was Hospitalized
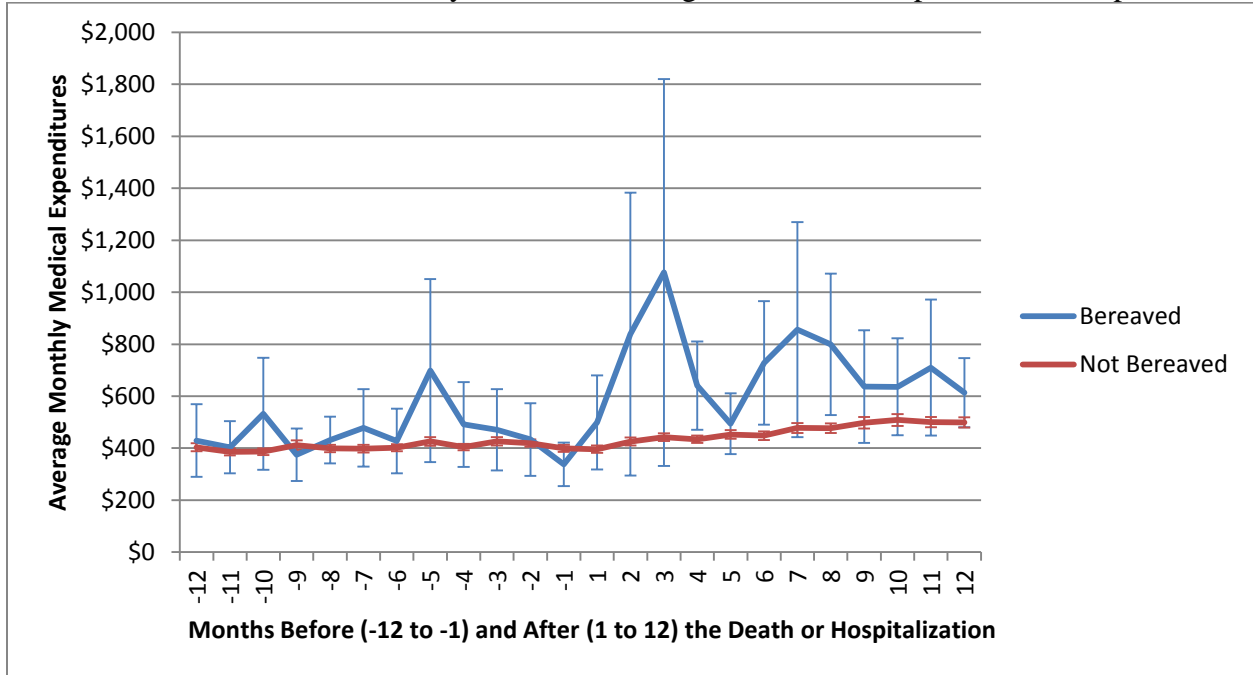
 Note: The error bars are 95% confidence intervals around the mean. See Appendix A for trends among the other outcomes. Adults were ages 19 to 64.

Figure II-2. Unadjusted Trend Analysis of Average Monthly Medical Expenditures for the Bereaved and Not Bereaved Family Members Among Adults Whose Child Was Hospitalized
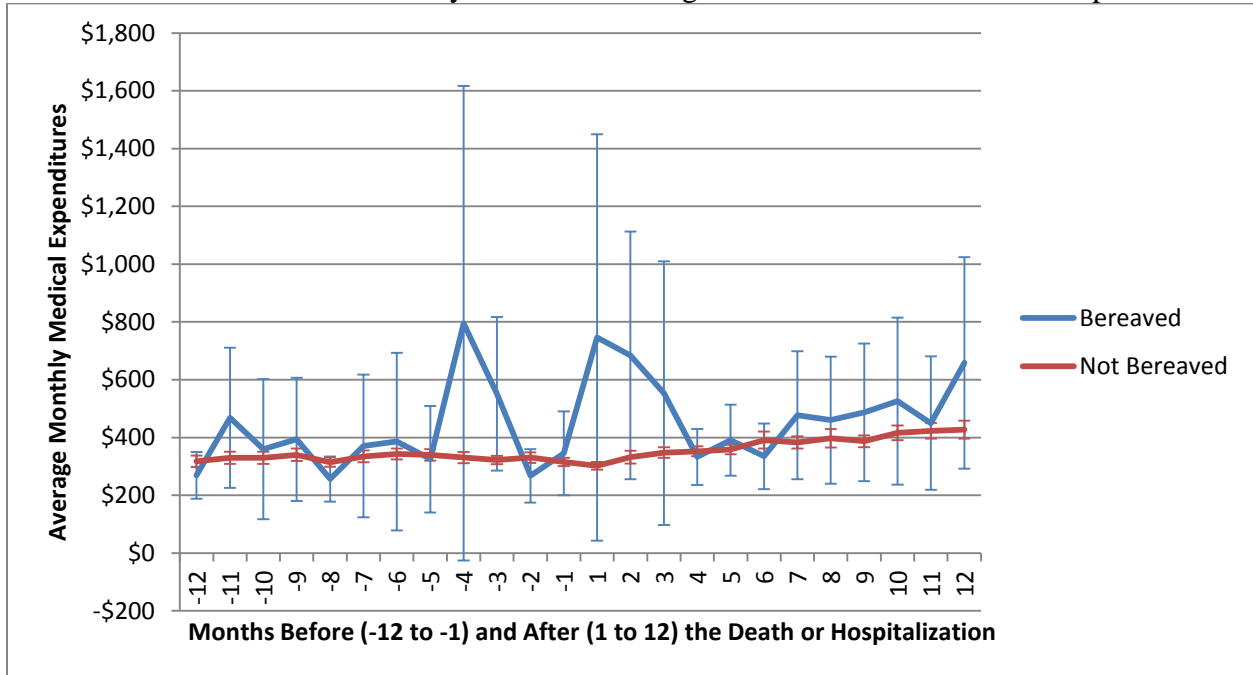
Note: The error bars are 95% confidence intervals around the mean. See Appendix A for trends among the other outcomes. Adults were ages 19 to 64. Children were ages 1 to 24.

Figure II-3. Unadjusted Trend Analysis of Average Monthly Medical Expenditures for the Bereaved and Not Bereaved Family Members Among Children Whose Parent Was Hospitalized
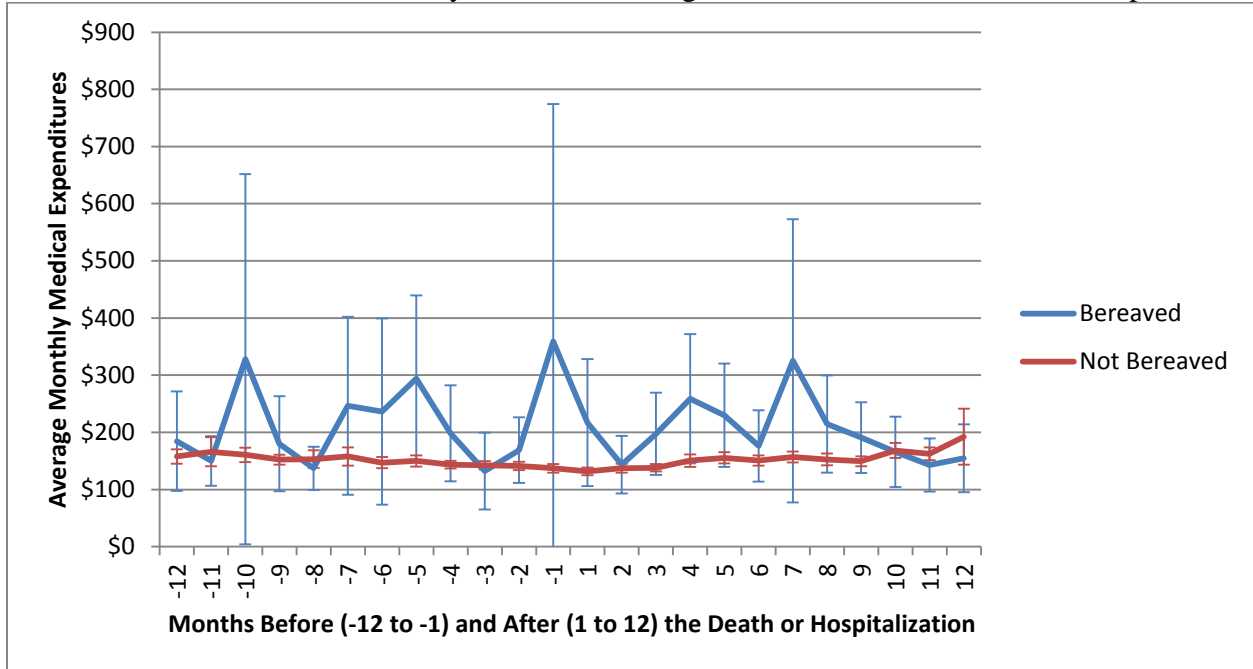
Note: The error bars are 95% confidence intervals around the mean. See Appendix A for trends among the other outcomes. Children were ages 1 to 24. Adults were ages 19 to 64.

Figure II-4. Unadjusted Trend Analysis of Average Monthly Medical Expenditures for the Bereaved and Not Bereaved Family Members Among Children Whose Sibling Was Hospitalized
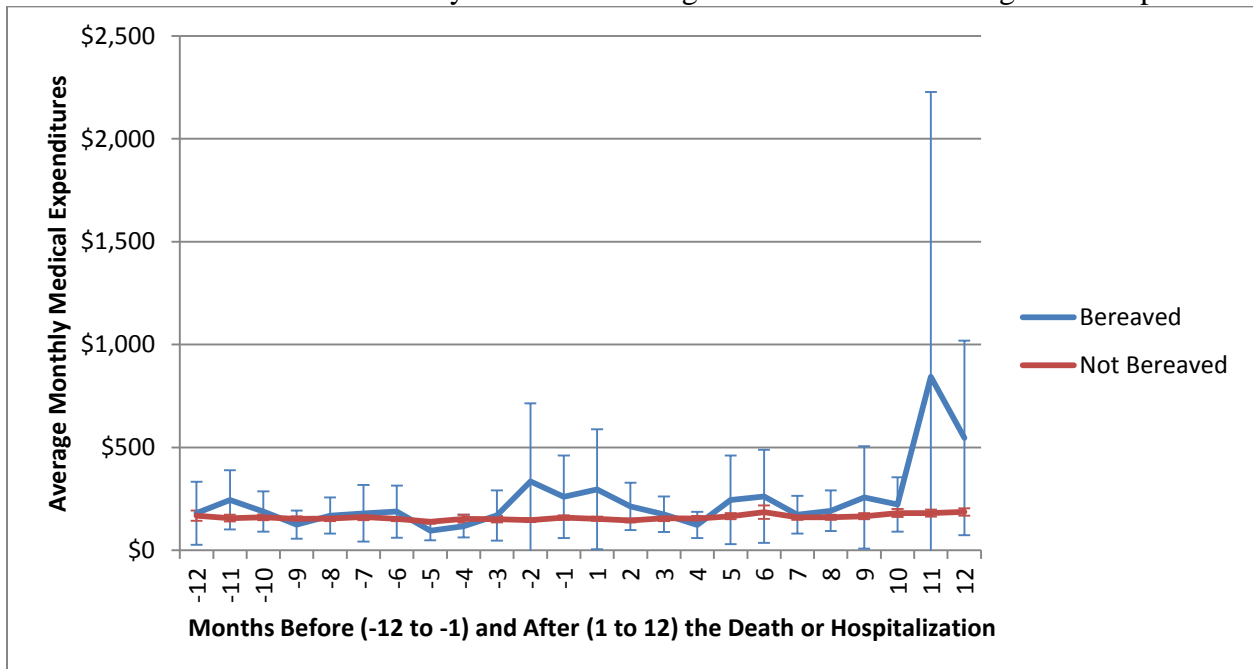
Note: The error bars are 95% confidence intervals around the mean. See Appendix A for trends among the other outcomes. Children were ages 1 to 24.

Comparison of Baseline Characteristics

There were significant differences in baseline characteristics between the bereaved and not bereaved groups (Table II-4). The proportion of males was higher among bereaved than not bereaved for the adults whose spouse was hospitalized; however, among all other relationships there were no significant differences between the subgroups. Across all relationship types the bereaved group had a higher average age than the not bereaved group, were more likely living in the South, and the primary beneficiary of the family insurance was retired or on disability leave. These differences were evidence for the need to do further adjustments to control for potential confounding.

Effect of Bereavement Without Heterogeneity

Total medical expenditures in the year following the event increased by $496 (p=0.018) for the bereaved spouses compared to the not-bereaved spouses (Table II-5). The largest contributors to the overall increases were from increases in inpatient or emergency room services ($186 on average, p=0.026) and increases in other outpatient services not related to grief or mental or substance use disorders ($130 on average, p=0.015). Increases in grief-related outpatient expenditures were only $9 on average (p<0.001).

The impact on parents whose child died varied largely by cost outcome, with an overall statistically nonsignificant increase of $225 (Table II-5). Bereaved parents did experience a significant average increase of $52 for outpatient mental or substance abuse services (p=0.023) and $307 in outpatient expenditures not related to grief or mental or substance abuse services (p=0.026).

Children whose parent died experienced an average decrease of $334 in total medical expenditures compared to the not-bereaved children (p=0.032) (Table II-5). Despite the

significant decreases overall and for most subcategories of medical expenditures, bereaved children did experience a small but significant increase of $37 per child for medication expenditures (p=0.041).

Children whose sibling died did not experience significant changes overall ($238, p=0.197) (Table II-5). They did, however, experienced a statistically significant average increase of $26 in outpatient mental health or substance abuse expenditures compared to not-bereaved children (p=0.026).

Effect of Bereavement with Heterogeneity

The estimates accounting for heterogeneity had very large standard errors (Table II-6). Changes in medical expenditures from year to year are highly variable and hard to predict with precision. The causal forest approach that measures the effect at small nodes within each tree significantly decreases the precision of the estimates. As a result, statistically significant changes in the total medical expenditures were not observed using this approach.

Table II-4. Comparison of Baseline Characteristics Among the Bereaved and Not Bereaved by Relationship Type to the Hospitalized

Characteristics	Adult Whose Spouse Was Hospitalized		Adult Whose Child Was Hospitalized		Child Whose Parent Was Hospitalized		Child Whose Sibling Was Hospitalized	
	Bereaved	Not Bereaved	Bereaved	Not Bereaved	Bereaved	Not Bereaved	Bereaved	Not Bereaved
Number of individuals	1,195	111,297	297	41,831	639	47,304	239	24,871
Male	53%	76%	46%	48%	51%	51%	54%	51%
Female	47%	24%	54%	52%	49%	49%	46%	49%
P-value	<0.001		0.395		0.870		0.319	
Average age	53.7	46.5	45.9	42.1	14.8	12.2	13.2	11.2
P-value	<0.001		<0.001		<0.001		<0.001	
Living in Northeast region	13%	14%	8%	15%	13%	15%	9%	15%
Living in North Central region	23%	26%	24%	25%	23%	24%	21%	26%
Living in the South region	45%	40%	44%	38%	43%	37%	41%	37%
Living in the West region	18%	20%	25%	21%	20%	24%	29%	21%
Unknown region	0%	0%	0%	1%	1%	1%	0%	1%
P-value	0.006		0.002		0.033		0.001	
Primary beneficiary works full-time	77%	87%	89%	94%	90%	94%	91%	95%
Primary beneficiary works part-time	2%	1%	2%	2%	2%	2%	3%	2%
Other employment status of primary beneficiary[a]	21%	12%	9%	4%	8%	4%	6%	3%
P-value	<0.001		<0.001		<0.001		0.0035	

[a]Other employment status includes retired or on disability leave. Note: A Chi-Squared test was used to compare categorical variables by bereavement status. A t-test with pooled variance was used to compare the average age by bereavement status. Adults were ages 19-64 and children were ages 1-24.

Table II-5. Effect of Bereavement on Medical Expenditures, Not Accounting for Heterogeneity

Expenditure Outcomes	Adult Whose Spouse Died		Adult Whose Child Died		Child Whose Parent Died		Child Whose Sibling Died	
	Effect	P-Value	Effect	P-Value	Effect	P-Value	Effect	P-Value
Overall	$496	0.018	$225	0.086	-$334	0.032	$238	0.197
Inpatient or emergency room	$186	0.026	-$715	0.236	-$57	0.062	-$136	0.223
Outpatient grief-related	$9	<0.001	$7	0.048	$1	0.462	$2	0.134
Outpatient mental or substance use expenditures, no grief diagnosis	$33	0.001	$52	0.023	-$17	0.481	$26	0.026
Other outpatient	$130	0.015	$307	0.026	-$458	0.782	-$222	0.994
Medications	$115	0.150	$54	0.714	$37	0.041	$4	0.620

Note: Effects were estimated using the difference in weighted means based on inverse probability of treatment weighting. P-values were estimated using a non-parametric Mann-Whitney U test. Each effect was estimated separately using a separate set of potential confounders and a unique subset of observations; thus, the subcategories of cost do not sum to the overall effect. Adults were ages 19-64 and children were ages 1-24.

Table II-6. Effect of Bereavement on Medical Expenditures, Accounting for Heterogeneity

Expenditure Outcomes	Adult Whose Spouse Died		Adult Whose Child Died		Child Whose Parent Died		Child Whose Sibling Died	
	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.
Overall	$1,562	$1,578	$1,882	$1,061	-$192	$374	-$8	$1,097
Inpatient or emergency room	-$182	$849	-$599	$311	-$110	$220	$666	$875
Outpatient grief-related	$61	$56	$739	$348	-$1	$54	-$29	$43
Outpatient mental or substance use expenditures, no grief diagnosis	$842	$712	$705	$514	-$213	$260	$598	$440
Other outpatient	$62	$89	$93	$173	$15	$51	$9	$53
Medications	$6	$6	$11	$3	-$1	$3	$16	$16

Abbreviation: S.E., standard error. Note: effects were measured using causal forest model with a double-robust style average treatment effect estimator.[52,54] Each effect was estimated separately using a separate set of potential confounders and a unique subset of observations; thus, the subcategories of cost do not sum to the overall effect. Adults were ages 19-64 and children were ages 1-24.

Discussion

This study examined nuances in the ways that grief and bereavement impose an economic burden on the healthcare system in the US. Only a small part of the increases in expenditures were from services where grief was documented in the medical claims records. The majority of the increases were from inpatient or emergency services and outpatient services not related to recorded mental or substance use disorders.

Some potential causes for these increases in medical expenditures include somatization of psychological distress, poor self-care during a time of bereavement, postponing of needed medical attention, and unhealthy coping behaviors such as heavy alcohol use or social withdrawal.[4,40,55–58] Testing these potential causes for increases in medical expenditures was beyond the scope of this analysis. These potential causes may, however, have a larger impact among vulnerable populations and those with pre-existing health conditions. In this study, the group that experienced the largest increases was adults whose spouse died, which also was the oldest group with the greatest likelihood of pre-existing health conditions. A recent study using Medicare claims among adults 65 and older found increases of $5,310 over two years following the death of a spouse in the hospital compared to those whose spouse died outside the hospital.[43]

Among younger children whose parent died, they experienced small but significant decreases in health expenditures. These decreases seemed to happen more frequently in the latter half of the first year after the parent's death. One potential explanation for this decrease is that when the surviving parent returns to work following the death of a spouse, they may have less time and resources to devote to their child's health care needs.

This study is the first in the US to use insurance claims data to examine changes in medical expenditures related to bereavement among those less than 65 years old. There are only

two previous US studies on the impact of bereavement on medical expenditures or on utilization among those younger than 65. Both pertained to bereaved parents. One study found that bereaved parents had self-reported increases in out-of-pocket prescription costs.[38] The second US study found that within 6 months to 6 years of a child's death, 62% of the sample received some form of talk therapy and 41% received some medication for their grief and mental health.[59]

Most previous studies on the impact of bereavement on medical expenditures and utilization have been conducted in other nations. Regarding spousal bereavement, multiple studies in the UK and Denmark have found increases in prescriptions, outpatient visits, and length of hospital stays.[39,60,61] This study found increases in medication expenditures for bereaved spouses; however, due to the high variation among participants, the change was not statically significant. The other changes found in outpatient visits and hospitalizations were consistent with the findings from other countries.

Among children and youth that are bereaved, researchers in Canada found increases in the likelihood of physician visits for any condition and also specifically for mental illness.[62] Researchers in the UK also found increases in outpatient visits among children whose parent died. [63] This study did not identify similar changes, except for the fact that there were small but statistically significant increases in outpatient mental health or substance use expenditures for children whose sibling died. An effect in this direction may have been obscured by the large variability in the outpatient expenditures of children in this study.

One major difference in examining healthcare expenditures during a time of bereavement in the US compared to other developed countries is the instability of health insurance during this time in the US. In the identification of the study population for this analysis, approximately two thirds of the bereaved family members in the dataset were excluded due to a change or disruption

in their health insurance plan. Had the death not occurred, we would have anticipated an exclusion of about half of the population due to typical discontinuities in health insurance over a two-year period. These discontinuities limit the generalizability of the findings. This also implies that there may be increased challenges with access to care during a time of bereavement. This change in access to care could potentially reduce utilization and expenditures among the bereaved; however, at the same time may result in the delay of needed care, contributing to poorer health outcomes and the need for emergency care.

There are several important limitations to this study. The study was limited in scope to deaths in US hospitals and may not be generalizable to deaths outside US hospitals. The identification of death and the assignment of dates of death based on discharge status and date of discharge were not validated identifiers of death. It would be useful to replicate this study with a claims database that has family linkages and linkages to validated records of deaths inside and outside the hospital.

This study was also limited to only those deaths where there was a strong common support, or sufficient number of individuals who did not die but had a similar likelihood of death. It is hard to establish a true counterfactual for the bereaved group, and it is unclear whether situations where the death of a family member is imminent would result in larger changes in costs compared to situations where the death is less certain.

The use of the causal forest method was a novel approach to identifying heterogeneous effects, but it yielded large standard errors of the estimates. The effects may have been more precise if the outcome was the quantity of medical services rather than expenditures.

The trend analysis revealed potential increases in expenditures for the bereaved during the year before the death. This was particularly evident in the two adult groups. This means that

the effect measured in this study was diminished due to the difference-in-differences study design. It could also potentially undermine the causal interpretation of the changes in medical expenditures reported in this study. An alternative approach for future analyses could be a difference-in-differences estimation using the 7 to 12 months prior the event as the baseline and two time periods as comparisons: the 1 to 6 months prior to the event, and the year after. This would allow for an estimate of costs leading up to the death and an estimate of costs following the death. Some limitations to this approach, however, are less stability or precision in the estimate and potential bias from the impact of seasonal patterns on healthcare costs since the baseline would only use six months rather than a year of expenditures.

Future studies need to explore in greater detail which of the increases in costs could potentially be offset from better care and support following grief. Future studies could also explore how grief and bereavement are documented in medical records, and how improving the identification and documentation of bereavement influences medical expenditures. Finally, more needs to be studied and examined regarding disruptions in insurance and access to health care services in the U.S., particularly among children, during a time of bereavement.

In conclusion, the impact of bereavement on medical expenditures among those less than 65 years old is statistically significant for many cost outcomes, but modest in magnitude. The amount that could be potentially offset with effective interventions in this younger population is likely minimal. This suggests that from a healthcare perspective, if grief support must lead to net cost savings over one year, interventions should be very low-cost. Outside of healthcare, and beyond a one-year time period, there still are substantial ways in which a death impacts the quality of life and productivity of surviving family members. These impacts may have greater

weight than medical expenditures alone in determining the value and benefit of investing in grief

support services within the healthcare industry.

CHAPTER III: The Prevalence and Impact of Knowing Someone Who Died by Suicide

Introduction

Suicide is the tenth leading cause of death in the US.[64] In 2016 there were 44,965 suicides deaths or 13.92 suicides per 100,000 people. Suicide rates have been steadily increased since the year 2000.[64,65] Age-adjusted suicide rates have increased by 29% overall. The largest increases have been among those ages 45 to 64, with an increase of 44% since 2000. Suicide rates among adolescents and young adults ages 15 to 24 have also increased by 36% since 2007.

As the rate of suicide increases, researchers are trying to understand the impact that suicides are having on the surviving friends and family members who were aware of the death. Two nationally-representative studies have estimated the prevalence of exposure to a suicide death among adults in the US. One was conducted in 1994 and estimated the prevalence of knowing someone who died by suicide in the past year to be 7.0%.[66] The other was conducted in 2016 and published recently, finding that 51% of the population had been exposed at any time in their life to a suicide death, and 35% experienced some amount of emotional distress from the death.[67] Other non-nationally representative studies have found lifetime exposure to be 57% among Veterans, 40% to 48% among Kentucky residents, and 32% in a nationwide poll.[68–71]

There have been fewer analyses quantifying the prevalence of exposure to a suicide death among adolescents in the US. Only two analyses have been conducted, and both were based on the same study from 1995 to 1996 that was nationally-representative of adolescents in school.[72,73] These analyses found that 4.4% had been exposed to a peer's or family member's death in the

past year and 19.4% had been exposed to a peer's or family member's suicide attempt in the past year. No estimates have ever been generated in the US to understand lifetime exposure to suicide deaths or attempts among adolescents.

The different levels of effect experienced by those who know someone who died by suicide have been described on a continuum ranging from exposed, to affected, to bereaved.[74] Another distinction that is often used is that of being a survivor of suicide loss, or one whose life has been personally affected by suicide.[33,74,75] Those affected by another's suicide death experience significant mental, physical and social health impacts.[22,24,26,27,40,76–79] These impacts have even been shown to be more substantial than those who are bereaved by other causes of death.[27,34,80] Studies have also shown that those affected by a suicide death have high rates of complicated grief, or the situation where complications have prevented an individual from recovering properly from the acute phase of grief.[21–25,41] No studies, however, have examined the national prevalence of complicated grief among those who know someone who died by suicide in the US. Studies have also not quantified at a national level the self-reported ways in which the lives of those exposed to a suicide death have permanently changed.

One approach to measuring and comparing different health experiences and health impacts is the construct of health utility. This measure quantifies peoples' preferences for a given health experience on a scale where 0 represents being dead or something equivalent to dead and 1 represents perfect health.[81] There are many different approaches to directly and indirectly measuring health utility. Direct methods include the standard gamble and time trade-off approaches.[82] The standard gamble approach would not be appropriate to ask among those bereaved by suicide, because it asks respondents to consider taking a gamble on living with perfect health or immediately dying. The time trade-off question may be more appropriated, but

may still be challenging for those experiencing grief because they are asked to trade-off time from the end of their life to be healed from their current health problems. Indirect measures of health utility ask respondents about their functionality and health in different domains or attributes of life (e.g. mobility, self-care, pain, sleeping, depression, etc.).[83] These measures are also known as multiattribute utility instruments.[83–85] Individual's responses across the different domains or attributes are converted to utility estimates using a formula or set of weights or tariffs that have previously been fitted to measurements of utility using one of the two direct approaches. Only one study, a cost-effectiveness analysis in Australia, has quantified the health utility among those who knew someone who died by suicide.[86] It used the indirect measure of the EuroQol 5 dimensions (EQ-5D). Better understanding the health utility of those who know someone who died by suicide in the US can allow for comparisons to many other health experiences, and can establish necessary information for conducting cost-effectiveness analyses that account for all the spillover impact of a suicide death.

The purpose of this study was to examine the prevalence and impact of knowing someone who died by suicide in the US. This study expands on previous studies by examining the lifetime prevalence in both adults and, for the first time at a national level, adolescents ages 15 to 17. It identifies the domains of life in which individuals feel temporarily and permanently changed by the suicide. It measures the prevalence of complicated grief and the health utility of those exposed. It also compares the characteristics and impacts among those who said they were a survivor of suicide loss to those who were not.

Methods

A US nationally-representative survey was conducted to understand the prevalence and impact of knowing someone who died by suicide. The development, fielding, and analysis of this

survey were funded primarily under a pilot grant from the American Foundation for Suicide

Prevention, with some additional funding from the University of Michigan Rackham Graduate

Student Research Grant, and the Health Management and Policy Hammel Award. I contracted

with the National Opinion Research Center (NORC) to field the survey. The work was approved

by the University of Michigan Health Sciences and Behavioral Sciences Institutional Review

Board (IRB) (FWA00004969; IORG00000245) and the NORC IRB (FWA00000142;

IORG0000631).

Survey Sample

A general population sample of US adults ages 18 and older was selected from NORC's

AmeriSpeak® Panel (https://amerispeak.norc.org). A second sample of adults in the

AmeriSpeak Panel with a child age 15 to 17 living in the same household was selected. The

AmeriSpeak Panel is a probability-based survey panel that is representative of the US household

population.[87] The survey sample for the present study was selected from the AmeriSpeak panel

using sampling strata based on age, race and Hispanic ethnicity, education, and gender. If more

than one adult or child was eligible per household, then only one was randomly selected to

participate. Adults who said they knew someone who died by suicide and consented to

participate were enrolled in the study. Parents of adolescents gave consent for their children to

participate then passed the survey to their child. Adolescents who assented and said they knew

someone who died by suicide or attempted suicide were enrolled.

Survey Development and Content

Prior to the fielding of the survey, 14 cognitive interviews were conducted among a

convenient sample of adults who knew someone who died by suicide. These interviews were

designed to solicit input and understand the cognitive process of individuals as they took the survey. Feedback was incorporated to refine the survey instrument. Two mental health providers that work with adolescents also reviewed and provided feedback on the adolescent survey. The survey was much shorter among adolescents in order to minimize burden and maximize participation. The finalized survey instrument for the adults and adolescents is provided in Appendix B.

The survey for adolescents included questions about gender identity and sexual orientation, whether they considered themselves a survivor of suicide loss or someone whose life had been personally affected by a suicide (this was only asked to those who knew someone who died from suicide and included five responses ranging from definitely yes to definitely not); the level of effect the suicide death or attempt had on the respondent (five responses ranging from no effect to extreme effect); whether the suicide death or attempt had an effect on overall emotional, mental, or physical health at any time, and if so for how long (less than six months, six months to a year, more than a year, or health is still affected); whether they felt "changed for a time" or "changed permanently" in eight domains of life (mental focus, emotionally, socially, life goals, physically, spiritually, and work or school productivity); questions from the standardized measure known as the EuroQol 5 dimensions (EQ-5D) youth version;[88] and preferences for participating in an online social network or support group specifically for those that know someone who attempted suicide, died by suicide, or that care about suicide prevention in general. Adolescents were invited to respond about the suicide death that had the greatest impact on their life or, if they did not know someone who died by suicide, the suicide attempt that had the greatest impact.

Adults were asked all the same questions as adolescents; however, they were given the adult version of the EQ-5D which can be used to generate a health utility score.[89,90] The EQ-5D was used, as opposed to other indirect measures of health utility, because it is one of the shortest measures of health utility and it was used in the only other study that has measured health utility among those experiencing suicide-related bereavement.[83,86] Time trade-off questions were also asked to directly elicit health utility among those who said their health was currently affected by the suicide.[81,91] This allowed for comparisons between the two approaches to measuring health utility, and for an exploration of the feasibility of directly measuring health utility among the bereaved (see Chapter IV for the comparisons and analyses). Adult survey respondents were also asked the Brief Grief Questionnaire as a measure of complicated grief;[41,92] questions about the type of relationship, level of stress, and level of connectedness to the deceased individual; mental health or drug use problems prior to the death for both the respondent and the decedent; suicidal ideation of the respondent before and after the death; a retrospective rating of health before and at different time intervals after the suicide; barriers to talking about their bereavement experience with others; barriers to seeking professional help with their bereavement experience; and utilization of online social networks or online support groups to share about their bereavement experience. Adult respondents were asked about the number of people they knew who died by suicide, how many deaths happened in the past 10 years, whether the most recent suicide was the one that affected them the most, and the level of effect for the most recent suicide; but for all other questions they were asked to respond about the suicide that had the greatest impact in their life.

The study was fielded to an initial sub-sample on January 9, 2018 and then the remaining sample on January 12, 2018. The initial sub-sample was sent a reminder on January 12th and all were sent a reminder on January 15th. The survey closed on January 25, 2018. The study was offered in English and Spanish by phone and through an online platform. Adults were compensated $3 for completing the survey and adolescents were offered a $5 Amazon gift card for completing the survey.

Survey Response

There were 5,270 adults invited to participate and 1,294 (25%) answered the screening question (Table III-1). Among those screened, 785 consented to participate and 776 individuals knew someone who died by suicide. 666 of these exposed individuals completed the full adult survey.

There were 2,858 families with adolescents invited to participate and 390 parents (14%) engaged in the screening and consent process. Of these 390 parents, 160 or 41% said that they knew their child was aware of the suicide death or attempt of another, and 336 or 86% gave consent for their child to participate. A chi-squared test found that there was no significant difference in the likelihood of knowing their child had been exposed and allowing them to participate in the study (p=0.941). There were 198 adolescents ages 15-17 who knew someone who attempted or died by suicide and started the survey, and 180 of them completed the survey.

Table III-1. Survey sample, screening, and completion numbers and rates

Survey Population	Sampled/ Invited Panelists	Screening Interviews Completed	Screener Completion Rate	Panelists Eligible for Interview	Incidence/ Eligibility Rate	Survey Interviews Completed	Interview Completion Rate
Adults	5,270	1,294	25%	785	61%	666	85%
Adolescents	2,858	336	12%	198	59%	180	91%

Survey Weights

Survey weights were generated to adjust for non-response rates and to better approximate national representativeness of the target population. The inverse probability of selection from the NORC National Frame (the sampling frame used to enroll participants in the AmeriSpeak panel) was used and adjusted to account for unknown eligibility and nonresponse among eligible households. This weight was combined with probability weights for being selected from the AmeriSpeak panel into the present study sample. The weights were further adjusted based on non-response to the screener questions and non-completers of the survey. Further details are provided in Appendix C.

Analysis Plan

The percent distributions for categorical variables and the averages for continuous variables were calculated using the national weights. Missing responses were included as a separate category when analyzing categorical variables; however, they were excluded from analyses of continuous variables.

Among adolescent respondents, the national prevalence of knowing someone who died by suicide or attempted suicide was provided by NORC. From the data received, I performed descriptive analyses among the 180 survey completers regarding the level of impact of the suicide or suicide attempt. Due to insufficient power (power<0.6), no statistical analyses were

done to compare those who knew someone who died by suicide vs. those who knew someone who attempted suicide.

Among adults, I compared the demographic profile of those who knew someone who died by suicide to those who did not know anyone who died by suicide or attempted suicide. This was done using pre-recorded demographic characteristics among all AmeriSpeak panel members. I also compared demographic characteristics and the level of impact between those who said they "probably" or "definitely" were a survivor of suicide loss and those who were not but had still been exposed to a suicide death.

A Chi-Squared test was used for categorical comparisons, and for the continuous outcome of household size I used a two-sample t-test with pooled variance. For comparisons of health utility, as measured by the EQ-5D, a Kolmogorov-Smirnov test of unequal variance was used. Additional analyses regarding the characteristics of the suicide decedents, barriers to receiving formal and informal support, the use of online social networks to share their experiences and get support, and preferences for an online social network or support group for suicide prevention are provided in Appendix D and Appendix E.

Results

Adolescents Knowing Someone Who Died by Suicide or Attempted Suicide

Based on responses from the 336 adolescents who were screened, 44% of 15 to 17 year olds knew someone who died by suicide and an additional 17% knew someone who attempted suicide but did not know anyone who died by suicide. These individuals were most commonly male (51%), heterosexual (83%), white (54%), in a household with married parents (62%), and in a household with an income of less than $50,000 (42%) (Table III-2).

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Table III-2. Characteristics of Adolescent Respondents Who Knew Someone Who Died by Suicide or Attempted Suicide

Characteristics	n	Weighted Estimate
Age		
15	67	32%
16	52	42%
17	61	27%
Gender (reported by parent)		
Male	89	51%
Female	90	47%
Adolescent does not identify with either gender	1	2%
Sexual orientation (reported by adolescent)		
Heterosexual	156	83%
Homosexual or bisexual	15	10%
Not sure or declined	9	7%
Race and ethnicity		
White, non-Hispanic	94	54%
Black, non-Hispanic	28	13%
Other, non-Hispanic	18	9%
Hispanic	40	24%
Region		
Northeast	23	18%
Midwest	59	26%
South	59	32%
West	39	24%
Marital status of parent or guardian		
Married	108	62%
Divorced or separated	35	20%
Never married	24	12%
Living with partner	13	7%
Household income		
Less than $50,000	76	42%
$50,000 to $99,999	61	34%
$100,000 or more	43	24%
Average household size	180	4.55

Note: There were 180 adolescents who were exposed to a suicide death or attempt and completed the survey. Estimates were weighted to account for non-response and be nationally representative.

The impact of the suicide deaths and attempts among adolescents is provided in Table III-3. Approximately a quarter of exposed adolescents said that the death or attempt had a large or extreme effect; and among those who knew someone who died by suicide, 37% said that they "definitely" or "probably" were a survivor of suicide loss. Thus at a national level, 16% of all

adolescents ages 15 to 17 (37% times the 44% exposed to suicide) consider themselves survivors of suicide loss.

The death or attempt had an effect on the overall health of 59% of exposed adolescents. 21% of adolescent respondents said that their health was affected for 6 months or more, and another 12% said their health was affected at the time of the survey (Table III-3). Thus, at a national level, approximately 7% of adolescents (12% times the 61% exposed to an attempt or death) said their health was currently affected.

Among those still impacted by the suicide death or attempt, responses to the EQ-5D youth version showed that adolescents' current health was most affected in the domain of feeling worried, sad, or unhappy (Table III-3). An estimated 13% of those currently affected said they were very worried, sad, or unhappy; while 85% said they were a bit worried, sad, or unhappy. 68% of respondents also said that they have some pain or discomfort.

Table III-3. Impact from the Suicide Death or Attempt Among Adolescent Respondents

Measures of Impact	n	Weighted Estimate
What effect did the attempt or death have on your life?		
No effect	11	9%
Little effect	35	20%
Moderate effect	73	44%
Large effect	50	21%
Extreme effect	11	5%
Do you consider yourself a survivor of suicide loss?		
Definitely yes	30	16%
Probably yes	37	21%
Might or might not	22	17%
Probably no	16	10%
Definitely no	11	7%
Not exposed to suicide death	64	30%
Did the attempt or death have an effect on your overall emotional, mental, or physical health at any time?		
Yes	115	59%
No	65	41%
For how long was your overall health affected?		
Overall health not affected	65	41%
Less than 6 months	45	25%

Measures of Impact	n	Weighted Estimate
6 months to a year	33	15%
More than a year	15	6%
My overall health is still affected	21	12%
No response	1	1%
EQ-5D Youth *among those whose overall health is still affected (n=21)*[a]		
D1. I have no problems walking about	18	86%
D1. I have some problems walking about	3	14%
D1. I have a lot of problems walking about	0	0%
D2. I have no problems washing or dressing myself	18	88%
D2. I have some problems washing or dressing myself	3	12%
D2. I have a lot of problems washing or dressing myself	0	0%
D3. I have no problems with performing usual activities	10	53%
D3. I have some problems with performing my usual activities	10	46%
D3. I have a lot of problems doing my usual activities	1	1%
D4. I have no pain or discomfort	10	31%
D4. I have some pain or discomfort	10	68%
D4. I have a lot of pain or discomfort	1	1%
D5. I am not worried, sad, or unhappy	1	2%
D5. I am a bit worried, sad, or unhappy	17	85%
D5. I am very worried, sad, or unhappy	3	13%

[a]Health utility estimates for the EQ-5D youth version have not yet been developed. The youth version rather than the adult version was used because the language was simpler for adolescents to understand. Note: Estimates were weighted to account for non-response and be nationally representative.

The suicide death or attempt had an impact on many more domains of life than those measured in the EQ-5D (Figure III-1). 35% of exposed adolescents felt they changed permanently in some domain of their life, and 82% of exposed adolescents felt that some aspect of their life changed for a time. Also 12% of exposed adolescents, or approximately 7% of all adolescents ages 15 to 17 (12% times the 61% exposed to an attempt or death), reported being changed temporarily or permanently in all domains of their life. Adolescents most frequently experienced permanent changes in the way they felt emotionally (17%), their goals and purpose in life (17%), and their spirituality (17%). They most frequently experienced temporary changes

in how they felt emotionally (60%), how clearly they thought or focused (55%), their social life

(43%), and their sleep (41%).

Figure III-1.Perception of How Adolescent's Life has Changed as a Result of the Death or Attempt
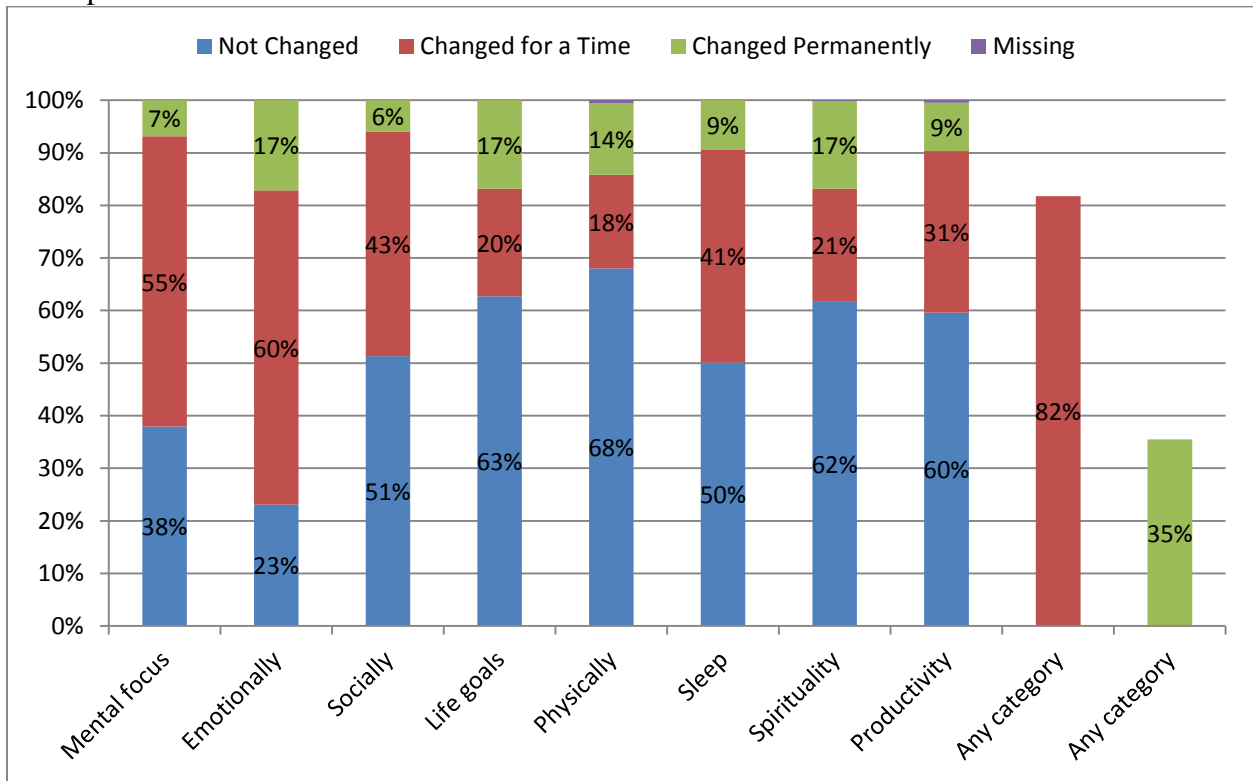
Note: Estimates were weighted to account for non-response and be nationally representative. There were also 12% who experienced a temporary or permanent change in every domain of life.

Adults Knowing Someone Who Died By Suicide

Among adults ages 18 and older in the US, an estimated 58% (95% Confidence Interval:

55% to 61%) knew someone who died by suicide and an additional 11% (95% Confidence

Interval: 9% to 13%) knew someone who attempted suicide but did not know anyone who died

by suicide. Adults knowing someone who died by suicide were significantly different in their

characteristics than those who did not know anyone who died by suicide or attempted suicide

(Table III-4). Age was significantly different (p=0.019) with a larger proportion being ages 18-29 (22% vs. 15%). Those who knew someone who died by suicide were also more likely to be white non-Hispanic (67% vs 60%, across all race and ethnicity categories p<0.001); in the Midwest region (24% vs 16%, across all regions p=0.001); have a marital status of divorced, separated, never married, or living with a partners (across all marital status categories p<0.001); and have some college education but not a BA or above (30% vs 23%, across all education categories p=0.013).

Table III-4. Characteristics of Adults Who Were Exposed to Suicide Compared to Those Who Were Not Exposed to Suicide or Suicide Attempts

Characteristics	Exposed to Suicide (n=776)		Not Exposed to Suicide or Suicide Attempts (n=356)		P-Value by Exposure to Suicide
	n	Weighted Estimate	n	Weighted Estimate	
Gender					
Male	359	48%	179	47%	0.924
Female	417	52%	177	53%	
Current age					
18-29	134	22%	48	15%	0.019
30-44	236	24%	108	29%	
45-59	203	26%	86	26%	
60+	203	28%	114	30%	
Race and ethnicity					
White, non-Hispanic	548	67%	209	60%	<0.001
Black, non-Hispanic	59	8%	54	19%	
Other, non-Hispanic	70	7%	29	6%	
Hispanic	99	17%	64	15%	
Region					
Northeast	119	18%	54	16%	0.001
Midwest	235	24%	84	16%	
South	239	34%	139	45%	
West	183	23%	79	22%	
Marital status					
Married	326	45%	168	47%	<0.001
Widowed	27	3%	21	9%	
Divorced or separated	148	20%	64	18%	
Never married	200	24%	80	22%	
Living with partner	75	10%	23	5%	
Education					
No high school diploma	35	10%	23	15%	0.013
High school graduate or equivalent	149	30%	70	28%	

Characteristics	Exposed to Suicide (n=776)		Not Exposed to Suicide or Suicide Attempts (n=356)		P-Value by Exposure to Suicide
	n	Weighted Estimate	n	Weighted Estimate	
Some college	344	30%	132	23%	
BA or above	248	31%	131	35%	
Household income					
Less than $50,000	374	50%	170	51%	0.178
$50,000 to $99,999	246	29%	123	32%	
$100,000 or more	156	22%	63	17%	
Household size	776	2.6	356	2.5	0.184

Notes: These were among all individuals who were screened as to whether or not they knew someone who died by suicide. Four of the 1296 people did not answer the questions about knowing someone who died by suicide or attempted suicide. Estimates were weighted to account for non-response and be nationally representative. P-values were calculated using a weighted Chi-squared test for categorical variables. For the household size variable a weighted t-test with pooled variance was used.

Adult survey respondents on average knew two people who died from suicide, with 71% of them saying that the most recent suicide was the most impactful (Table III-5). The average time since the most impactful suicide was 10 years. An estimated 12% of those who knew someone who died by suicide were experiencing complicated grief and 46% of respondents said that they "definitely" or "probably" were a survivor of suicide loss. By multiplying these percentages by the estimated adult prevalence of suicide exposure, 7% of adults in the US were estimated to be experiencing complicated grief from a suicide death and 27% considered themselves survivors of suicide loss.

Table III-5. Timing and Reaction to Knowing Someone Who Died by Suicide

Suicide Exposure	n	Weighted Estimate
Average number of people known who have died by suicide	664	2.0
Percent who said the most recent suicide was the most impactful	466	71%
Average number of years since the most impactful suicide	650	10.0
Percentage experiencing complicated grief	65	12%
Average number of years since the most impactful suicide among those experiencing complicated grief[a]	65	8.7
Do you consider yourself a survivor of suicide loss? That is, someone whose life has been personally affected by a suicide?		
Definitely yes	113	18%
Probably yes	128	19%
Might or might not	110	17%
Probably not	167	24%
Definitely not	145	22%
No response	3	0%

[a]Complicated grief was identified among situations where the suicide death occurred 6 or more months previously and the respondent scored a 5 or more on the Brief Grief Questionnaire.[41,92]
Note: This analysis included the 666 individuals who completed the survey. Estimates were weighted to account for non-response and be nationally representative. Two individuals with missing responses were excluded from the estimate of the average number of exposures, and 16 were excluded from the average number of years since the most impactful suicide.

Table III-6 identifies characteristics that are related to self-identifying as a survivor of suicide loss. Compared to those who said they were not "definitely" or "probably" a survivor of suicide loss, those who self-identified as a survivor were more likely to be heterosexual female (55% vs 41%) or homosexual, bisexual, transgender, or not sure (11% vs 8%, across all sexual orientation and gender identity categories $p<0.001$); Hispanic (23% vs 14%, across all race and ethnicity categories $p=0.021$); divorced or separated (24% vs 16%) or living with a partner (14% vs 7%, across all marital status categories $p<0.001$); have less education (across all education categories $p=0.003$); have a lower household income (across all household income categories $p=0.001$); have a history of depression (33% vs 25%, $p=0.034$); and have a history of post-traumatic stress disorder (PTSD) (9% vs 4%, $p=0.006$).

Table III-6. Characteristics of Adults Who Said They Definitely or Probably Were a Survivor of Suicide Loss Compared to Those Who Were Not.

Characteristics	"Definitely" or "Probably" a Survivor of Suicide Loss (n= 241)		Not "Definitely" or "Probably" a Survivor of Suicide Loss (n= 422)		P-Value by Survivor Status
	n	Weighted Estimate	n	Weighted Estimate	
Sexual orientation and gender identity					
Heterosexual male	83	33%	185	48%	<0.001
Heterosexual female	132	55%	185	41%	
Homosexual, bisexual, transgender, not sure	22	11%	43	8%	
Declined	4	1%	9	3%	
Current Age					
18-29	39	19%	88	24%	0.177
30-44	66	21%	140	25%	
45-59	69	28%	108	26%	
60+	67	32%	86	26%	
Age at time of suicide					
<18	22	9%	40	11%	0.166
18-29	61	28%	156	34%	
30-44	74	29%	103	23%	
45-59	53	20%	87	21%	
60+	29	14%	29	11%	
Missing response	2	0%	7	1%	
Race and ethnicity					
White, non-Hispanic	163	62%	300	70%	0.021
Black, non-Hispanic	23	9%	30	8%	
Other, non-Hispanic	22	6%	40	8%	
Hispanic	33	23%	52	14%	
Region					
Northeast	37	20%	67	18%	0.332
Midwest	70	22%	132	25%	
South	77	37%	121	32%	
West	57	21%	102	25%	
Marital status					
Married	81	37%	192	49%	<0.001
Widowed	12	5%	10	2%	
Divorced or separated	59	24%	62	16%	
Never married	60	20%	119	26%	
Living with partner	29	14%	39	7%	
Education					
No high school diploma	11	13%	15	9%	0.003
High school graduate or equivalent	51	34%	74	27%	
Some college	120	30%	176	29%	
BA or above	59	23%	157	35%	
Household income					
Less than $50,000	135	56%	182	44%	0.001
$50,000 to $99,999	74	29%	137	30%	
$100,000 or more	32	15%	103	26%	

Characteristics	"Definitely" or "Probably" a Survivor of Suicide Loss (n= 241)		Not "Definitely" or "Probably" a Survivor of Suicide Loss (n= 422)		P-Value by Survivor Status
	n	Weighted Estimate	n	Weighted Estimate	
Household size	241	2.5	422	2.7	0.115
Mental illness or drug use problems prior to the suicide					
Depression	71	33%	95	25%	0.034
Anxiety	50	21%	77	18%	0.307
PTSD	14	9%	15	4%	0.006
Bipolar or schizophrenia	9	7%	18	5%	0.259
Alcohol use problems	19	12%	33	11%	0.676
Opioid or other drug use problems	15	10%	24	8%	0.208
No mental illness or drug use problems	144	57%	276	62%	0.194

Notes: Estimates were weighted to account for non-response and be nationally representative. P-values were calculated using a weighted Chi-squared test for categorical variables. For the household size variable a weighted t-test with pooled variance was used.

More than a quarter of exposed adults experienced a large or extreme effect from the most impactful suicide in their life, and 48% said that their overall health was affected by the death (Table III-7). 19% of exposed adults said that their emotional, mental or physical health was affected for 6 months or more. Another 9% said their health was still affected even though on average it had been 9.4 years since the suicide occurred. As expected, those who self-identified as a survivor of suicide loss were significantly more impacted by the suicide death. There were still individuals, however, who said they were "definitely" or "probably" a survivor of suicide loss but said it had little to no effect on their life (13%). Similarly, there were people who did not say they were "definitely" or "probably" a survivor of suicide loss, but still experienced large to extreme effects (13%). There did not appear to be significant differences in suicidal ideation before or after the death when comparing people in the two survivorship categories (p=0.434).

According to responses from the EQ-5D, the current health utility among those identifying as survivors of suicide loss was significantly lower than those not identifying as

survivors of suicide loss (0.787 vs 0.858, p=0.002). This difference was primarily among those

who said their overall health had been affected by the death (0.747 vs 0.808, p=0.012). Among

all adult respondents who knew someone who died by suicide, those who said their health was

currently affected or those who said there health had been affected at any time had a significantly

lower average health utility than those who said that their health had never been affected (0.666

vs 0.882, p<0.001; and 0.777 vs 0.882, p<0.001 respectively). The current health utility among

all exposed was 0.832 (Table III-7).

Table III-7. Measures of Impact Among Adults Who Knew Someone Who Died by Suicide, Overall and by Self-Identification as a Survivor of Suicide Loss

Measures of Impact	Overall (n=666)		"Definitely" or "Probably" a Survivor of Suicide Loss (n= 241)		Not "Definitely" or "Probably" a Survivor of Suicide Loss (n= 422)		P-Value by Survivor Status
	n	Weighted Estimate	n	Weighted Estimate	n	Weighted Estimate	
What effect did the death have on your life?							
No effect	60	10%	5	3%	55	14%	<0.001
Little effect	206	30%	20	10%	185	42%	
Moderate effect	246	34%	110	38%	135	31%	
Large effect	111	20%	72	34%	39	11%	
Extreme effect	39	6%	32	14%	7	2%	
Missing response	4	0%	2	0%	1	0%	
Did the death have an effect on your overall emotional, mental, or physical health at any time?							
Yes	319	48%	164	68%	152	36%	<0.001
No	345	52%	75	32%	270	64%	
Missing response	2	0%	2	1%	0	0%	
For how long was your overall health affected?							
Overall health not affected	345	52%	75	32%	270	64%	<0.001
Less than 6 months	137	20%	52	21%	84	20%	
6 months to a year	74	10%	39	13%	34	8%	
More than a year	61	9%	40	15%	21	5%	
My overall health is still affected[a]	45	9%	32	18%	13	3%	
Missing response	4	0%	3	1%	0	0%	
Suicidal ideation of the respondent before and after the death							
Ideation before and after	101	15%	41	17%	60	14%	0.434
Ideation before but not after	106	14%	43	14%	61	14%	
Ideation after but not before	40	5%	18	5%	22	5%	
No ideation before or after	412	66%	134	63%	278	67%	
Missing response	7	1%	5	1%	1	0%	
Mean current health utility[b]							
All respondents	656	0.832	234	0.787	420	0.858	0.002
When the death had no effect on overall health	343	0.882	75	0.868	268	0.886	0.980
When the death had an effect on overall health	312	0.777	158	0.747	152	0.808	0.012
P-value of affected vs. not affected	655	<0.001	233	<0.001	420	<0.001	--
When the overall health is still affected	44	0.666	31	0.653	13	0.706	0.096

Measures of Impact	Overall (n=666)		"Definitely" or "Probably" a Survivor of Suicide Loss (n= 241)		Not "Definitely" or "Probably" a Survivor of Suicide Loss (n= 422)		P-Value by Survivor Status
	n	Weighted Estimate	n	Weighted Estimate	n	Weighted Estimate	
P-Value of those still affected vs. not affected	387	<0.001	106	<0.001	281	0.008	--

[a]On average it had been 9.4 years since the suicide occurred among those whose health was still affected. [b]Health utility was measured using the EQ-5D. It is preference weighted value of health-related quality of life ranging from -0.109 to 1. Note: Estimates were weighted to account for non-response and be nationally representative. If individuals knew more than one person who died by suicide, they were asked to respond regarding the one that impacted them the most. For categorical variables P-values were calculated using a weighted Chi-squared test. For the comparisons among health utilities, a Komolgorov-Smirnov test was used.

A third of exposed adults said that some domain of their life had changed permanently as a result of the suicide, and 70% said their life had changed for a time (Figure III-2). Also 12% of exposed adults, or approximately 7% of all adults, reported being changed temporarily or permanently in all domains of their life (12% times the 58% exposed). Respondents most frequently experienced permanent changes in the way they felt emotionally (16%), their goals and purpose in life (16%), and their spirituality (16%). They most frequently experienced temporary changes in how they felt emotionally (50%) and how clearly they thought or focused (35%).

Figure III-2. Perception of How Life has Changed as a Result of the Suicide Death, Among Adults
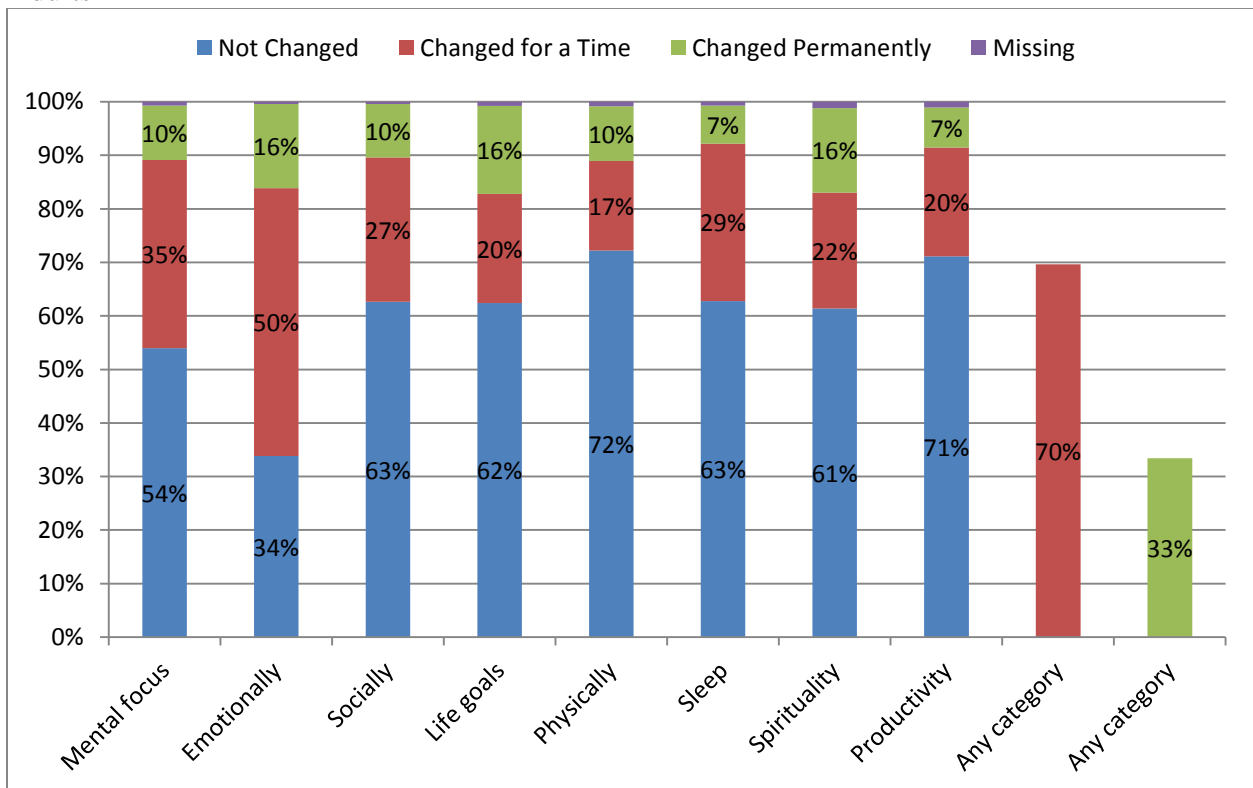
Note: Estimates were weighted to account for non-response and be nationally representative. There were also 12% who experienced a temporary or permanent change in every domain of life.

Discussion

Exposure to a suicide death is a very common experience in the US and those exposed experience substantial impacts in many aspects of their life. This study, for the first time, estimated that even at the early ages of 15 to 17 more than two fifths of adolescents knew of someone who died by suicide and about three fifths knew someone who attempted or died by suicide. Among adults, this study found lifetime exposure to a suicide death was somewhat higher than the prevalence of 51% found in 2016.[67] This could be related to the fact that suicide rates continue to rise in the US each year.[64,93]

This study has also for the first time identified the prevalence of those whose health is currently affected by a suicide exposure and, among adults, the proportion that are currently experiencing complicated grief. The estimated proportion of adults currently experiencing complicate grief from suicide is similar to the proportion of adults who experience a major depressive episode in the past year (6.7%).[94]

The only other study that has quantified the health utility among those bereaved by suicide reported a similar estimate (0.670 for those grieving) to that found in the present study (0.666 among those currently experiencing health effects from the suicide).[86] This level of health utility is similar to that of someone with type two diabetes and heart failure (0.677) or someone with post-traumatic stress disorder (PTSD) (0.630 to 0.682).[95,96]

Suicide exposure was found to impact not just the health of individuals, but all aspects of life among a substantial portion of the population. For adolescents this experience can have potential long-term impacts into adult. These long-term effects among adolescents who know someone who died by suicide have not been studied using longitudinal data; however, adolescents whose parents died by any cause experienced diminished academic accomplishments

and long-term economic disadvantages.[97] Many studies have also shown the long-term health

impacts of adverse childhood experiences (ACE).[98–103] Bereavement, however, is not included in

the original ACE questionnaire.[104]

Finally, this study provides information on the demographic profile and impact

experienced among adults who consider themselves survivors of suicide loss. Some of the

characteristics related to suicide survivorship (e.g., lower income, being divorced or separated,

history of depression or PTSD) are those that also may be related to increased vulnerability or

decreased ability to cope the with stress of bereavement.[105,106] Surprisingly, however, this study

did not find that survivors of suicide loss were more likely to report suicidal ideation after the

suicide death compared to non-survivors who were exposed. This could be related to the fact that

both groups had high prevalence of suicidal ideation even before the suicide occurred. Other

studies have shown that suicide exposure is related to increased risk of suicide death and

attempts.[68,107–109] In this study I was unable to consider differences in suicidal ideation between

the exposed and not exposed group, and I did not ask about suicidal behaviors of survey

respondents.

There were several limitations to this study. One was the poor response rate to the initial

screening question. This was somewhat adjusted for in the sample weights that were developed;

however, the weights could not adjust for certain response biases. For example, adults struggling

with a recent suicide death may have been less engaged with filling out AmeriSpeak surveys, and

thus less likely to have participated in this study. Also, even though the percentage of adolescent

exposures to suicide was similar for parents who gave and did not give consent, it is possible that

those who did not give consent knew that their child had experienced a larger effect. These

impacts could result in an underestimation of the reported estimates.

The survey also asked about the most impactful suicide rather than the most recent one. This was done because during the survey development some people shared how they still experienced effects from the most impactful suicide but were no longer affected by the most recent suicide. It is unclear how the effects of multiple suicides combine to impact a person, and this study was not design to assess how the effect from each suicide combines into one aggregate impact. By focusing on the most impactful suicide this study provides an upper estimate of how impactful suicide can be. These effects should not be interpreted as an impact per suicide unless they have been adjusted to represent the effect of the most recent suicide exposure.

This study was cross-sectional and relied on respondents to recall their experience over time. This can be subject to recall bias, which includes forgotten difficulties and a changing perception about the experience over time. This study may also be subject to social desirability bias where people may have overstated the impact they experienced because it was socially desirable to show signs of mourning. The estimates of complicated grief may also be overestimated since the Brief Grief Questionnaire has been found to result in a higher prevalence of complicated grief than the more rigorous 22 item Inventory of Complicate Grief.[110,111] The Brief Grief Questionnaire was used in this study because of survey size limitations.

Finally, among adolescents there was a limited sample size to examine subgroup differences, particularly between those exposed to a suicide attempt and those exposed to a suicide death. Future studies with a larger nationally-representative sample of adolescents can be done to better understand the differences between these subgroups. Longitudinal studies on the impact of suicide exposure among children and adolescents should also be done.

There are several things that can be done as a result of this increased awareness of suicide exposure and its impacts. First, suicide-related bereavement can be talked about more. There is

much stigma that needs to be overcome around talking about the death of someone by suicide.[30,31,112] With more than one in two adults in the US knowing someone who died by suicide and just over a quarter of adults saying they probably or definitely are a survivor of suicide loss, there are many opportunities to offer comfort or a listening ear. As suicide is talked about more, it needs to be talked about in the right way so as not to glamorize it or increase its acceptability.[113–115] There have been guidelines established to do this.[113,116] Finally with 7% of adolescents whose health is currently impacted by another's suicide death or attempt, and 7% of adults who are experiencing complicated grief from another's suicide death, there are opportunities to engage these individuals in treatment and community support programs. There are online and in-person support groups available, but not everyone likes support groups or would be willing to use them.[117–119] There is also complicated grief therapy, but this is not yet widely disseminated.[19,120–122] In order to help those whose health is currently affected by suicide-related bereavement, new and innovative approaches may need to be developed and disseminated to engage individuals, help them heal, and fund their therapeutic support.

CHAPTER IV: Approaches to Measuring Health Utility Among the Bereaved

Introduction

In order to capture the full impact of an illness or health condition in society, one must examine both the effects on the individual who experiences the health condition and the spillover effects on all those connected to the individual. Such spillover effects have been well documented in the literature.[123–127] They include time costs among informal caregivers; out-of-pocket costs and financial uncertainty for supportive family members; and emotional, mental, and physical health-related burdens experienced by caregivers, family members, and close friends.[127–130] There may also be positive spillover effects that should be accounted for, such as a sense of fulfillment and strengthened social ties among caregivers of the sick.[131–133]

Researchers have tried to measure and incorporate these spillover effects into economic evaluations of interventions.[134] Costs of informal caregiving are most frequently included, and they have been recommended for inclusion in all cost-effectiveness analyses from a societal perspective.[135] One recent review of economic evaluations found that including these spillover costs of informal caregiving usually has a modest impact on the outcome.[136] There were, however, some health conditions that required substantial informal caregiving and the inclusion of these spillover effects had a substantial impact on the incremental cost-effectiveness ratios.

Less commonly done is including the health-related quality of life spillover impacts in economic evaluations. Ground breaking work was done by Basu and Meltzer in 2005 in this area, in which they established a theoretical framework for a family utility function.[137] They

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showed that in the context of prostate cancer, including spillover impacts of treatments and outcomes affected the cost-effectiveness ratios and more closely aligned with patient's actual behaviors in choosing treatments. Another more recent article, by Al-Janabi and colleagues, provided an additional framework for including spillovers in economic evaluation that involves the use of multipliers to adjust the cost-effectiveness ratios.[138] They found that the multipliers vary substantially by health condition and can impact the optimal funding decisions within a cost-effectiveness framework.

As the framework for including spillover effects in cost-effectiveness evaluations has developed over the years, so have the approaches for measuring these spillover effects. There are various well-established approaches for valuing monetary spillover effects, such as the proxy good method and opportunity cost method for quantifying the time spent by informal caregivers.[139–142] The best approaches for measuring non-monetary health-related spillover effects are still under development. A literature review by Wittenberg and Prosser found that the majority of studies examining health-related spillover impacts have used multiattribute utility instruments, such as the EQ-5D or the Health Utility Index 2 or 3 (HUI-2 or HUI-3), to measure health status among caregivers.[143] Other studies have developed specific instruments to measure caregiver quality of life, such as the CarerQol or the Carer Experience Scale (CES), which has been mapped to a measure of utility.[144,145] A limitation, however, is that the utility measured by the CarerQol and CES are not specific to health and therefore cannot be combined with other measures of health utility in a cost effectiveness analysis.

In addition to using indirect methods for measuring health utility spillovers, some studies have used the standard gamble and time trade-off (TTO) questions to directly measure health utility spillover effects. One of the first approaches was done by Prosser and colleagues.[146,147]

They used a modified TTO to have parents value the combined effect of their child's health and the resulting spillover impacts from sicknesses prevented by the pneumococcal conjugate and influenza vaccines. Basu and colleagues also used a modified TTO to study spillover effects of prostate cancer outcomes on spouses.[148] The approach by Basu and colleagues did not measure the combined effect, but only targeted the spillover effect among the spouses. Other researchers have more recently used the standard gamble question to measure the isolated spillover effect on family members of those with arthritis, Alzheimer's, cancer, depression, opioid misuse, and treatment for opioid misuse.[149,150]

Up to this point, the majority of work on measuring spillover effects and including them in economic evaluations has been for those living with health conditions. Little has been done on measuring and including the spillover effects of death in economic evaluations. Few studies have measured the health utility among bereaved individuals, and they most commonly used indirect multiattribute utility instruments of the EQ-5D and the HUI-3.[86,148,151,152] One challenge with these multiattribute methods is that they may not be very sensitive to the emotional and mental health attributes that are most commonly impacted among the bereaved.

Basu and colleagues used a TTO question to directly elicit the spillover health utility of a spouse dying from prostate cancer.[148] Using a direct elicitation technique may be able to better capture the mental and emotional impacts from the death of a loved one, but the questions are also more cognitively challenging to answer especially in the context of spillover effects. Direct elicitation techniques may also not be well-received during a time of grief because bereaved respondents may not want to consider situations where they trade off time from their own life or take a gamble on death.

The purpose of this study was to explore different measures of health-related quality of life and health utility among those who know someone who died by suicide. I explore how well a direct elicitation approach is received and how the different measures used in this study compare to each other.

Methods

A national survey was conducted among adults who knew someone who died by suicide (see Chapter III). In this survey there were three different approaches used to measure respondent's current health-related quality of life:

1. A TTO question which provides direct estimates of health utility

2. The EQ-5D questionnaire with 3 levels per domain, and

3. A visual analogue scale (VAS), where respondents were asked to rate their health on a scale of 0 to 100.

All three measurements were given to the 45 individuals still experiencing health impacts from the most impactful suicide death; however, only 21 individuals provided valid responses to all three measures. The latter two measures were asked among those who at any time experienced any emotional, mental or physical health impacts from the suicide (319 people were asked, and 303 people completed both measures).

TTO, EQ-5D and VAS Measures

The TTO question developed by Basu and colleagues was not used in the present study because survey respondents were currently experiencing the spillover effects and did not need to imagine what it would be like if their friend or family member had died. As a result, a chained

method was not necessary. The modified TTO in the present study was introduced with the following scenario: "Think about your overall health, including how the suicide death affects your emotional, mental, and physical health currently. Imagine you will live until you are [respondent's life expectancy] years old but you can live a shorter life that is at peace with the suicide death and totally free from all of your current emotional, mental, and physical health burdens."

Using a bisection approach, respondents were then asked if they would trade off half of their life expectancy to be in a perfect health state.[153] If they responded yes then they were asked if they would trade off three quarters of their life expectancy, and if they answered no then they were asked if they would trade off one quarter of their life expectancy. The life-expectancy and trade-off values were calculated for each respondent using their self-reported age and the Social Security Administration life tables.[154]

Respondents were then given the following prompt: "In this imaginary situation, what is the maximum number of years you would be willing to trade off or give up from the end of your life so that you could be at peace and totally healed from all of your current emotional, mental, and physical health burdens even though this would not change the outcome of the suicide? If you are unwilling to trade off any years, then put 0."

Respondent's health utility was calculated as one minus the maximum trade off value divided by the respondent's life-expectancy.[82] Respondents were also asked how confident they were in responding to the TTO question, and if they said 0 then they were asked why they would not trade off any time.

The EQ-5D is a standardized measure that asks about the following five dimensions of the respondent's current health: mobility, self-care, usual activities (e.g. work, study, housework,

family or leisure activities), pain / discomfort, and anxiety / depression.[89] Each dimension has three levels: no problems, some or moderate problems, and completely unable or extreme problems. Health utility values have previously been estimated for each possible combination of responses among US respondents.[90] The health utility of the health states ranges from 1 when the respondent has no health problems in all dimensions, to -0.109 when the respondent has the worst level of health in all the dimensions. The value of 0 health utility is equivalent to being dead, so the worst health state in the EQ-5D is considered to be worse than being dead.

The VAS question that was used to measure current health is provided in Figure IV-1. A similar type of question was asked retrospectively, to understand how respondents rated their health the year before the suicide death, the week after, three months after, nine months after, and two years after the suicide. A common challenge with the VAS is ill-defined anchors at 0 and 100.[155,156] To more clearly define the ends of the scale, I used the health state description of the best EQ-5D health state as 100 and the worst EQ-5D health state as the 0 for the scale. I also reordered the listing of the dimensions of the EQ-5D, listing the anxiety / depression dimension first, since this is the dimension that would be most affected by bereavement.

Figure IV-1. Modified Visual Analogue Scale Anchored With the Best and Worst EQ-5D Health State Descriptions

Today, how is your overall health? Please indicate your response on the scale below.

0 is where you are extremely anxious or depressed, you are confined to bed, unable to wash or dress yourself, unable to perform your usual activities, and you have extreme pain or discomfort.

100 is where you are not anxious or depressed, you have no problems walking about, no problems with self-care, no problems performing your usual activities, and no pain or discomfort.

A 1 unit change at the lower end of the scale should be the same as a 1 unit change at the higher end of the scale.

Overall Health

| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |

Extremely anxious or depressed;
Confined to bed;
Unable to wash or dress yourself;
Unable to perform your usual activities;
and Extreme pain or discomfort

Not anxious or depressed;
No problems walking about;
No problems with self-care;
No problems performing your usual activities;
and No pain or discomfort

Note: the anchors at 0 and 100 are taken from the best and worst health state descriptions of the EQ-5D. Anxiety and depression was ordered first rather than last since I did not want these overlooked, and I anticipated this domain would be the most sensitive to the impact of bereavement.

Comparison of VAS to Health Utility

Due to the small number of respondents that provided valid responses to the TTO, and also the low level of confidence among those who traded off time, I did not create a transformation of the VAS to the health utility as measured by the TTO. Instead I compared the VAS score divided by 100 to the health utility as estimated by the EQ-5D. A power function has been suggested to transform the rescaled VAS score (V) into a measure of health utility (U) using the following equations: $U=1-(1-V)^b$ or $U=V^b$.[155,157] Since I anchored the 0 value of the VAS at a health state that is estimated to have a health utility of -0.109, I adjusted the equations as follows: $U=1-(1-V)^b + 0.109*V - 0.109$ and $U=V^b + 0.109*V - 0.109$. I used the proc model function in SAS version 9.4 to estimate the parameter "b" that results in the best fit with the data. Other models were also considered but they did not result in as good of a fit as the power function models (see Appendix F).

Analysis Comparing EQ-5D Item Responses to VAS

I conducted an ordinary least squares (OLS) regression model where the VAS score divided by 100 was the outcome and indicator variables for each of the second and third level responses to the five EQ-5D domains were the predictors. I also fit a second OLS model with the same predictors, but the outcome was the difference between the health utility as measured by the EQ-5D and the VAS score divided by 100.

Results

Respondents who said their overall health was still affected from the suicide were generally unwilling to trade off time in the TTO question (Table IV-1). Among the 94% that either skipped the question or said they would trade off no time, 82% were moderately or very confident about their response. In contrast, among the 6% who were willing to trade off time 81% said they were a little or not at all confident about their response. A major reason for not being willing to trade off time was that respondents were coping well enough with their current burdens (44%). It had been on average 9.4 years since the suicide occurred for those answering the TTO question. Other common reasons for not trading off time were because they were morally opposed to the idea (23%), because they did not believe it possible for their burdens to be taken away (19%), and because they did not want their burdens to be taken away (8%). Among those who were willing to trade off time or were coping well enough that that they would not trade off time, their estimated health utility was 0.978.

Table IV-1. Responses to the Time Trade-Off Question, Level of Confidence in Answering the Question, and Reasons for Not Being Willing to Trade Off Time

Responses to Time Trade-off Question	n	Weighted Estimate
Those unwilling to trade off time	36	70%
Those that skipped the question	4	24%
Those willing to trade off time	5	6%
Level of confidence *among those unwilling to trade off time or who skipped the question*		
Very confident	20	39%
Moderately confident	10	43%
A little confident	6	12%
Not at all confident	4	6%
Level of confidence *among those willing to trade off time*		
Moderately confident	1	9%
A little confident	1	25%
Not at all confident	3	66%
Reasons for not being willing trade off time *among those unwilling to trade off time*		
I do not want my emotional, mental, and physical burdens to be taken away	1	8%
I do not believe that it is possible for my emotional, mental, and physical burdens to be taken away	6	19%

Responses to Time Trade-off Question	n	Weighted Estimate
I am morally opposed to the idea of trading off years of my life	8	23%
I am coping well enough with the emotional, mental, or physical burdens from the suicide that I would not trade off time	18	44%
Other	3	6%
Health utility among non-refusers[a]	23	0.978

[a]Non-refusers are those who were willing to trade off time (5 respondents) or those who said they would not trade off time because they are coping well enough with the emotional, mental or physical burdens (18 respondents). Note: The time trade-off question was only asked among the 45 respondents who said that their overall health was still affected by a suicide death, and on average it had been 9.4 years since the death happened for these respondents. Percentages were weighted to account for non-response and be more nationally representative.

There was only a weak correlation between the rescaled VAS score and the health utility as measured by the EQ-5D (correlation coefficient: 0.439). As shown in Figure IV-2, the power transformation that had the best fit to the data was captured by the following equation: (Health Utility) = (rescaled VAS score)$^{0.31127}$ + 0.109*(rescaled VAS score) – 0.109. This model had a root mean square error of 0.214, whereas the second power function transformation had a root mean square error of 0.270.

Figure IV-2. Scatter Plot of Visual Analogue Scale Responses and EQ-5D Health Utilities, with Power Function Projections.
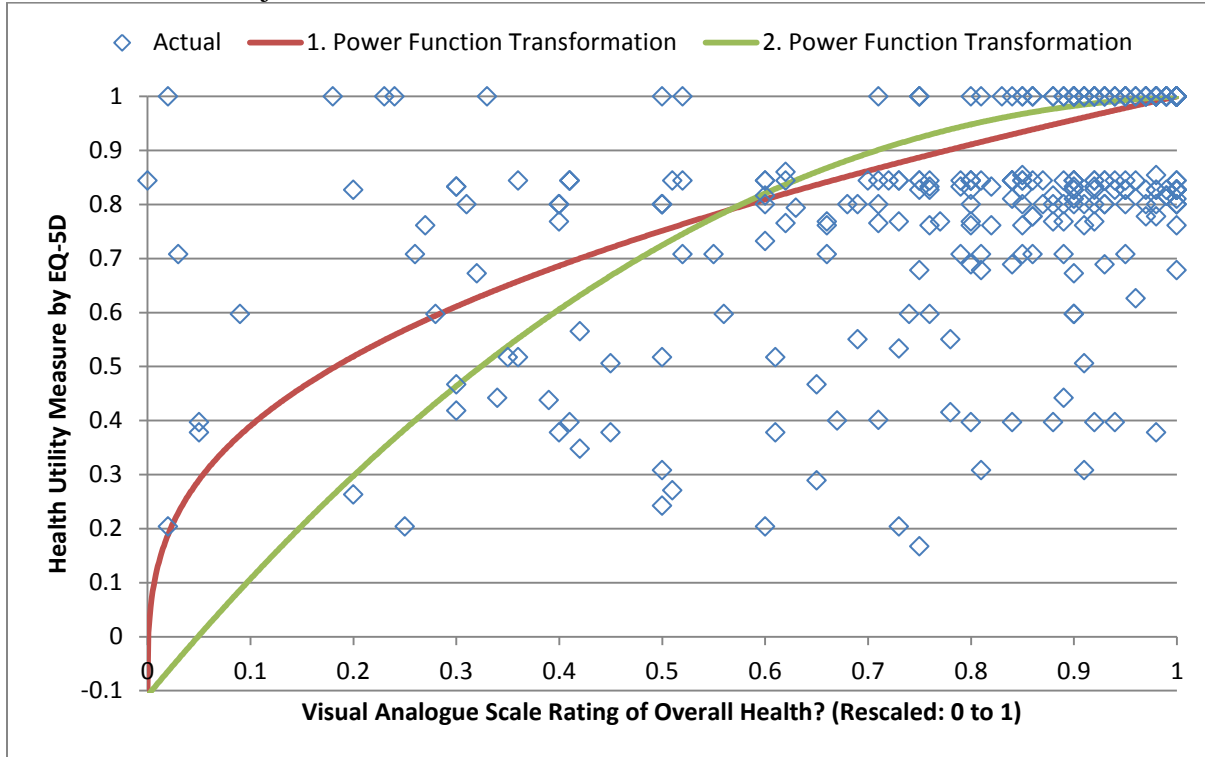
Note: The EQ-5D and visual analogue scale (VAS) were asked among 303 adults who had experienced some health impacts from a suicide death. The correlation between the rescaled VAS and the EQ-5D was 0.439. The power function transformation forces the intercept to be at -0.109 because this is the health utility of the worst EQ-5D health state which was described as the value of 0 in the VAS. The first power function transformation had a root mean square error of 0.214: (Health Utility) = (rescaled VAS score)$^{0.31127}$ + 0.109*(rescaled VAS score) − 0.109. The second power transformation had a root mean square error of 0.270: (Health Utility) = 1 − (1 − (rescaled VAS score))$^{2.1784}$ + 0.109*(rescaled VAS score) − 0.109. The functions were fit based on weighted data.

The analysis of the relationship between EQ-5D responses and rescaled VAS scores showed that the VAS score was most sensitive to responses in the anxiety or depression domain (Table IV-2). Being moderately or extremely anxious or depressed was related to lower rescaled VAS scores. Moderate or extreme pain or discomfort was only present when other moderate to extreme problems were present; thus, the coefficient for these variables was positive, offsetting the negative decreases for all other conditions. The pain and discomfort responses were also most significantly related to the discrepancies between the EQ-5D health utility and the rescaled

VAS score. The difference became more negative with moderate or extreme pain and

discomfort. On average, those reporting no problems across all domains had a health utility

measured by the EQ-5D that was 0.117 units higher than the rescaled VAS score (p<0.001).

Table IV-2. Linear Regression Parameter Estimates Predicting the Visual Analogue Scale (VAS) and the Difference Between the VAS and the EQ-5D Health Utility Given the Responses to the Five Dimensions of the EQ-5D

Parameter	Outcome 0 to 1: VAS Score		Outcome -1 to 1: EQ-5D Health Utility Minus Rescaled VAS Score	
	Estimate	P-Value	Estimate	P-Value
Intercept	0.864	<0.001	0.117	<0.001
D1.L2. I have some problems walking about	-0.061	0.093	0.018	0.618
D1.L3. I am confined to bed	-0.357	0.005	-0.158	0.210
D2.L2. I have some problems washing or dressing myself	-0.107	0.014	0.021	0.625
D3.L2. I have some problems with performing my usual activities	-0.052	0.156	0.011	0.776
D3.L3. I am unable to perform my usual activities	-0.275	0.002	0.073	0.415
D4.L2. I have moderate pain or discomfort	0.081	0.014	-0.186	<0.001
D4.L3. I have extreme pain or discomfort	0.139	0.019	-0.497	<0.001
D5.L2. I am moderately anxious or depressed	-0.127	<0.001	0.028	0.340
D5.L3. I am extremely anxious or depressed	-0.443	<0.001	0.131	0.013

Note: There were 303 people included in these analyses. Each second or third level (L2 or L3) of the domains (D1 to D5) were coded as indicator variables. No respondents said that they were unable to wash or dress themselves, which is the third level of the self-care domain (D2.L3.). The reference group for each of the domains is those that report no problems (L1). Responses were weighted using the national weights.

Discussion

This study found that a small proportion of people who are experiencing health effects

from suicide-related bereavement are willing to participate in the TTO question. The reasons

found in this study suggest that grief may be unique from many other health experiences. There

is a normative expectation that everyone will grieve the death of a loved one. Thus even if the

health impacts of bereavement are substantial, the preference for bereavement may be higher

than for some disease-related health state resulting in similar health impediments. There is also

the social expectation to mourn and grieve out of respect for the deceased. This places some value in the grief experience which also causes the health utility to potentially be higher. Respondents' willingness to trade off time was also likely influenced in this study by it having been so many years since the death occurred, allowing for more time to adjust and cope with the grief.

The findings from the TTO question are very different than those found by Basu and colleagues who used a TTO to measure the impact of death from prostate cancer.[148] Even though their sample size was also small for the TTO question, Basu and colleagues had a much larger proportion of respondents that were willing to trade-off time. One reason for this may be that they delivered the question in-person, whereas the present study was predominantly done online. Their question encouraged respondents to focus on just the spillover impacts; however, they did not have a statement saying that their trade-off would not affect the outcome of the death. As a result, it is possible that their respondents could have valued both the spillover impact and the death of their spouse thus resulting in an overestimate of the spillover impact. Even if respondents in the study by Basu and colleagues had only valued the spillover effects, it is likely that they were considering the immediate spillover effects of losing a spouse, or the effects at their largest impact. This is a major difference from the present study where respondents were valuing their health on average nine years after the death occurred. Another reason we would expect the disutility estimates from Basu and colleagues to be so much greater than those of the present study is because their study focused on the spillover impact among spouses, and the present study includes all people that were aware of the death who still felt their health was impacted by the death.

The present study also found differences from previously published literature with regards to the VAS transformations performed. The optimal power coefficient for transforming VAS scores into health utilities in the present study was smaller than what has been found in other studies.[155,157] This is likely because I anchored the formula so the intercept would be at a health utility of -0.109 instead of 0. The unambiguous anchor points of the VAS scale may have helped improve consistency across responses and potentially reduced end-aversion bias; however VAS scores are still subject to context bias.[155] Due to these biases, transformed VAS scores are not ideal for measuring health utility.[155,156] However, this transformation was still developed so that in future studies the retrospective VAS questions could be used as approximate measures of health utility.

There have been few studies comparing EQ-5D responses and VAS scores. Similar to what was found in the present study, Whynes and colleagues found that the domains of anxiety / depression and pain / discomfort had the largest effect in predicting VAS scores.[158] Brazier and colleagues observed that the pain / discomfort domain also had a larger impact on measures of health utility than on VAS scores.[156] This influence of pain / discomfort on the difference between the two measures confirms that the way people rate health using a VAS is different than a preference weighted approach captured through direct or indirect measures of health utility.[155]

A major limitation to this study was the small sample size among those who answered the TTO. When combined with the high refusal rate, I was not able to make meaningful comparisons between the VAS score and the TTO responses. Another limitation is that the transformation function in this study is not generalizable to other studies. This is because the VAS scale developed for the present study is different than the typical VAS questions that are anchored at worst imaginable health and best imaginable health. The health utility reported among this

experienced sample may be different than how the community values grief. By using the EQ-5D the responses were weighted based on the community's preferences for the health detriments experienced; however, future studies need to be done to directly elicit the health utility preferences of grief in a community sample with individuals who may or may not have experienced grief in their life.

More needs to be done to develop the best approach for eliciting health utility among the bereaved. The standard gamble does not seem appropriate to ask bereaved individuals, but could potentially be asked to elicit preferences in a community sample. The TTO question should also be explored in a larger sample with the expectation that there still may be many who refuse to trade off time given the health effects of bereavement. Other indirect methods for measuring health utility such as the short-form six-dimensions (SF-6D) or the HUI-3 could also be used in additional studies, and these may be more sensitive than the EQ-5D to the domains of mental, emotional, and social problems that are often experienced among the bereaved.[83,159] Qualitative studies need to be done to guide the development and use of health utility measures among the bereaved. In doing these studies it would also be worth exploring the feasibility and appropriateness of developing a unique multiattribute utility index for grief that captures the health attributes that are most impacted by grief. Once a valid and reliable measure of health utility among the bereaved is established, then studies will need to be done to assess how health utility spillovers vary by the type of death that occurs. As the health-related spillover impacts of death are better quantified within a preferences framework, these can be used to better inform policy and decision makers about the total impact and value of preventing types of death such as suicide, overdose, unintentional injuries, and others.

CHAPTER V: Quality Adjusted Life Years and Productivity Losses from Suicide

Introduction

Suicide rates have increased by 29% from 2000 to 2016.[64] Not only is each suicide a tragedy, but research has shown that it can have significant long-term health impacts on the bereaved friends and family members left behind.[21,22,27,28,32,75,160] In the United States many are investing money and effort into suicide prevention. In 2012 the National Strategy on Suicide Prevention was established.[161] The National Action Alliance for Suicide Prevention was also formed to coordinate efforts across public and private agencies around suicide prevention.[162] The Substance Abuse and Mental Health Services Administration (SAMHSA) invests $60 to $70 million in suicide prevention efforts each year.[163] The National Institutes of Health (NIH) also spends $60 to $90 million in suicide-related research each year.[164]

One way to value investments is to consider how they change costs in society and also how they change the quality and length of life of individuals. In 2013, suicide resulted in an estimated loss of $50.8 billion.[165] These losses were predominantly due to lost productivity but did not include the impact on those bereaved by suicide. The Centers for Disease Control and Prevention has also measured the potential years of life lost from suicide each year;[64] however, no study has estimated the quality adjusted life years (QALYs) lost from suicide in the US. QALYs combine both the quality of each year of life and the length of life, and can be used to measure the health-related losses from both the suicide decedents and the bereaved.[166–168] The

purpose of this study is to estimate the total lifetime QALY and productivity losses from suicide deaths in 2016 among both the decedents and the bereaved.

Methods

Inputs Regarding the Number of People Impacted and the Level of Effect

In 2016 there were 44,965 suicides.[64] From the national survey on suicide bereavement discussed in Chapter III, I estimated the level of effect from the most recent suicide death (Table V-1). Approximately 21% of recent suicide deaths had a large or extreme effect on others.

Table V-1. Distribution of the Level of Effect that the Most Recent Suicide Death Had on the Respondents

Level of Effect	n	Weighted Estimate	95% Lower Confidence Limit	95% Upper Confidence Limit
No effect	49	8%	6%	10%
Little effect	222	33%	29%	36%
Moderate effect	266	38%	34%	41%
Large effect	96	16%	13%	19%
Extreme effect	30	5%	4%	7%

Note: Three individuals had missing responses and were excluded from this analysis. Estimates were weighted to be nationally representative. I used binomial proportions to generate confidence intervals around each percentage. Random estimates were selected using a Dirichlet distribution.[169]

The survey respondents also reported on the number of suicide deaths that they knew happened in the past 10 years. I estimated the number of adults exposed per suicide death over the years 2007 to 2016 by using this distribution of the number of exposures, as well as the overall prevalence of knowing anyone who died by suicide in the past 10 years, the population size in 2016, the number of people who died each year from 2007 to 2015 who may have been exposed prior to their death, the prevalence of knowing someone who died in the past year

reported by Crosby and Sacks (2002), and the number of suicides that actually occurred over the

10 year period of 2007 to 2016 (see Appendix G for details).[64,66]

Measuring Disutility

As discussed in Chapter IV, respondents of the survey on suicide bereavement were

asked to recall and rate their overall health on a visual analogue scale (VAS) for the year before

the suicide that had the greatest impact in their life and at time intervals after the death. These

were then transformed using the following formula in order to approximate the health utility at

the different time periods: (Health Utility) = (rescaled VAS score)$^{0.31127}$ + 0.109*(rescaled VAS

score) − 0.109. The distributions of approximate health utilities at each of the time periods are

provided in Appendix H.

The disutility for each person was estimated by adding the difference between the

respondent's estimated health utility before the death and each month after the death until they

said their health was no longer affected. Negative disutilities were allowed, which meant that the

health utility improved after the suicide occurred. I used a linear interpolation of health utility

between the time periods that were reported. The estimated disutility at the middle of each month

was discounted to present value using a monthly rate of 0.247% (3% annual rate).

Measuring Productivity Losses

Absenteeism and presenteeism losses were measured separately in the survey on suicide

bereavement. Respondents were asked if how well they worked at their job or school had

changed as a result of the most impactful suicide. If they said it had changed, then they were

asked how long their performance at work or school was affected. They were also asked to what

extent their performance at work or school was affected during that time; 0 being no effect or "I

worked just as well as everyone else," and 100 being large effect or "I could not do any work."

After this question they were asked how many days or months of work or school they missed because of the suicide. For question details see Appendix B.

Absenteeism costs were calculated by converting all the days and months absent into work-months missed. I assumed 261 work-days per year or 21.75 work-days per month.[170] Some responses were changed; for example, 7 days absent was assumed to be one work-week or 5 work-days since the respondents did not have the option of reporting weeks absent. Also, those that said 20 days absent or 30 days absent were both assumed to be one work-month absent. I also unduplicated responses so that if they said they were absent both 30 days and 1 month, I would only count them absent for 1 month. I restricted the number of months absent so that responses were no more than the number of months since the suicide happened.

Each month or fraction of a month absent was multiplied by the average monthly age-specific earnings and discounted using a monthly rate of 0.247% (3% annual rate). Average monthly earnings were taken from the Current Population Survey 2016 income estimates.[171] The estimates were summed per individual and the average lifetime absenteeism cost by level of effect was calculated.

To calculate presenteeism losses, I restricted the time for the losses to be less than the months since the suicide occurred minus the months that the person was absent from work or school. Presenteeism was assumed not to start until after the time respondents were absent from work or school. Respondents could report the length of time their work or school was impacted in weeks, months or years. I converted the responses into work-months, using a similar approach as was used for absenteeism costs. I also removed duplicate responses by not counting the

reported weeks if they were equal to or more than the reported months, and not counting the months if they were equal to or more than the reported years.

Responses regarding the extent to which respondents' work had been affected were divided by 100 to get the percentage of productivity loss. As a conservative approach, I assumed this percentage to be the loss immediately after the suicide. I assumed that the percentage loss then decreased to 0% quadratically by month until the time the respondent said their work was no longer affected. The estimated percentages at the middle of each month were multiplied by the average monthly age-specific earnings and discounted to present value using a monthly rate of 0.247% (3% annual rate). The estimates were summed per individual and the average lifetime presenteeism cost by the level of effect was calculated. The standard error and mean for both the presenteeism and absenteeism costs were converted to alpha and beta parameters of a gamma distribution, which distribution was then used to estimate 95% confidence intervals.

Aggregating Losses for the Bereaved and Conducting Sensitivity Analyses

The total QALY and productivity losses were the calculated as follows:

$$T = d \times a \times \sum_{e} p_e \times l_e$$

Where

T = total losses

d=number of suicide deaths

a= number of people aware of each suicide

p= the percentage of people experiencing a certain level of effect

l= the average discounted QALY or productivity losses for that level of effect

e=categories of level of effect

The QALY and productivity losses per suicide were based on reports for the most impactful suicide; however, they were reweighted by the percentage experiencing each level of effect for the most recent suicide.

Probabilistic sensitivity analyses were conducted using 5,000 Monte Carlo simulation iterations. With each iteration, parameters were randomly selected from a distribution of plausible values. A Dirichlet distribution was used for the parameters pertaining to the level of effect in Table V-1.[169] Distributions for the parameters pertaining to the average number of people aware of each suicide are provided in Appendix G. For the disutility, I used a normal distribution with the mean and standard error that resulted in the confidence intervals listed in Table V-2. I used a gamma distribution for the presenteeism and absenteeism costs in Table V-3. The results from the 5,000 iterations were ranked and then the 2.5 percentile and 97.5 percentile were identified to calculate the 95% credible range of the QALY and productivity losses.

One-way sensitivity analyses were also conducted. To do this, I varied each of the inputs one at a time and reported the outcomes given the high and low parameter inputs. The parameters pertaining to the distribution of the level of effect could not be varied independently of each other. For the lower estimate of one of these distribution parameters I took the percentage point difference between the mean and the lower estimate and then redistributed that difference proportionally to the remaining categories. For the upper estimate, instead of adding to the remaining categories I removed the necessary percentage points proportionally from the other categories so that the total remained 100%. Tornado diagrams were generated to identify which parameter uncertainty had the largest impact on the outcomes.

Estimating QALY and Productivity Losses for Suicide Decedents

To estimate QALY and productivity losses of suicide decedents I first identified the

percent distribution of suicides by age among males and females using 2016 CDC data.[64] I

assumed that if the deaths had not occurred then the individuals would have lived a full life

expectancy according to the product of the probabilities of survival each year that can be

calculated from the Social Security Administration life tables.[154] During the first year after the

averted death, I assumed that individuals would have the health utility of someone of the same

age and sex with fair health on a categorical scale of excellent, very good, good, fair and poor

health. Every year thereafter, their health would be the same as someone reporting good health.

Values of health utility by age, sex, and health status were calculated from the Medical

Expenditures Panel and reported publicly by Dr. Janel Hanmer at the University of Pittsburgh.[172]

Net productivity by age and sex was calculated as the difference in average annual

earnings and average annual expenditures. Average earnings in 2016 by age and sex were

available from the Current Population Survey; and the average expenditures in 2016, but only by

age, were available from the Consumer Expenditure Survey.[171,173] The total set of inputs by age

and sex is provided in Appendix Table I-1.

The net productivity and the health utility for each potential year of life lost were

discounted using an annual rate of 3% and summed per age group. These were then multiplied

by the percent distribution of suicides by age group and added together to get an average QALY

and productivity loss across all ages, for males, females, and overall.

Results

Approximately 453 adults ages 18 and older were exposed to each suicide death. At a

national level in 2016, there were approximately 20 million instances where adults were aware of

a suicide death (Table V-2). Over 12 million of these instances had a moderate to extreme effect on individual's lives.

Table V-2. Estimated Number of Instances Where People Were Aware of the 44,965 Suicide Deaths that Occurred in 2016, by Level of Effect

Level of Effect	Estimate
No effect	1,603,441
Little effect	6,672,517
Moderate effect	7,693,259
Large effect	3,312,828
Extreme effect	1,092,052
Total	**20,374,097**

Note: This was estimated as the number of suicide deaths multiplied by the average number of people aware of each death (see Appendix G) multiplied by the percentage of people experiencing each level of effect in Table V-1.

Table V-3 provides the average lifetime disutility by level of effect from the most impactful suicide. Those who experienced an extreme effect lost on average more than a quarter of a quality adjusted life year (QALY). Those experiencing a large effect had an average disutility that was slightly smaller than those experiencing a moderate effect because there were some in the survey who had increases in their health utility following the suicide.

Table V-3. Average Lifetime Disutility per Suicide, by Self-Reported Level Effect

Level of Effect	Estimate	95% Lower Confidence Limit	95% Upper Confidence Limit
No effect	-0.002	-0.004	0.001
Little effect	0.004	0.000	0.008
Moderate effect	0.041	-0.037	0.119
Large effect	0.023	-0.051	0.098
Extreme effect	0.293	-0.187	0.773

Note: The disutility was calculated for each person as the difference between the health utility prior to the suicide and the health utility at different intervals after the suicide. Health utility was approximated using the power transformation of the visual analogue scale score as outlined in Chapter IV. Negative disutility means that there was an improvement in health utility in the time after the death. Monthly disutilities were estimated using a linear interpolation between time periods. The monthly disutilities were discounted to present value using a monthly rate of

0.247% and were summed and divided by 12 to get the QALYs lost per person. People in the survey only reported disutility for the most impactful and not the most recent suicide.

Given that the average annual earnings across all ages in 2016 was estimated to be $46,550, the lifetime absenteeism costs of those experiencing no effect, little effect, or moderate effect was equivalent to only a few hours of average earnings (Table V-4). Those experiencing large effect had absenteeism costs equivalent to about one week of average earnings, and those experiencing extreme effects had costs equivalent to about 1.5 months of earnings. Presenteeism resulted in much larger lifetime costs than absenteeism (Table V-4). Those who experienced little effect or moderate effect had presenteeism costs that were approximately equivalent to 1.5 weeks of average earnings. The losses for those experiencing a large effect were equivalent to about three months of average earnings, and for those experiencing an extreme effect the losses were equivalent to about 8.5 months of average earnings.

Table V-4. Average Lifetime Absenteeism and Presenteeism Costs per Suicide, by Self-Reported Level Effect

Level of effect for most impactful	n	Percentage with 0 Costs	Average Discounted Costs	95% Lower Confidence Limit	95% Upper Confidence Limit
Absenteeism costs					
No effect	60	99%	$23	$0	$116
Little effect	206	100%	$21	$0	$93
Moderate effect	246	87%	$85	$42	$142
Large effect	111	55%	$1,072	$368	$2,143
Extreme effect	39	45%	$5,923	$1,191	$14,375
Presenteeism costs					
No effect	60	100%	$0	$0	$0
Little effect	206	95%	$1,651	$325	$4,036
Moderate effect	246	77%	$1,341	$625	$2,326
Large effect	111	42%	$12,351	$7,766	$17,982
Extreme effect	39	32%	$33,039	$19,362	$50,311

Note: Monthly earnings derived from Appendix Table H-2 were counted as lost costs for each absent month from work or school. Presenteeism from work or school was calculated as the self-reported length of time affected multiplied by the percent reduction in the respondent's productivity. Respondents were only asked once about their percent reduction in productivity overall, thus I assumed this was the value at the time of the suicide which then reduced in a

quadratic path to zero by the end of the impacted time period. Monthly earnings were then multiplied by the percent reduction in productivity for each month of the affected time period. All monthly costs were discounted to present value using a monthly rate of 0.247%, and then summed per respondent. The averages are for all people, not just those that reported some costs. A gamma distribution was used to select random estimates that were within the plausible range.

From the suicides occurring in 2016, an estimated 737,310 QALYs were lost among bereaved individuals (Table V-5). The 95% credible range was large due to uncertainty in the inputs (-119,125 to 1,601,781 QALYs lost; negative values meaning that there were increases in QALYS since the estimates are in terms of the amount of QALYS lost). From the probabilistic sensitivity analysis, there was a 93% probability that there were more than 100,000 QALYs lost among the bereaved. The average number of QALYs lost from bereavement per suicide death was 16.397.

The total bereavement-related productivity losses from suicide deaths in 2016 were estimated to be $109 billion (Table V-5). 88% of the productivity losses, or $98 billion, were from presenteeism or reduced productivity while at work or school. The remaining $11 billion were from taking time off from work or school.

Table V-5. Estimated QALY and Productivity Losses from Bereavement Related to Suicide Deaths in 2016

Outcome	Estimate	95% Lower Credible Limit	95% Upper Credible Limit
Total QALYS lost	737,310	-119,125	1,601,781
Average QALYS lost per suicide death	16.397	-2.649	35.623
Total absenteeism costs	$10,850,196,046	$4,401,231,823	$21,928,470,410
Average absenteeism costs per suicide death	$241,303	$97,881	$487,679
Total presenteeism costs	$98,329,835,098	$65,864,797,292	$139,780,284,045
Average presenteeism costs per suicide death	$2,186,808	$1,464,801	$3,108,646
Total productivity costs (absenteeism and presenteeism costs)	$109,180,031,143	$70,266,029,115	$161,708,754,455
Average productivity costs per suicide death	$2,428,111	$1,562,683	$3,596,325

Note: Totals were calculated as the summation of the product of estimates in Table V-4 with those in Table V-2 and Table V-3. Averages were calculated as the total divided by the 44,965 suicides that occurred in 2016. The upper and lower credible limits were developed using a Monte Carlo simulation that randomly pulled inputs from the input distributions. 5000

simulations were run, the outcomes were ranked, and the 2.5 percentile and 97.5 percentile were selected as the credible limits.

The one-way sensitivity analyses showed that there were a few inputs that had large impacts on the uncertainty of the outcomes (Figure V-1, Figure V-2, and Figure V-3). For QALY losses, the uncertainty around the average disutility for those experiencing a moderate or extreme effect had the largest impact on the estimated outcome (Figure V-1). Similarly for absenteeism losses, the uncertainty around the average costs for those experiencing an extreme effect had the largest impact on the estimated outcome (Figure V-2). The presenteeism outcomes were most affected by the uncertainty in average costs for those experiencing large or extreme effects and the proportion of the population that knew 1, 2, 3 or 4+ people who died by suicide.

Figure V-1. One-way Sensitivity Analysis of Inputs for Calculating the QALYs Lost from Suicide in 2016
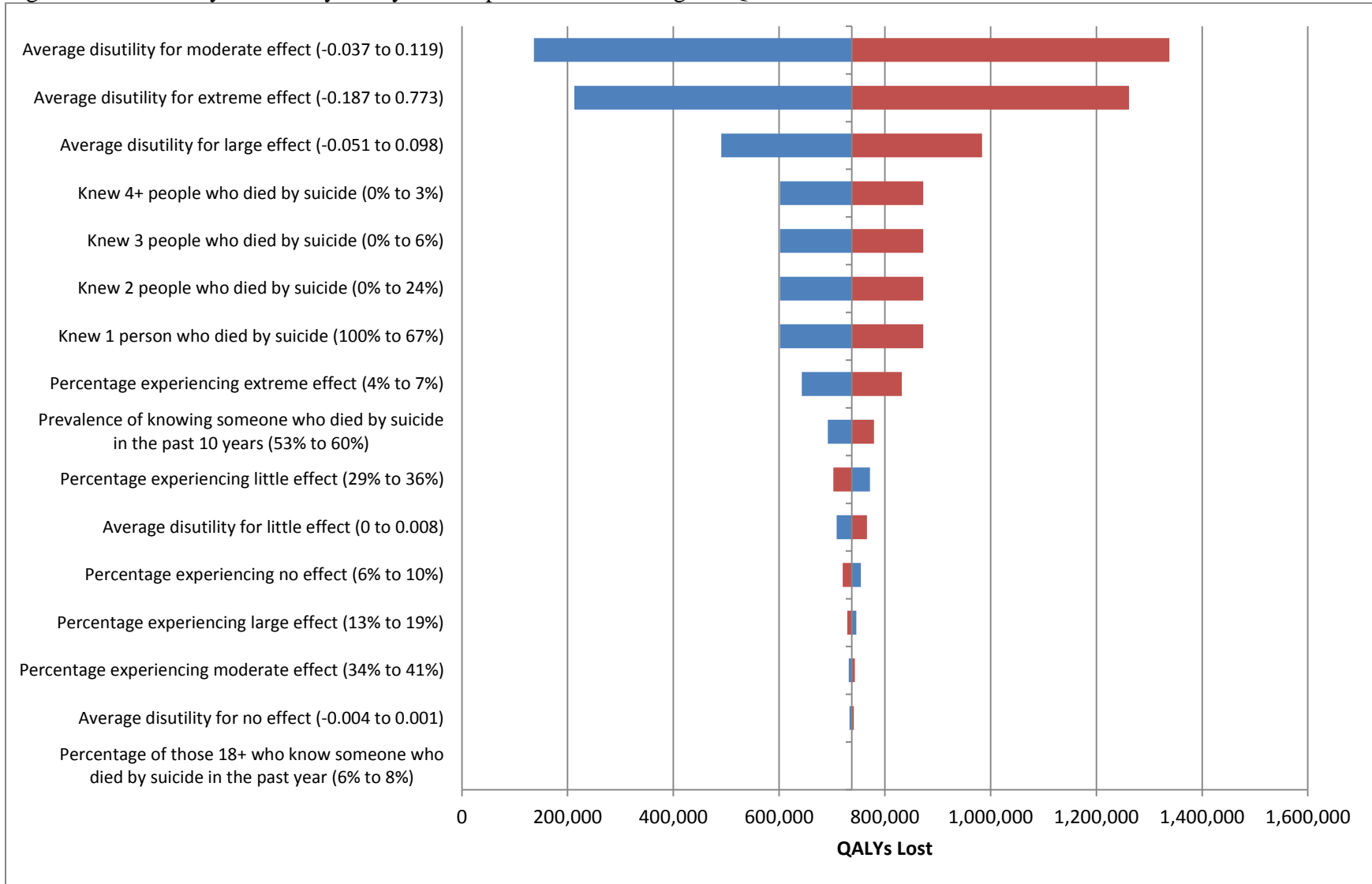
Note: The outcome from the lower estimate is in blue and the outcome from the higher estimate is in red. A negative disutility means that there was an improvement in health utility during the time following the death.

Figure V-2. One-way Sensitivity Analysis of Inputs for Calculating the Absenteeism Costs from Suicide in 2016
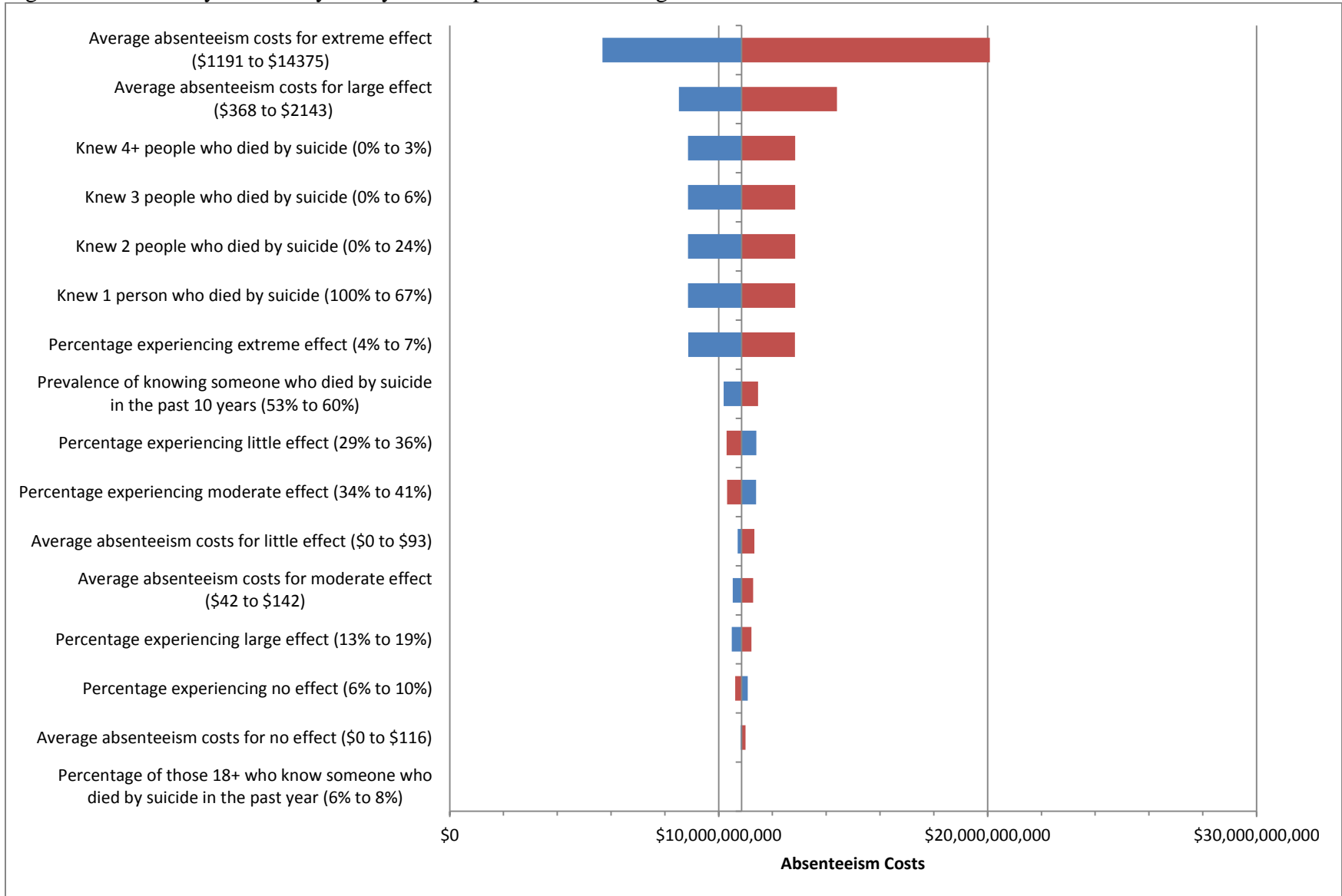
Note: The outcome from the lower estimate is in blue and the outcome from the higher estimate is in red.

Figure V-3. One-way Sensitivity Analysis of Inputs for Calculating the Presenteeism Costs from Suicide in 2016
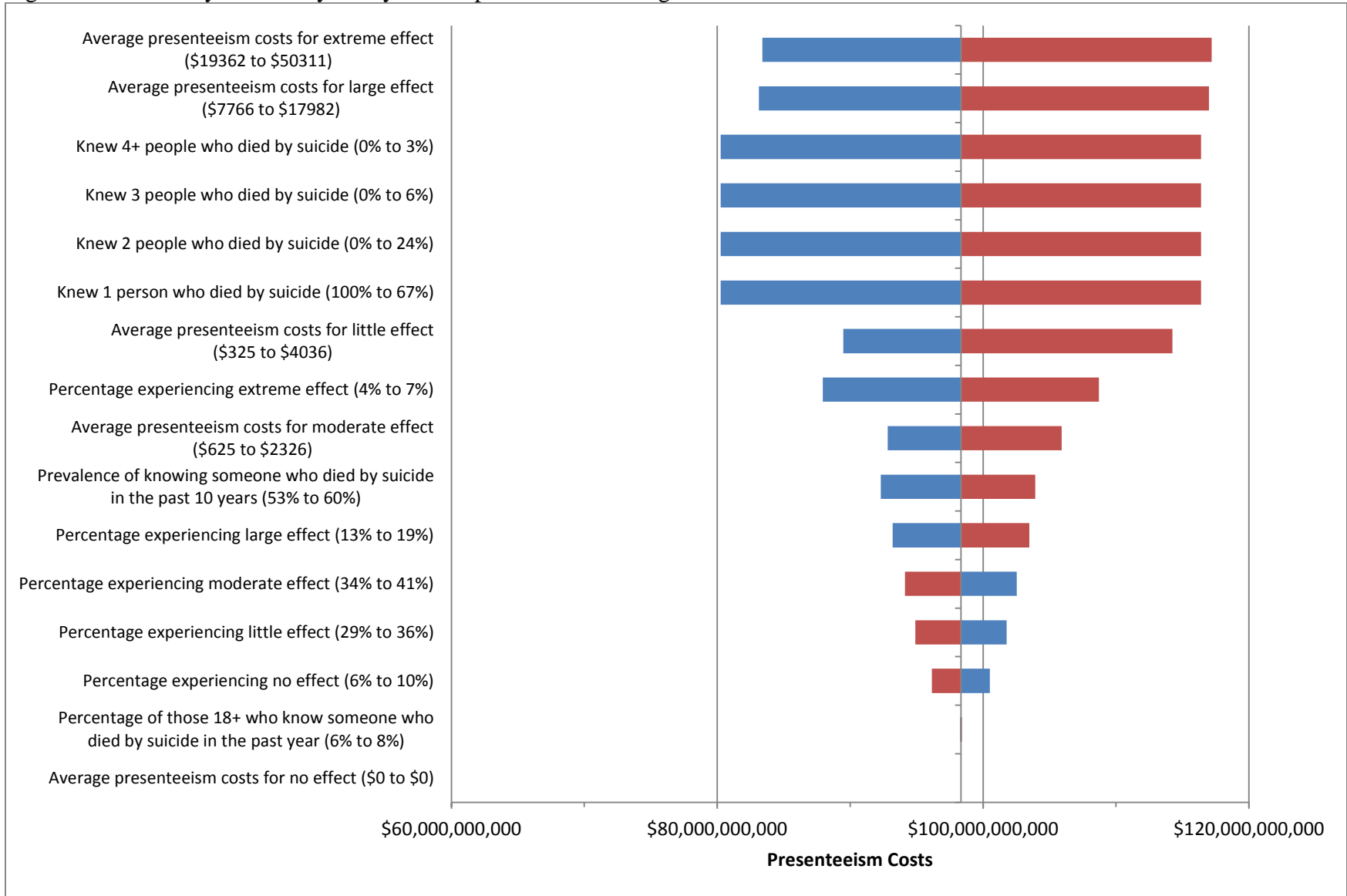
Note: The outcome from the lower estimate is in blue and the outcome from the higher estimate is in red.

QALY and productivity losses were also substantial from those who died by suicide (Table IV-6). On average, 14.3 QALYs and $555,869 in net productivity were lost per suicide. This totaled to 640,809 QALYs and $25 billion lost from all suicide decedents in 2016.

Table V-6. QALY and Productivity Losses by Sex and Overall Among Suicide Decedents

Outcome by Sex	Estimate
Average QALYs lost for each male suicide in 2016	14.1
Average QALYs lost for each female suicide in 2016	14.7
Average lifetime net productivity losses for each male suicide in 2016	$652,058
Average lifetime net productivity losses for each female suicide in 2016	$229,587
Percentage of male suicides in 2016	77%
Percentage of female suicides in 2016	23%
Outcome Overall	**Estimate**
Average QALYs lost per decedent in 2016	14.3
Average productivity losses per decedent in 2016	$555,869
Total QALYs lost from suicide decedents in 2016	640,809
Total productivity losses from suicide decedents in 2016	$24,994,654,298

Note: This is estimated based on the 44,965 suicide deaths in 2016. Costs and QALYs have been discounted to 2016 present value using a 3% annual discount rate.

Combining the results in Table V-5 and Table V-6, the total QALYs lost from both suicide decedents in 2016 and those bereaved was approximately 1.4 million QALYs. This averaged to about 30.6 QALYs lost per death. The total lifetime productivity losses from suicide decedents and the bereaved in 2016 was approximately $134 billion or $3.0 million per death.

Discussion

Suicide poses a substantial economic and quality-of-life burden on society. The number of QALYs lost from the bereaved is potentially more than the QALYs lost from the suicide decedents. The productivity losses from the bereaved were also more than 5 times the net productivity losses from the decedents.

The productivity losses from suicide estimated in this study were very different than those previously estimated in the United States. In 2010, there was an estimated total of $44.5 billion in work loss costs and additional $0.1 billion in medical costs from suicide decedents.[174] In 2013, the total work loss and medical costs were $50.8 billion.[165] These estimates do not include the impact among the bereaved. It is also unclear from the documentation provided how future costs were discounted to present value. A major difference in comparing the estimates among suicide decedents only is that the work loss costs in previous studies did not use estimates of net productivity, or average earnings minus average consumption. The net productivity approach is suggested by the second panel on cost-effectiveness in health and medicine, and is an approach that is often used in forensic economics.[135,175] As a result the economic losses among decedents in this study were only about half of what has been estimated previously.

Overall, the total productivity losses from suicide are comparable to those experienced from much more common health conditions in the US. In the US each year, excessive alcohol consumption costs $179 billion from lost productivity, deaths from cardiovascular disease cost $124 billion from lost earnings, and diabetes costs $69 billion from lost productivity.[176–178] Those estimates did not use net productivity for calculating work losses among the deceased; however, they may also be larger if losses due to bereavement were included. The increases in economic losses may not be as substantial for other conditions as they are for suicide. One study has shown that the likelihood of productivity losses are higher among those bereaved from a suicide compared to those bereaved by an accidental or natural death.[179]

The measurement of QALYs used in this study is often an outcome in cost-effectiveness analyses. An intervention that costs $100,0000 to $150,000 per QALY gained is considered cost-effective.[135] Given the findings from this study on QALYs lost per suicide, if an intervention cost

society $1 million and only prevented one suicide, the incremental cost-effectiveness ratio would be approximately $33,000 to 40,000 per QALY, depending on the level of bereavement experienced at the end of the person's life, and would be considered very cost-effective. If the exposure and bereavement effects were not included in the analysis then the cost-effectiveness ratio would by approximately $70,000 per QALY. A recent literature review of economic evaluations of suicide and self-harm interventions has been done and found that the majority of interventions were cost-effective.[180] One study evaluated a treatment among the bereaved; however, none of the other cost-effectiveness analyses included the spillover impacts from each suicide death among the bereaved.[86]

The amount invested in suicide prevention and suicide research each year is substantially less than the amount of lifetime monetary losses experienced from suicide deaths each year. In 2016, SAMHSA and the NIH together invested approximately 145 million in suicide prevention and suicide research.[163,164] This was approximately $3,225 per suicide that occurred in 2016. In contrast, this study found that each suicide in 2016 resulted in approximately $3.0 million in lifetime productivity losses and 30.6 QALYs lost, which if valued at $100,000 per QALY would be another $3.1 million per suicide. Thus, the economic losses from suicide deaths occurring in 2016 could be valued at about 1875 times the amount of money that was invested that same year in suicide prevention and research by the US government agencies SAMHSA and the NIH.

There were many limitations to the estimates generated in this study. First of all, these were based on self-reported information. The absenteeism was not validated by work records. Presenteeism is more challenging to validate, but was subject to recall bias. The impact of this bias was reduced by assuming that the reported productivity loss while at work or school tapered down over time. The estimates of QALY and productivity losses were also originally based on

suicides that individuals reported as being the most impactful in their life. I attempted to adjust

for this bias by stratifying responses by the level of effect and then re-weighting responses to be

similar to the level of effect reported from the most recent suicide.

For the impacts of bereavement, many of the inputs were only generated among adults

and did not include the effects experienced by adolescents. For example, the number of people

exposed to each suicide death was only estimated for people 18 and older who were exposed to

suicide decedents of any age. The distribution of the level of effect was also among adults and

not among adolescents. Analyses in the technical appendix, however, showed that those adults

who were exposed when they were adolescents experienced larger effects from the suicide than

what was assumed for the final estimations in this study (Appendix H).

There is a large amount of uncertainty in the health utility and QALY estimates used in

this study. Responses to a visual analogue scale were transformed to approximate health utility,

and other studies have argued that this is not an ideal approach.[155,156] As discussed in Chapter IV,

this approach was used because of the small number of people who were willing to respond to

the time trade-off question asked in the survey. Future analyses still need to be done to identify

better measures of health utility among the bereaved, and capture the information prospectively

rather than retrospectively.

Finally, in this study I assumed that if a suicide is prevented, the surviving individual

experiences fair health the first year and then good health the remainder of his or her life. This is

an ideal situation and may not be achievable by all interventions that prevent a suicide death.

Even though there is much competition for money to improve health outcomes in the US,

this study shows that there are substantial economic and quality of life losses that could

potentially be offset or reduced by investing in the right types of suicide prevention activities.

CHAPTER VI: Summary of Contributions and Future Research

In 2015, national guidelines were established in the US for responding to grief, trauma, and distress after a suicide.[181] These guidelines recommended specific goals and objectives for research on suicide loss, which are still in great need of being addressed.[182] This dissertation has been able to address and contribute to several of the recommendations in the followings ways:

- Goal 11: This dissertation has used appropriate and rigorous scientific methods to identify and measure the impact of those who are exposed to a suicide death.

- Objective 11.1: This dissertation used a large nationally representative sample. It also provided clear descriptions of relevant sample characteristics, comparing those who were exposed to those not exposed, and understanding the relationship of those exposed to the suicide decedent.

- Goal 12: This dissertation has established valid and reliable estimates of the percentage of adults and, for the first time, the percentage of adolescents ever exposed to suicide. It examines the level of effects and identifies the prevalence of long-term bereavement complications.

- Objective 12.1: The criteria used to define survivorship of suicide loss were clearly given in this dissertation. The definition was based on self-identification as someone whose life had been personally affected by a suicide. Other measures of effect were recorded and could be used in future analyses to determine a more stringent definition of survivors of suicide loss.

- Objective 12.3: Several measurements were used in this dissertation to capture the broader impact of suicide on the personal, interpersonal, and spiritual functioning of survivors of suicide loss.

- Goal 13: This dissertation examined potential risk factors for those who self-identified as survivors of suicide loss compared to those who did not. More analyses can still be done with the data that were collected to identify the characteristics of respondents that predict complicated grief and those that predict suicidal ideation following the suicide exposure.

- Objective 13.4: Gender, culture, and ethnicity were examined to some extent in this dissertation. The relationship between these measures and self-identifying as a survivor of suicide loss was also analyzed.

- Goal 14: No data were gathered on the efficacy of interventions; however, the use of and preferences for online social support was gathered in this dissertation. Barriers to talking about suicide loss and receiving professional help with the loss were identified and provided in the appendices.

This dissertation also went beyond the scope of these national goals and recommendations by exploring the burden experienced among the bereaved from an economic and health-related quality of life perspective. Substantial quality of life and productivity losses were found among those bereaved by suicide. These substantial losses from suicide alone suggest that grief from all causes of death poses a very substantial burden on society. A small amount of this burden was observed in the changes in medical expenditures in Chapter II, but the majority of burden is experienced outside the health care setting. This suggests that a public health approach is needed to support and help those bereaved.

As a public health issue, future studies will need to quantify the economic and quality of life burden of bereavement in the US more completely. Such studies could examine the effects of bereavement on health care expenditures and utilization for specific types of death. For example, given the more disruptive nature of a suicide death, those bereaved by suicide may experience larger changes in medical expenditures compared to those bereaved by a death from natural causes. The QALY and productivity losses from other types of death also need to be better understood and compared to one another. If there are significant differences in the magnitude or quantity of losses across different types of death, then it may be valuable to invest more resources in preventing deaths that result in the greatest losses.

Future studies can also identify those who are at greatest risk of experiencing the largest impacts from bereavement. This dissertation identified large variability in the experience of those exposed to a death. Some individuals had large increases in medical expenditures. Others had large reductions in their quality of life and large productivity losses. Prediction models and screening tools could be developed to identify individuals at risk of experiencing large losses and expenditures. This targeted approach could help minimize the large burden experienced in society from grief and bereavement.

APPENDICES

APPENDIX A: Additional Analyses Exploring the Medical Costs Associated with Grief and Bereavement

Determination of Relationship to the Deceased

In the MarketScan dataset there is the variable *emprel* which is the individual's relationship to the employee or primary beneficiary. In order to define the relationship to the deceased I used the SAS code outlined below. *Emprel* is the relationship of the bereaved or not bereaved to the primary beneficiary. *Emprel_hosp* is the relationship of the hospitalized or deceased individuals to the primary beneficiary. Both *emprel* and *emprel_hosp* have the following response options: (1) Employee (2) Spouse (3) Child/Other. To distinguish between "child" and "other" I used age restrictions where *age2* is the age of the bereaved or not bereaved in 2009 and age2_hosp is the age of the hospitalized or deceased in 2009.

SAS code:

if emprel="3" & emprel_hosp="3" then loss="siblingdied";

if emprel in ("1","2") & emprel_hosp="3" & age2-age2_hosp>=16 then loss="childdied";

if emprel in ("1","2") & emprel_hosp="3" & age2-age2_hosp<16 then loss="otherdied";

if emprel in ("1","2") & emprel_hosp="2" then loss="spousedied"; *I deleted all cases where the deceased individual was the employee;

if emprel="3" & emprel_hosp="2" then loss="parentdied";

Trend Analysis for Additional Cost Outcomes

Adults Whose Spouse Died

Figure A-1. Average Monthly Inpatient (IP) and Emergency Room (ER) Costs Among Adults Whose Spouse Died or Was Hospitalized
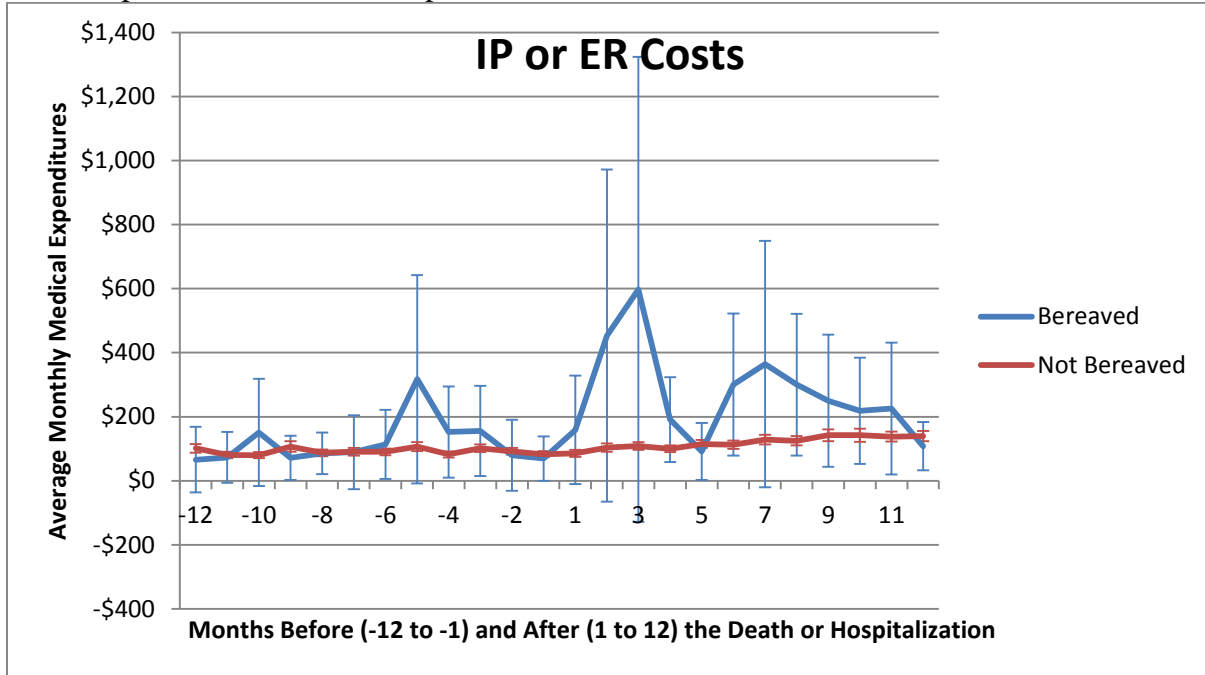
Note: These do not include pregnancy related costs. The error bars are 95% confidence intervals around the mean.

Figure A-2. Average Monthly Grief-Related Outpatient (OP) Costs Among Adults Whose Spouse Died or Was Hospitalized
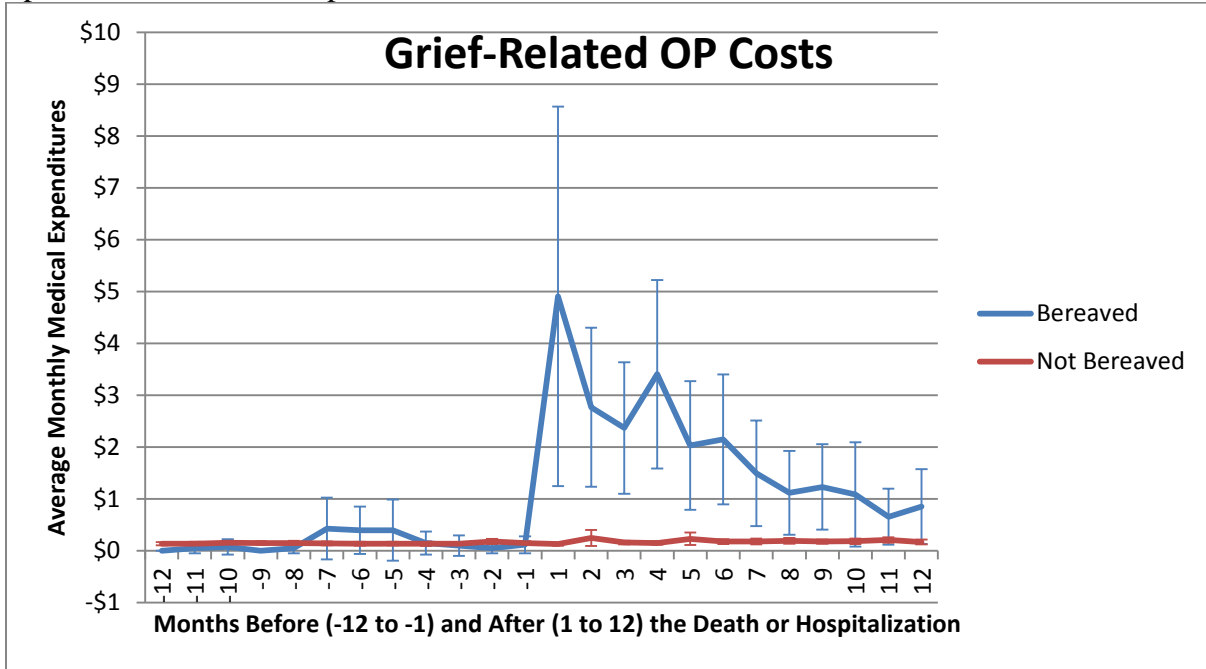
Note: These do not include pregnancy related costs. The error bars are 95% confidence intervals around the mean.

Figure A-3. Average Monthly Outpatient (OP) Mental or Substance Use Disorder (MSUD) Costs Among Adults Whose Spouse Died or Was Hospitalized
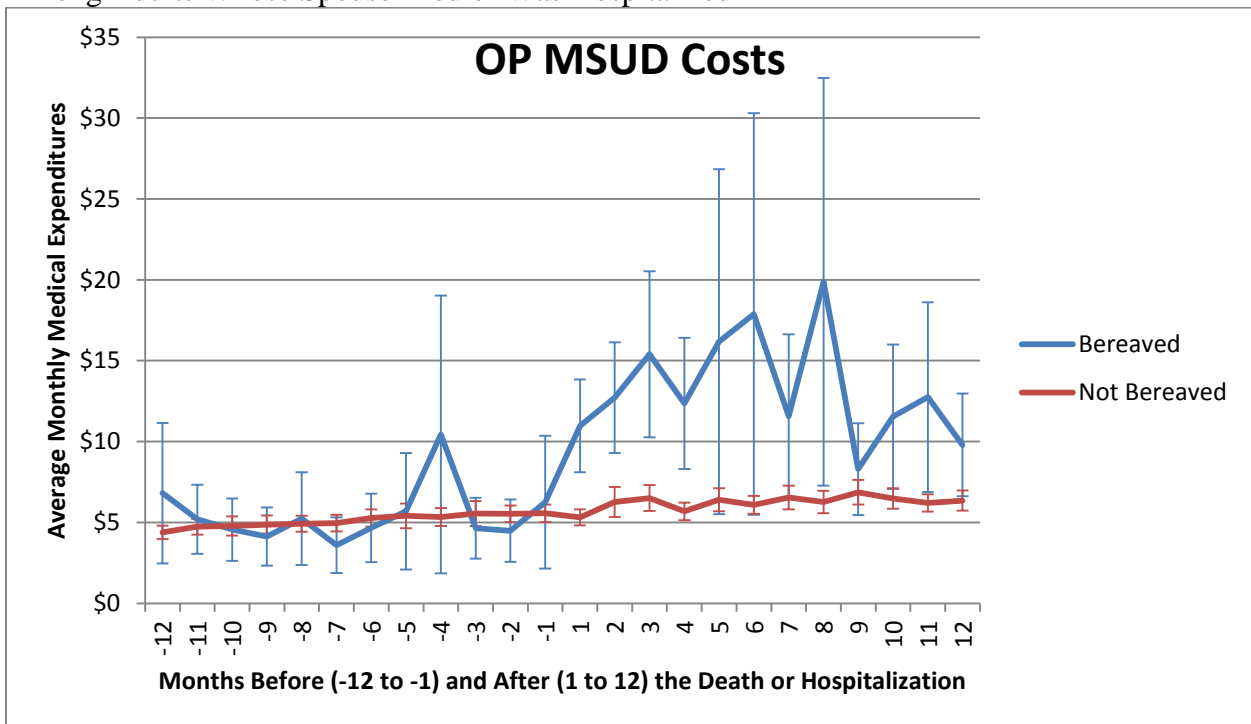
Note: These do not include pregnancy related costs. The error bars are 95% confidence intervals around the mean.

Figure A-4. Average Monthly Other Outpatient (OP) Costs Among Adults Whose Spouse Died or Was Hospitalized
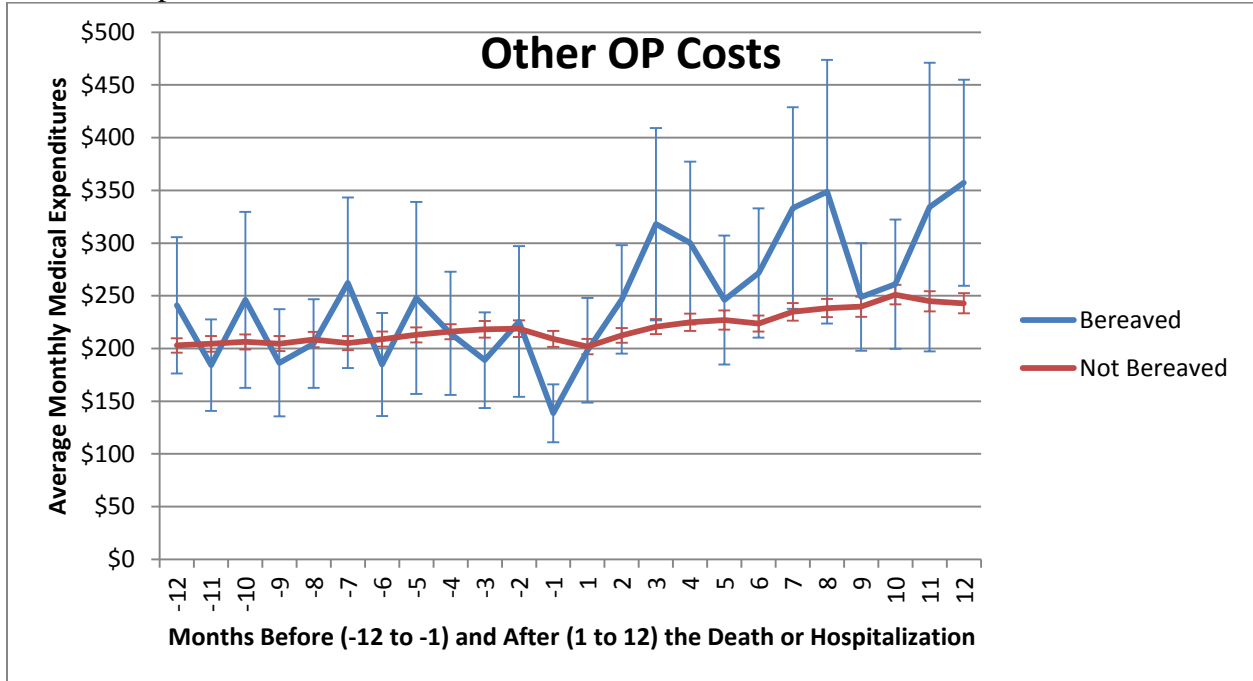
Note: These do not include pregnancy related costs. The error bars are 95% confidence intervals around the mean.

Figure A-5. Average Monthly Medication Costs Among Adults Whose Spouse Died or Was Hospitalized
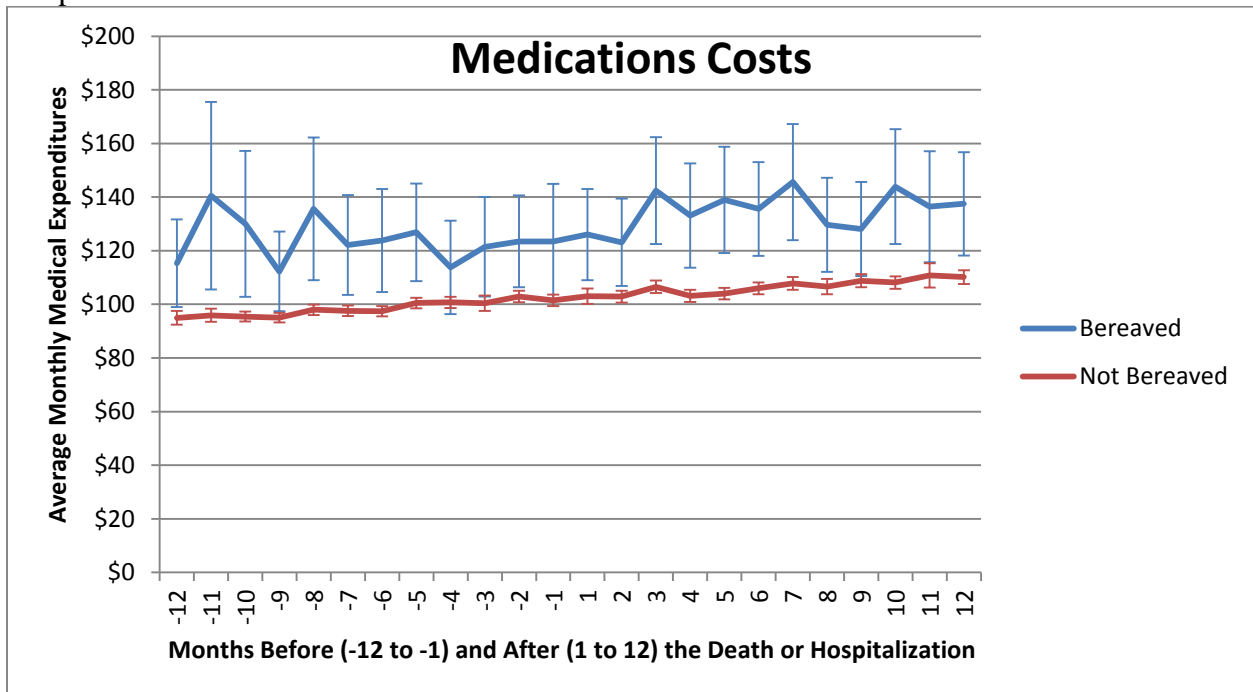
Note: The error bars are 95% confidence intervals around the mean.

Figure A-6. Average Monthly Inpatient (IP) or Emergency Room (ER) Costs Among Adults Whose Child Died or Was Hospitalized
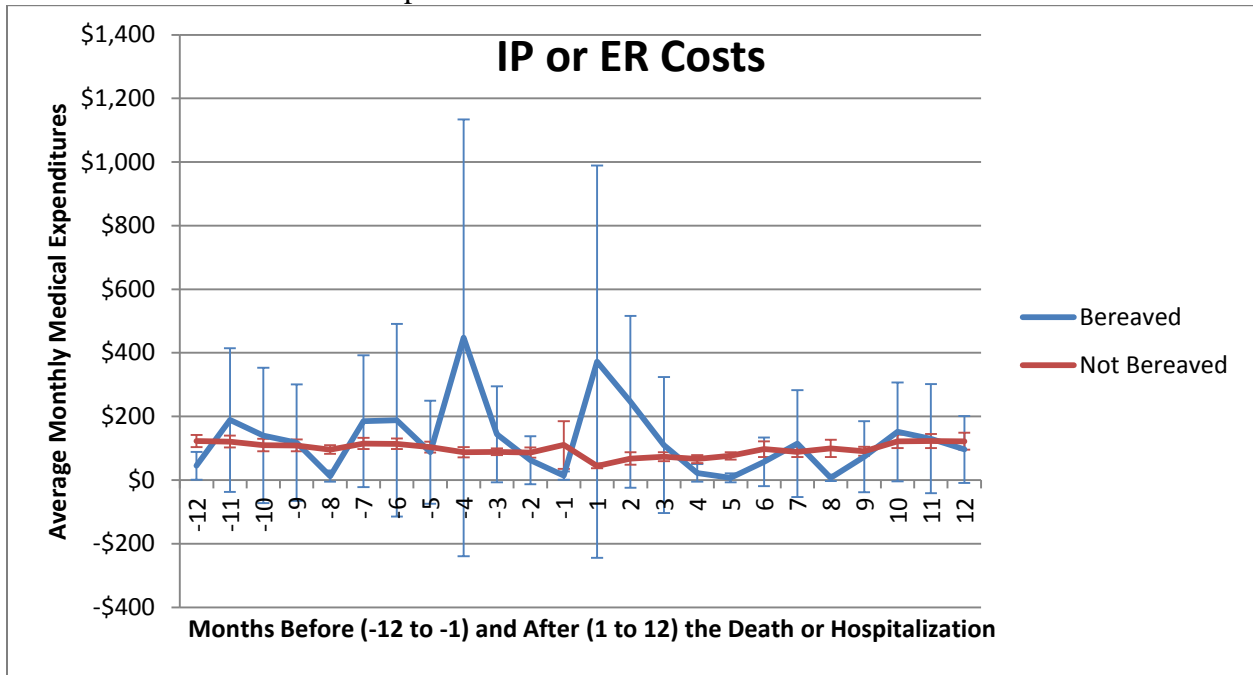
Note: The error bars are 95% confidence intervals around the mean.

Figure A-7. Average Monthly Grief-Related Outpatient (OP) Costs Among Adults Whose Child Died or Was Hospitalized
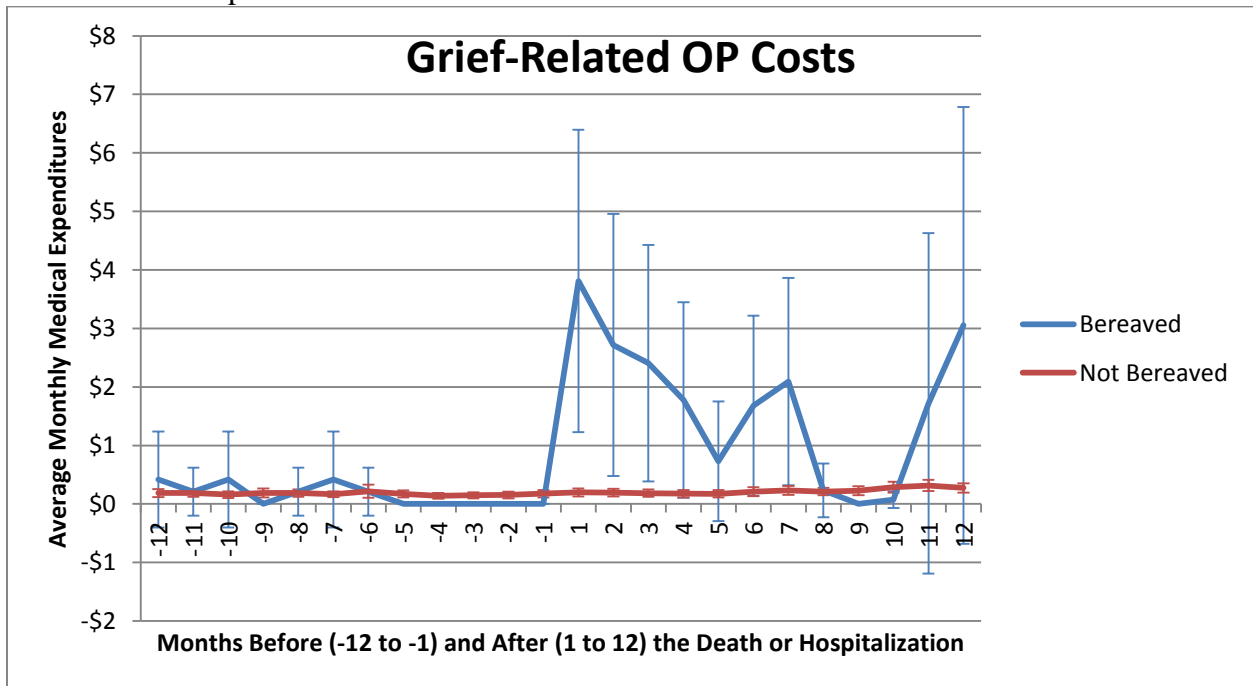
Note: The error bars are 95% confidence intervals around the mean.

Figure A-8. Average Monthly Outpatient (OP) Mental or Substance Use Disorder (MSUD) Costs Among Adults Whose Child Died or Was Hospitalized
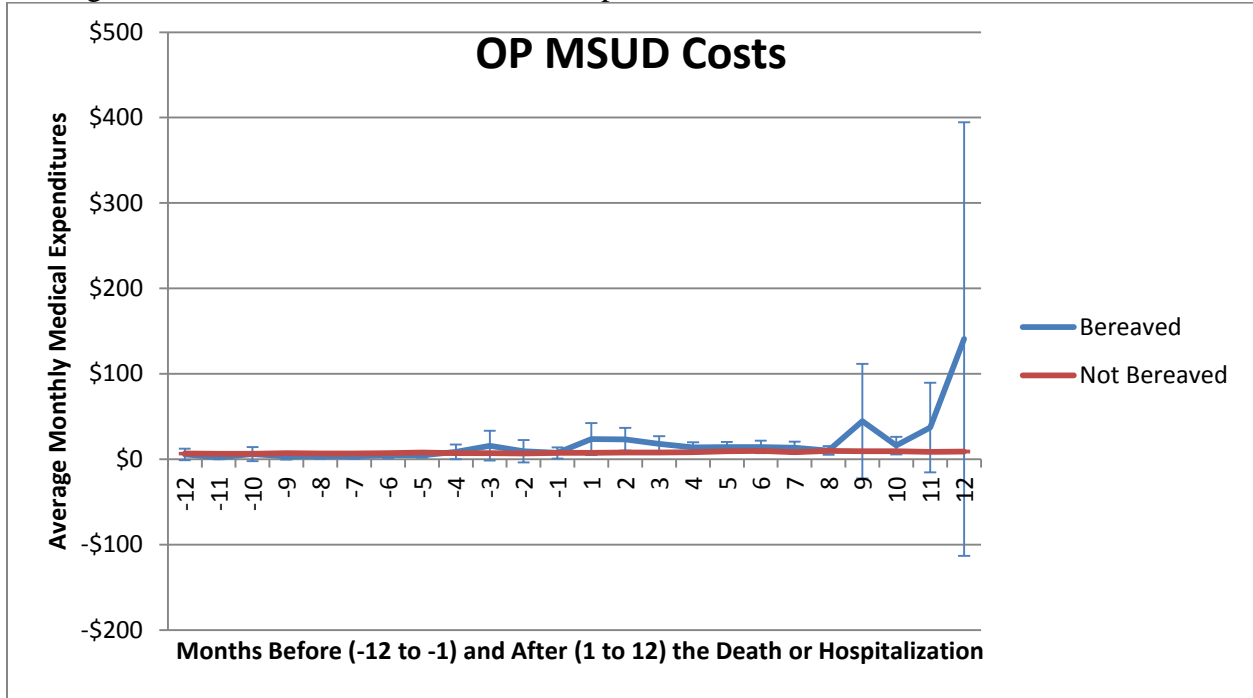
Note: The error bars are 95% confidence intervals around the mean.

Figure A-9. Average Monthly Other Outpatient (OP) Costs Among Adults Whose Child Died or Was Hospitalized
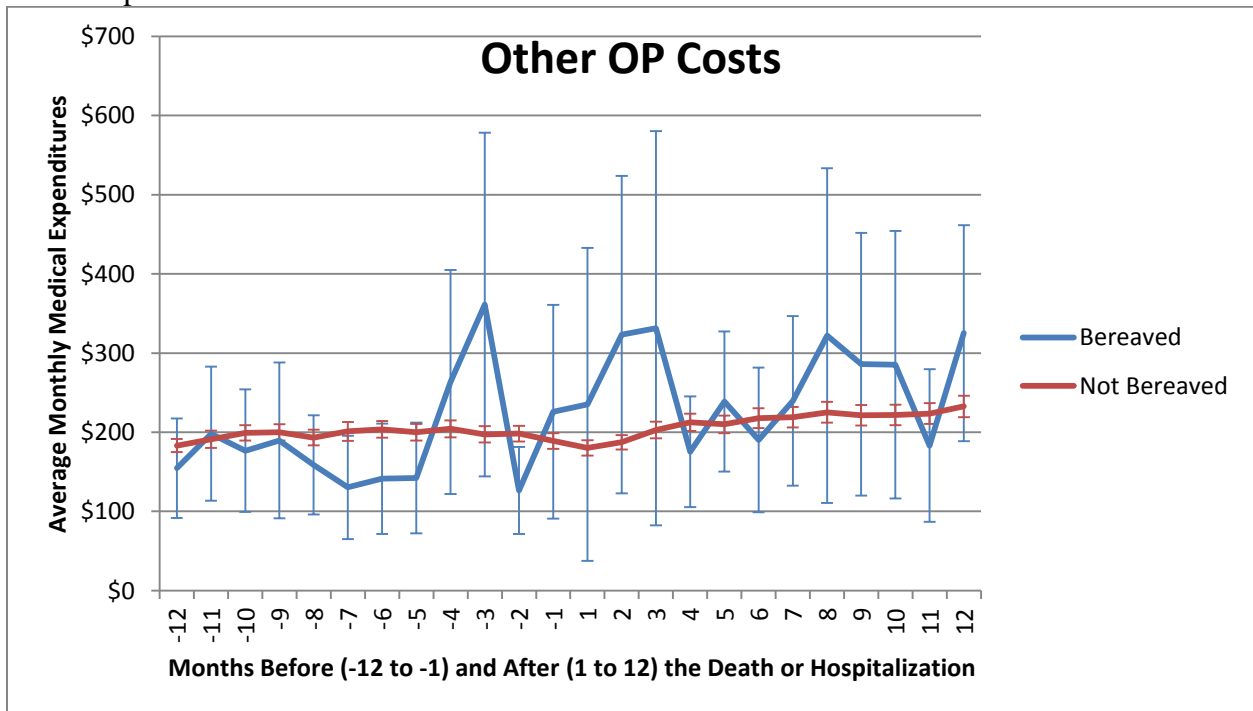
Note: The error bars are 95% confidence intervals around the mean.

Figure A-10. Average Monthly Medication Costs Among Adults Whose Child Died or Was Hospitalized
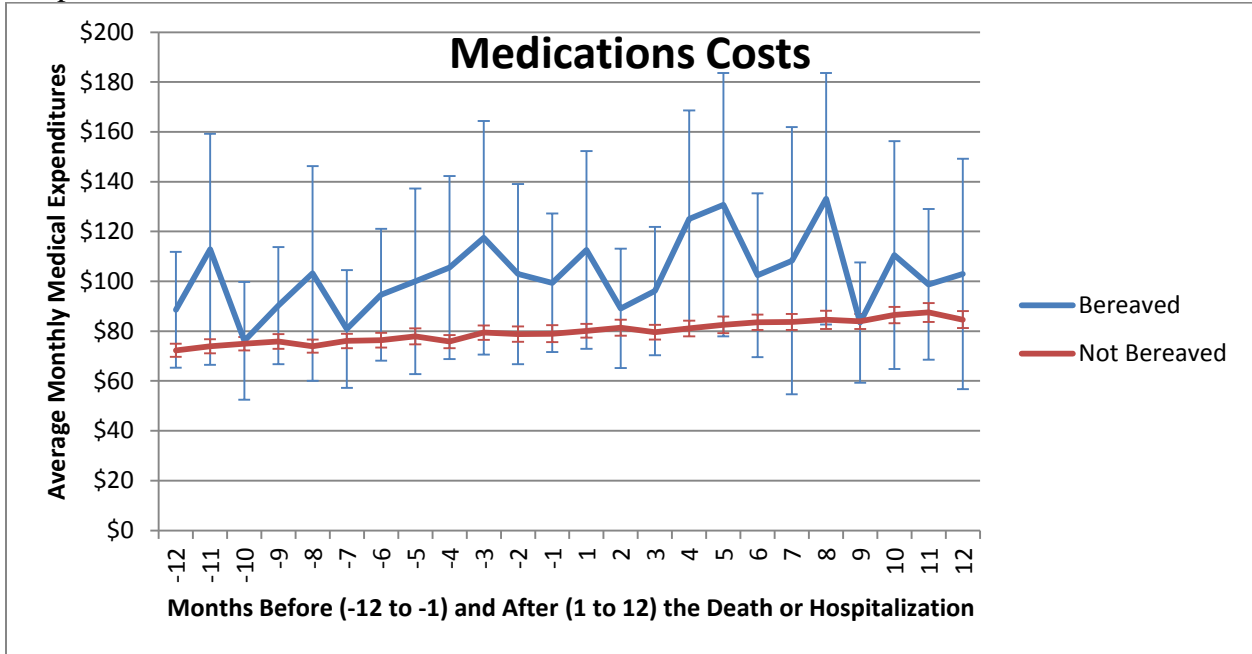
Note: The error bars are 95% confidence intervals around the mean.

Child Whose Parent Died

Figure A-11. Average Monthly Inpatient (IP) or Emergency Room (ER) Costs Among Children Whose Parent Died or Was Hospitalized
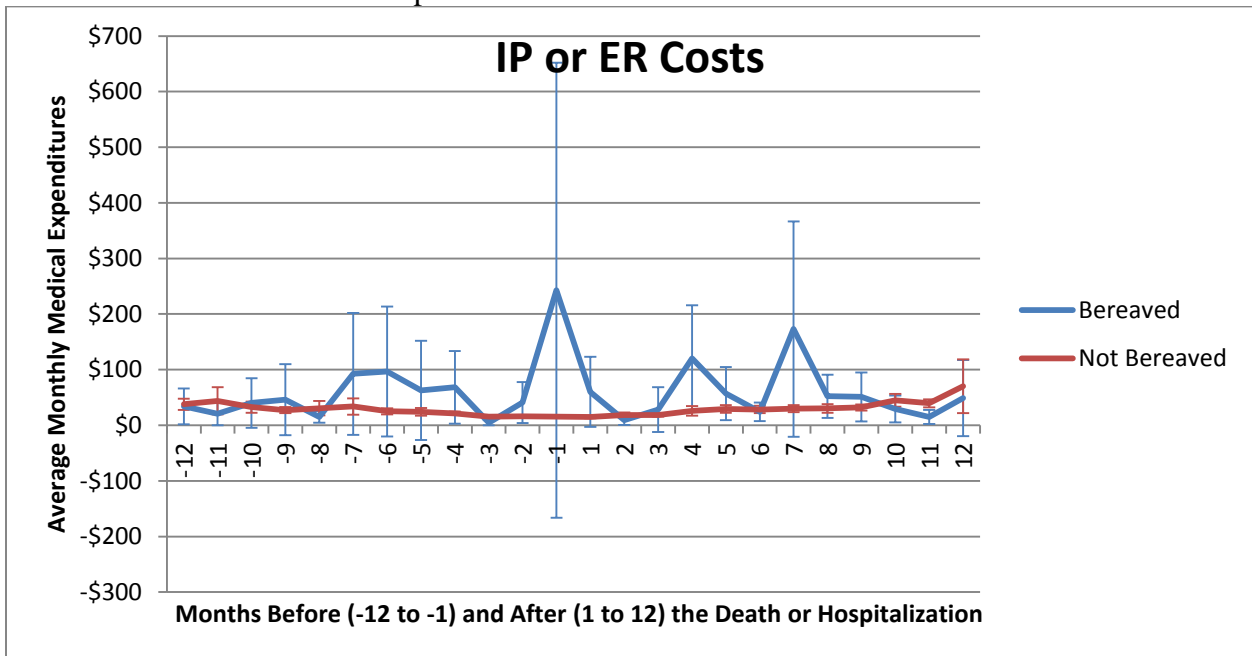
Note: The error bars are 95% confidence intervals around the mean.

Figure A-12. Average Monthly Grief-Related Outpatient (OP) Costs Among Children Whose Parent Died or Was Hospitalized
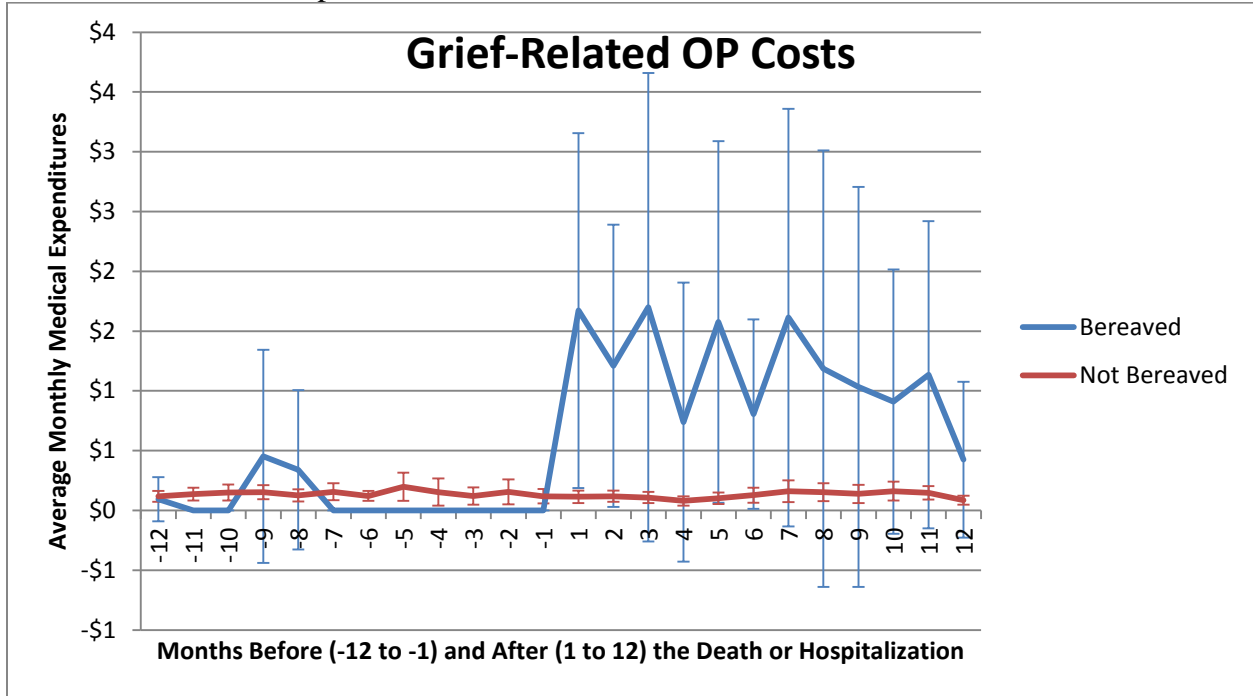
Note: The error bars are 95% confidence intervals around the mean.

Figure A-13. Average Monthly Outpatient (OP) Mental or Substance Use Disorder (MSUD) Costs Among Children Whose Parent Died or Was Hospitalized
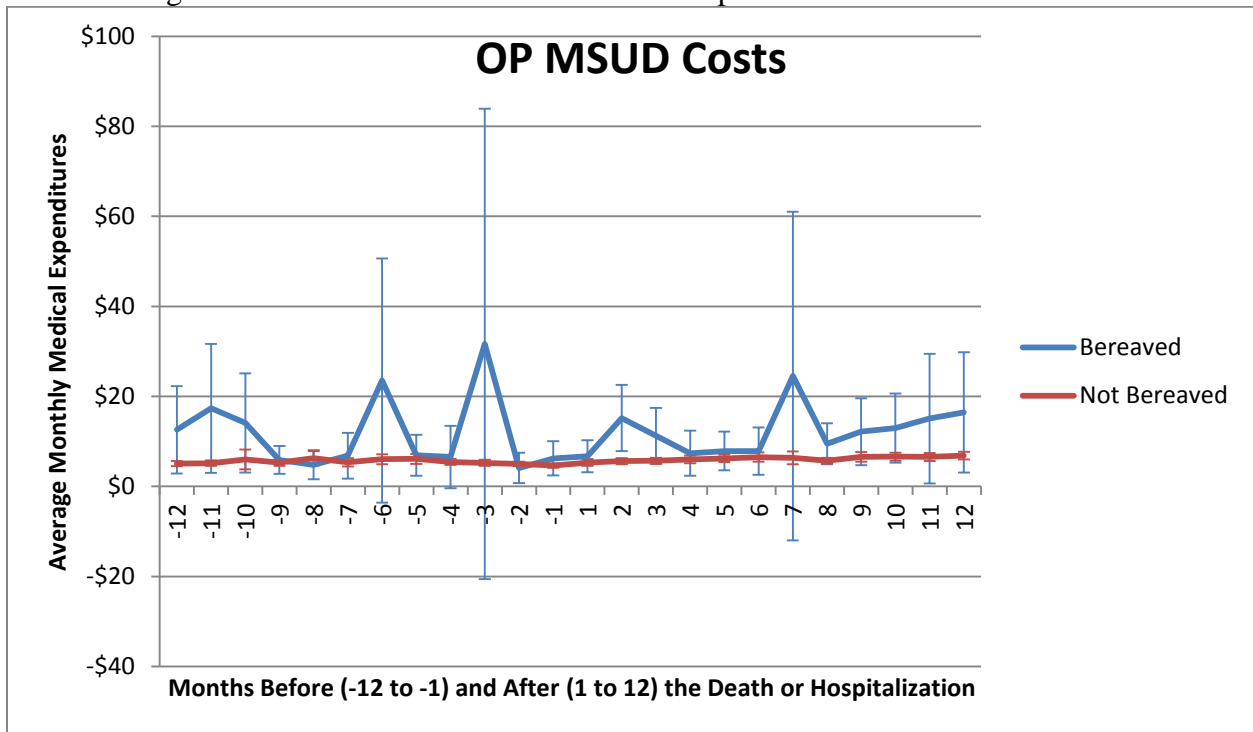
Note: The error bars are 95% confidence intervals around the mean.

Figure A-14. Average Monthly Other Outpatient (OP) Costs Among Children Whose Parent Died or Was Hospitalized
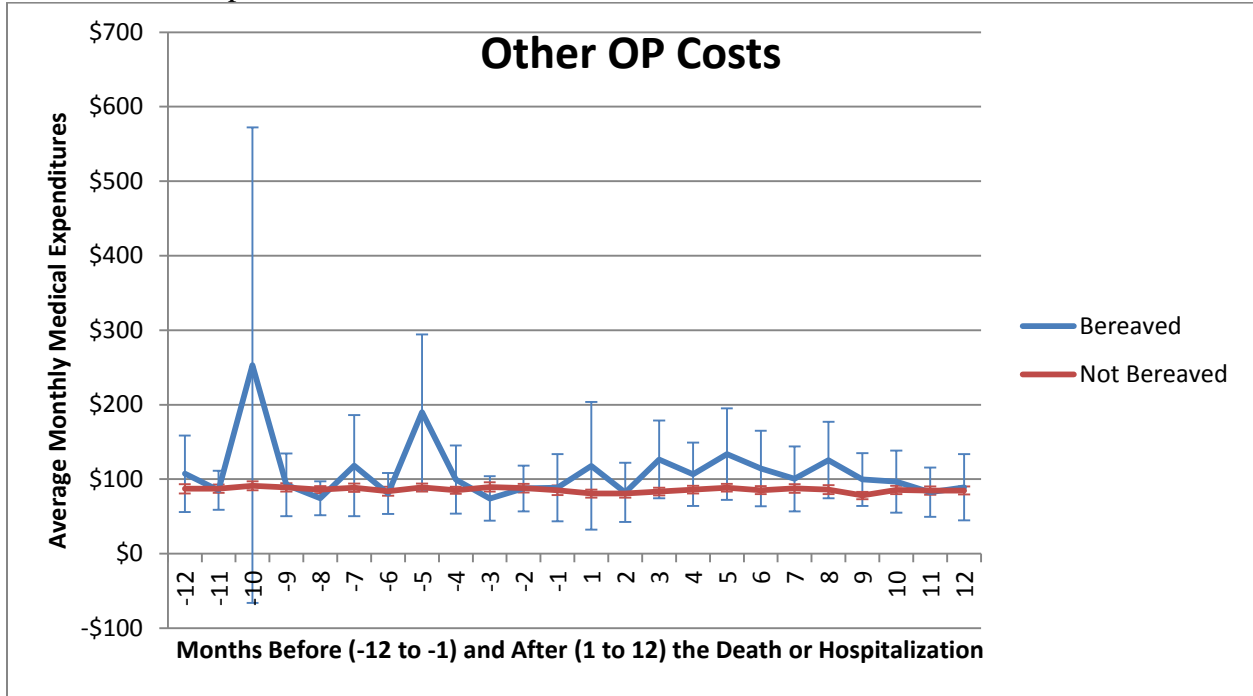
Note: The error bars are 95% confidence intervals around the mean.

Figure A-15. Average Monthly Medication Costs Among Children Whose Parent Died or Was Hospitalized

Note: The error bars are 95% confidence intervals around the mean.

Figure A-16. Average Monthly Inpatient (IP) or Emergency Room (ER) Costs Among Children Whose Sibling Died or Was Hospitalized
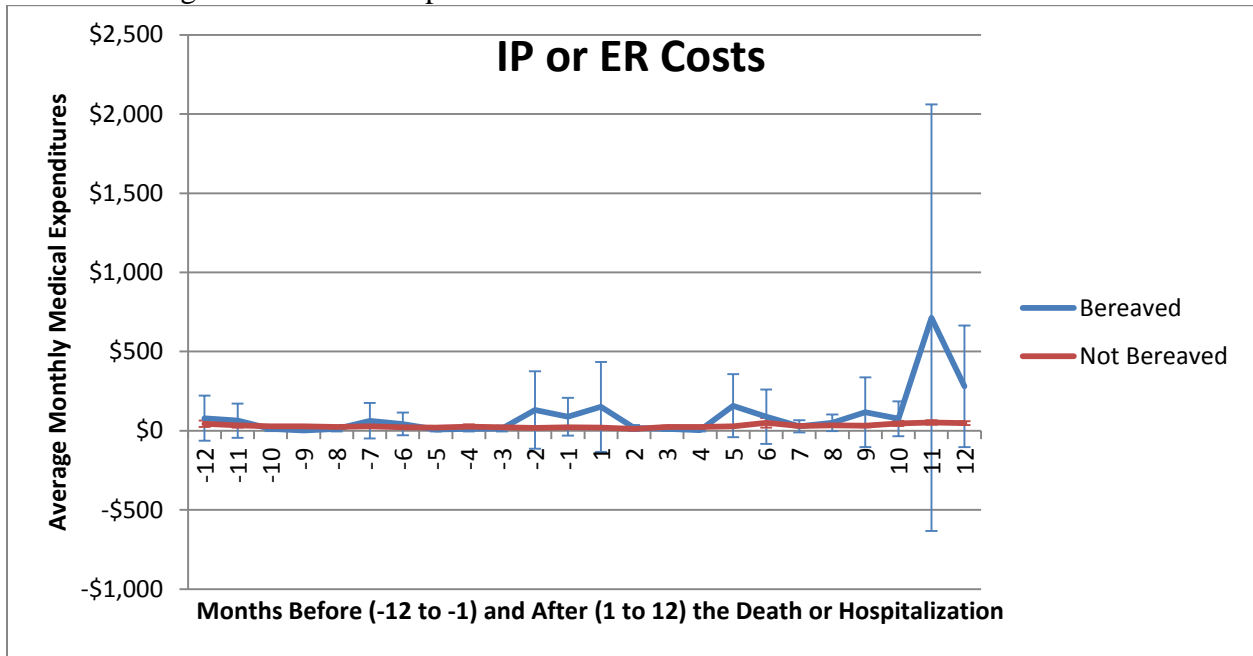
Note: The error bars are 95% confidence intervals around the mean.

Figure A-17. Average Monthly Grief-Related Outpatient (OP) Costs Among Children Whose Sibling Died or Was Hospitalized
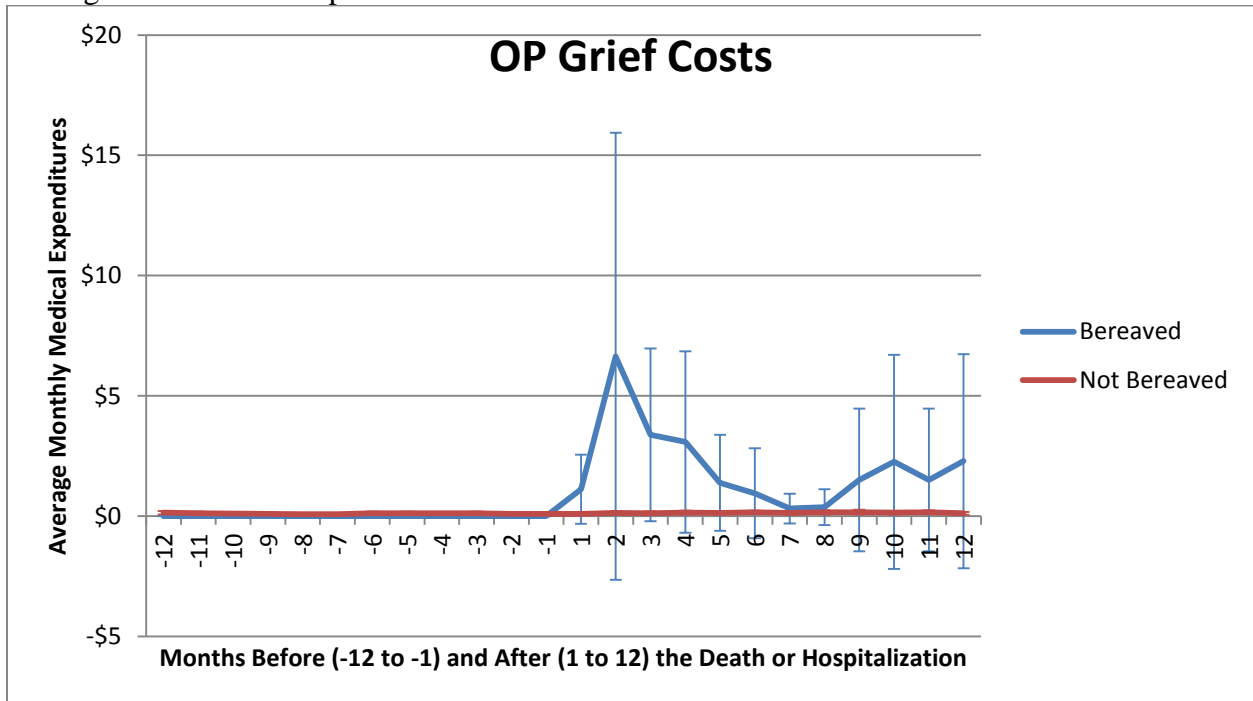
Note: The error bars are 95% confidence intervals around the mean.

Figure A-18. Average Monthly Outpatient (OP) Mental or Substance Use Disorder (MSUD) Costs Among Children Whose Sibling Died or Was Hospitalized
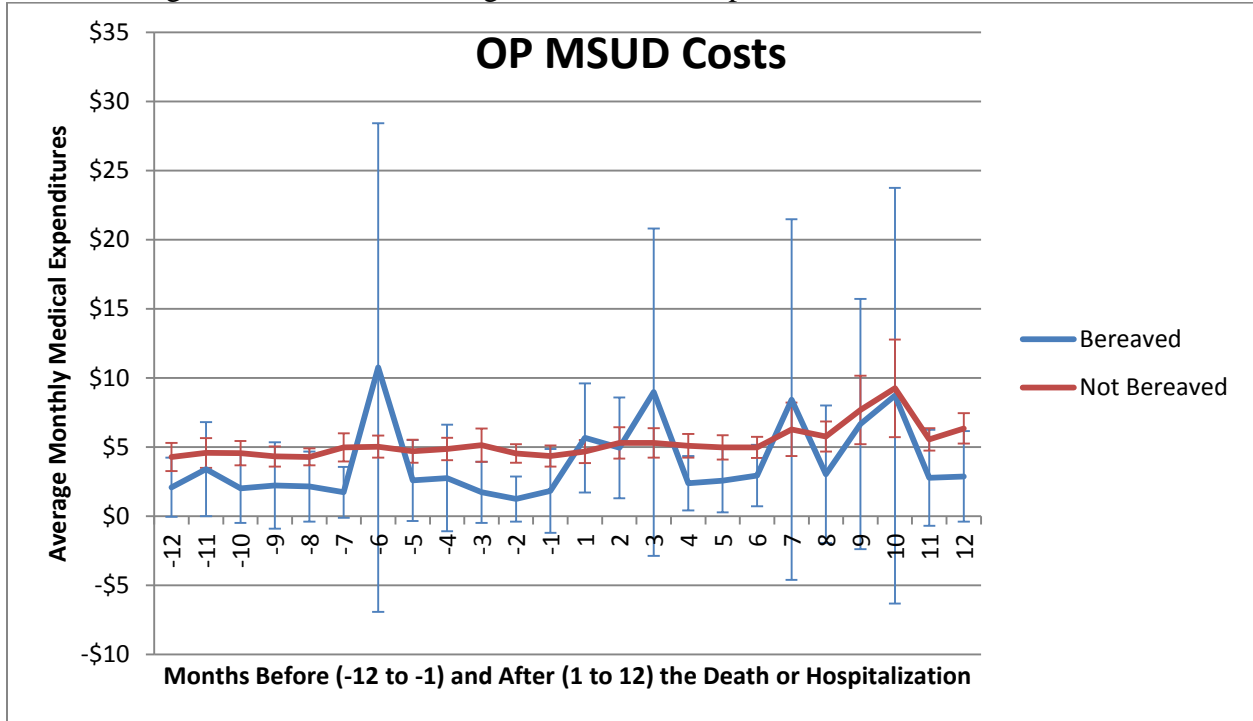
Note: The error bars are 95% confidence intervals around the mean.

Figure A-19. Average Monthly Other Outpatient (OP) Costs Among Children Whose Sibling Died or Was Hospitalized
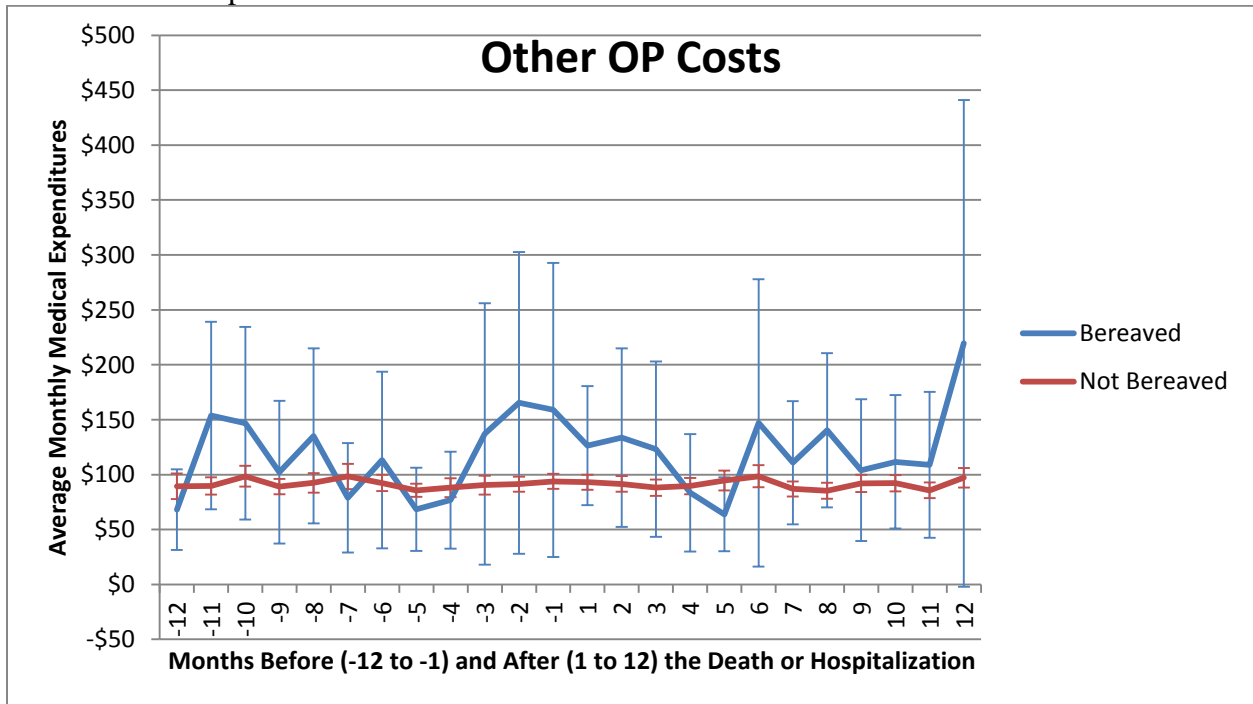
Note: The error bars are 95% confidence intervals around the mean.

Figure A-20. Average Monthly Medication Costs Among Children Whose Sibling Died or Was Hospitalized
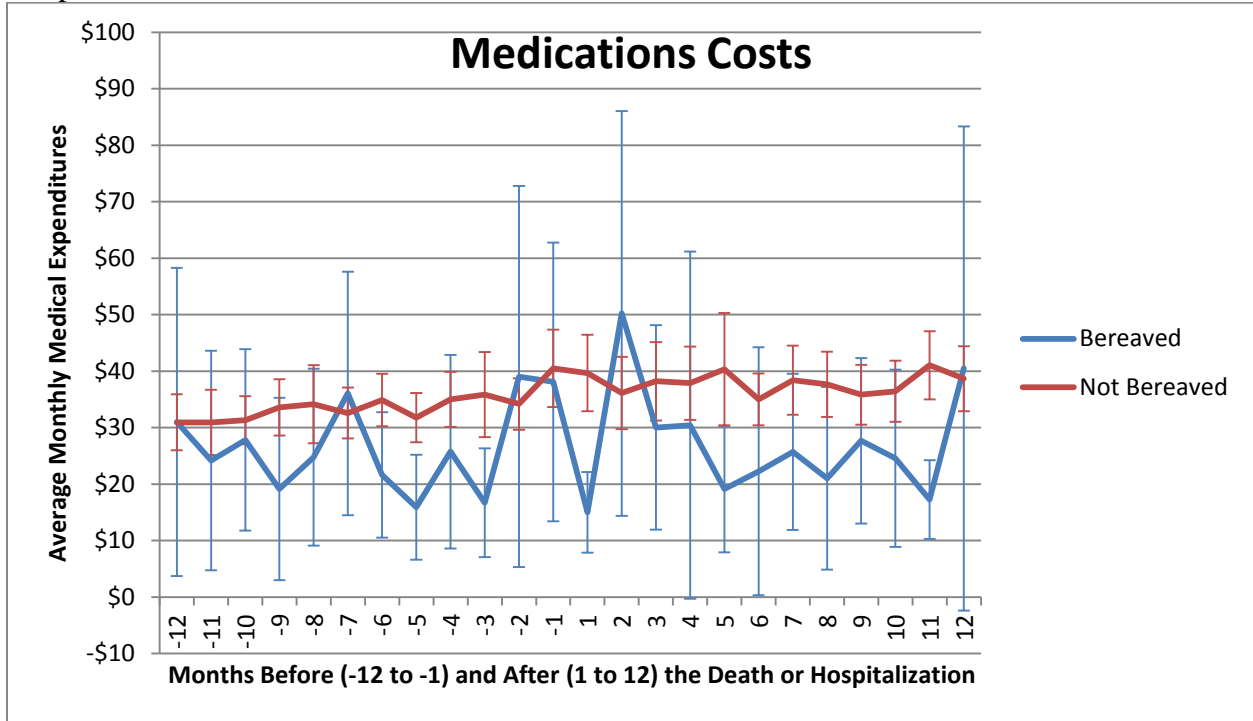
Note: The error bars are 95% confidence intervals around the mean.

Trend Analysis in Categories of Procedures and Medications

Method

For adults whose spouse died, adults who child died, children whose parent died, and children whose sibling died, I examined the procedures and medications with the largest average expenditures over four sequential time periods. The time periods were the 12 to 7 months before, 6 to 1 month before, 1 to 6 months after, and 7 to 12 months after the death of a family member. Clinical classification software categories, made available by the Agency for Healthcare Research and Quality, were used to categorize claims according to the primary procedure performed. MarketScan Commercial Claims and Encounters Database also includes categories of outpatient medication claims by therapeutic class. Average costs for all of the bereaved

individuals within each timeframe were calculated for all procedure categories performed in an outpatient setting, procedure categories performed in an inpatient or emergency room setting, and outpatient medication categories. The list of categories was ranked by those categories that had the largest average expenditures within each timeframe. The percentage of people who had a claim within one of the categories was also calculated.

Summary of Findings

One of the main purposes of this analysis was to examine whether there were specific types of services that were driving increases in the 6 months prior to the death. I did see some increases in expenditures on durable medical equipment (DME) in the inpatient setting during the 6 months prior to the death of a spouse or child. Other outpatient diagnostic procedures (interview, evaluation, consultation) also appeared to increase some in the 6 months before and especially in the 6 months after the death of a child. Antidepressants increased slightly over time for all types of death, peaking in the 6 months after the death. Across all relationship types, there was also a large amount of costs per person for claims without a procedure classification.

From this analysis it still remains unclear what the underlying drivers of changes in medical expenditures are. A major limitation to this analysis is the small sample size and large variability in expenditures. In order to quantify statistical changes in these smaller subgroups of procedure and medication classifications, I will need a larger sample of individuals.

Common Support Plots for Outcomes

Summary

The plots below show the regions of common support for the predicted probability of a family member's death. These plots show that there is weak overlap in the predicted probabilities, particularly for adults whose child died and children whose parent or sibling died. I removed these areas of weak or no overlap, and in some cases this removed nearly half of the bereaved individuals from the sample. Another important finding from these graphs is that many of the cases of bereaved individuals had a predicted probability less than 0.5. This indicates that there is large uncertainty about whether a family member will die in the hospital, even when using hundreds of variables in a random forest model.

Figure A-21. Histogram of Predicted Probabilities of Death Among Adults Whose Spouse Died and Adults Whose Spouse Did Not Die
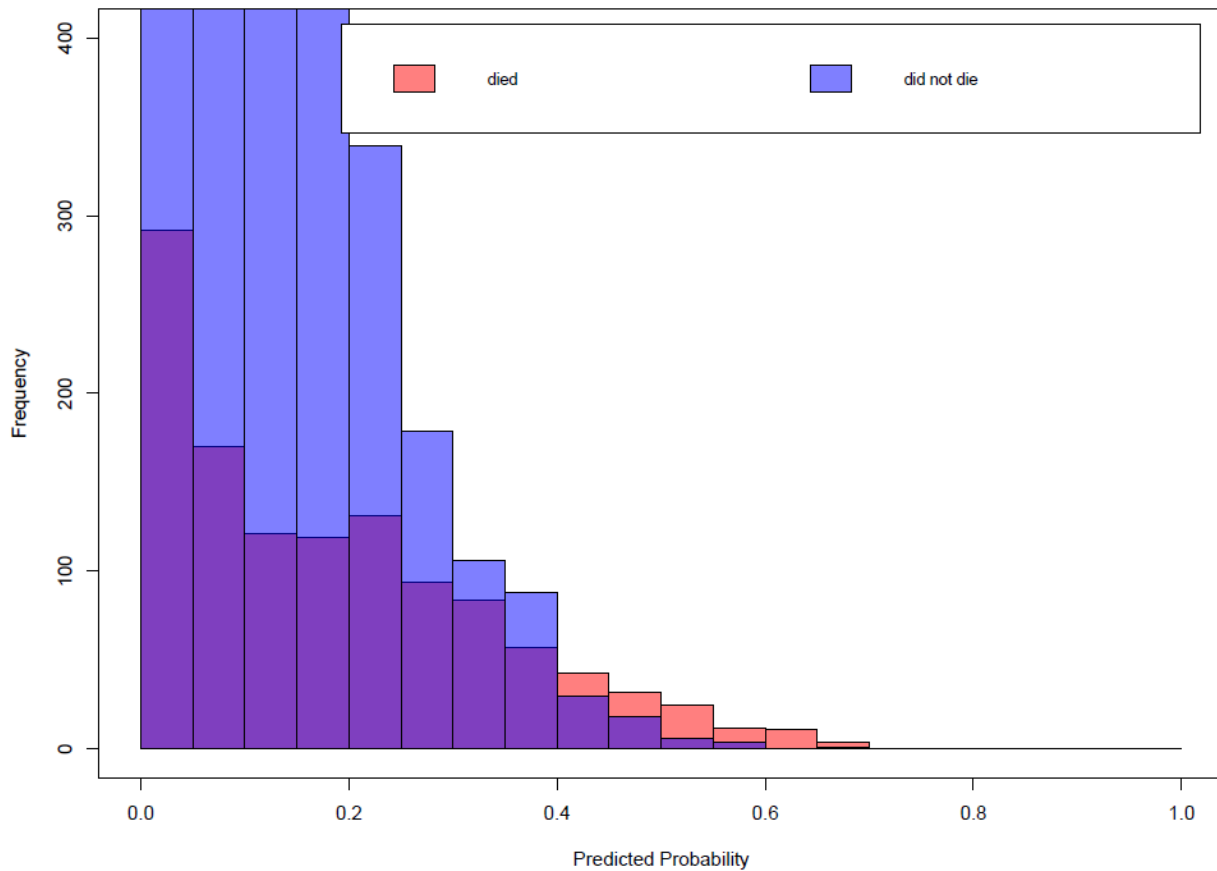
Note: The purple region is where the predicted probabilities of those whose spouse died and those whose spouse did not die overlapped. The predicted probability of death was estimated using a random forest model including potential confounding variables that were related to the change in total annual expenditures. I assumed common support for all observations with predicted probability of less than or equal to 0.5. Those above that threshold were excluded from the final analysis.

Figure A-22. Histogram of Predicted Probabilities of Death Among Adults Whose Child Died and Adults Whose Child Did Not Die
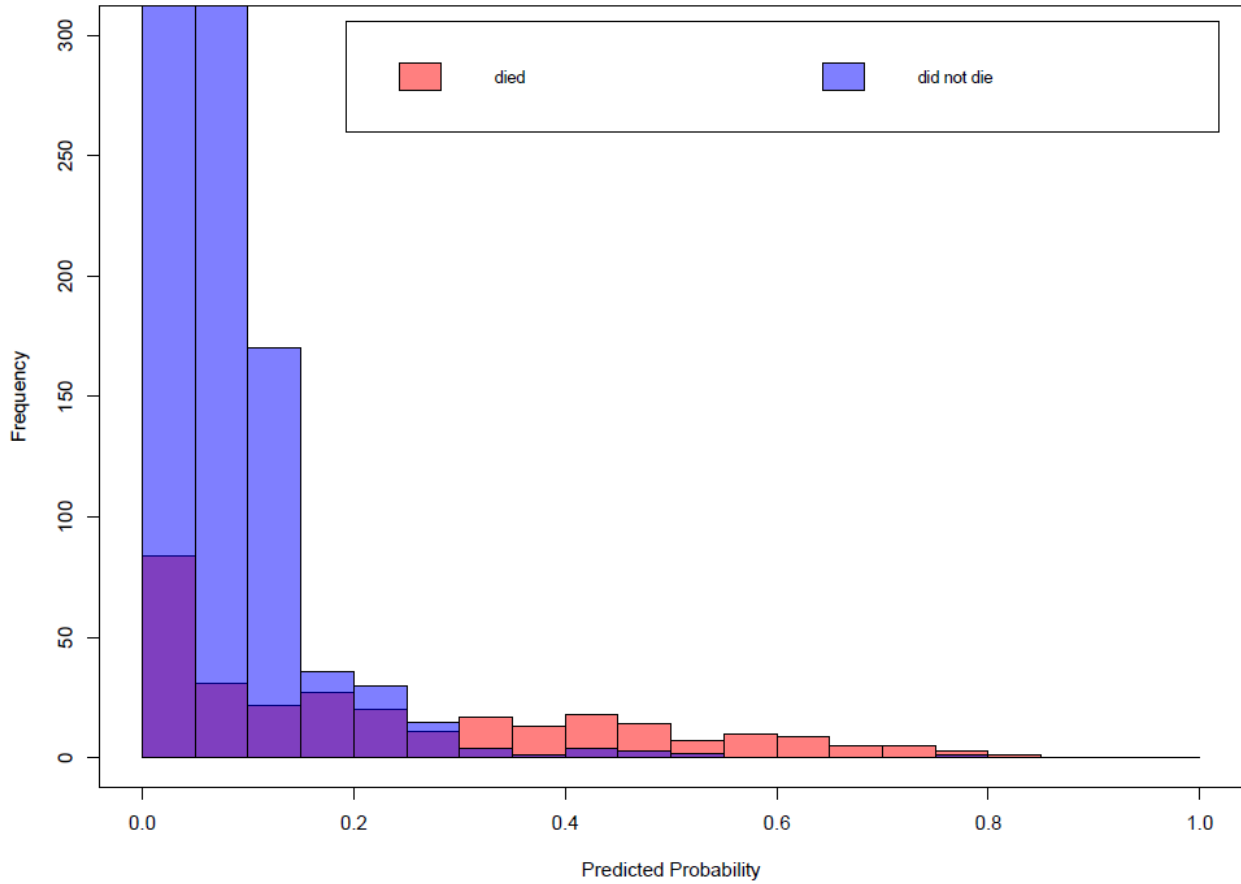
Note: The purple region is where the predicted probabilities of those whose child died and those whose child did not die overlapped. The predicted probability of death was estimated using a random forest model including potential confounding variables that were related to the change in total annual expenditures. I assumed common support for all observations with predicted probability of less than or equal to 0.3. Those above that threshold were excluded from the final analysis.

Figure A-23. Histogram of Predicted Probabilities of Death Among Children Whose Parent Died and Children Whose Parent Did Not Die
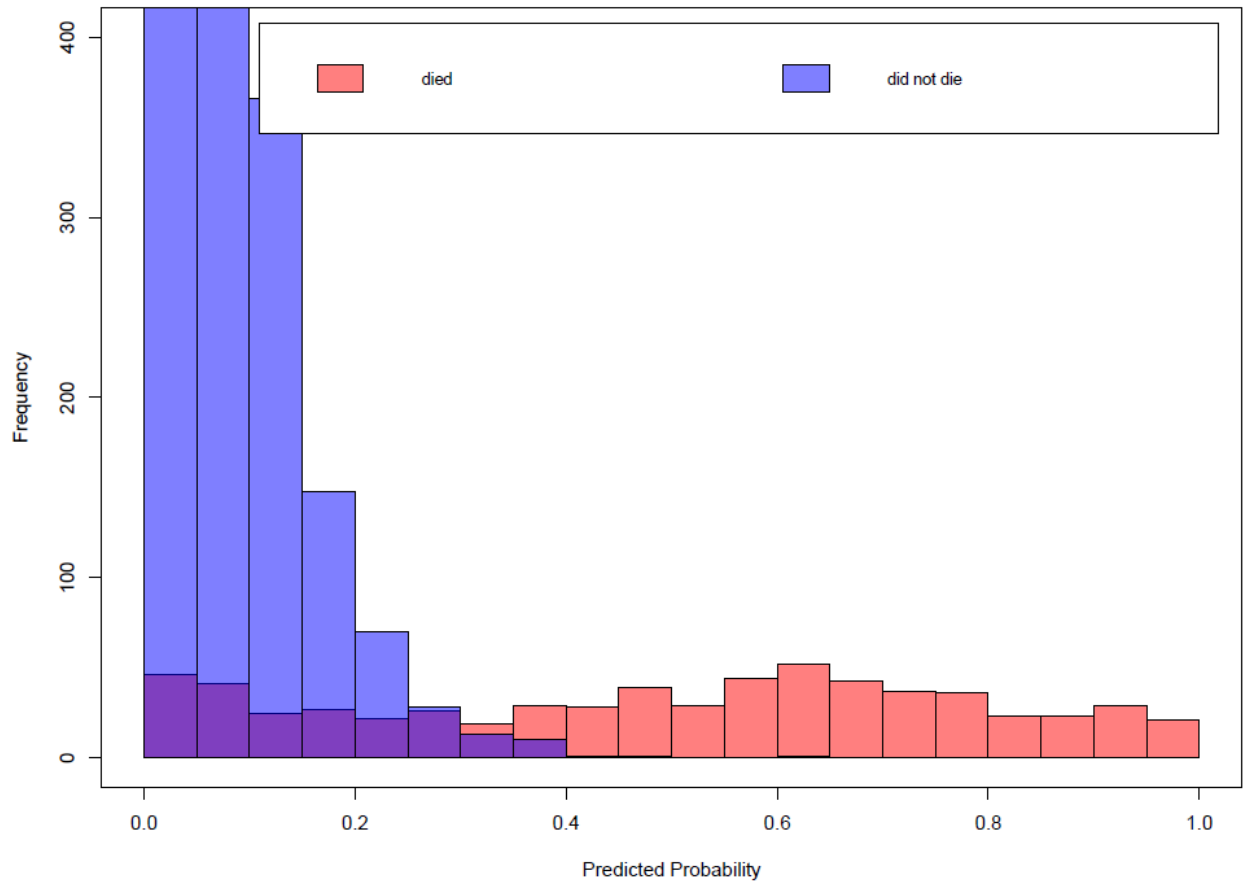
Note: The purple region is where the predicted probabilities of those whose parent died and those whose parent did not die overlapped. The predicted probability of death was estimated using a random forest model including potential confounding variables that were related to the change in total annual expenditures. I assumed common support for all observations with predicted probability of less than or equal to 0.4. Those above that threshold were excluded from the final analysis.

Figure A-24. Histogram of Predicted Probabilities of Death Among Children Whose Sibling Died and Children Whose Sibling Did Not Die
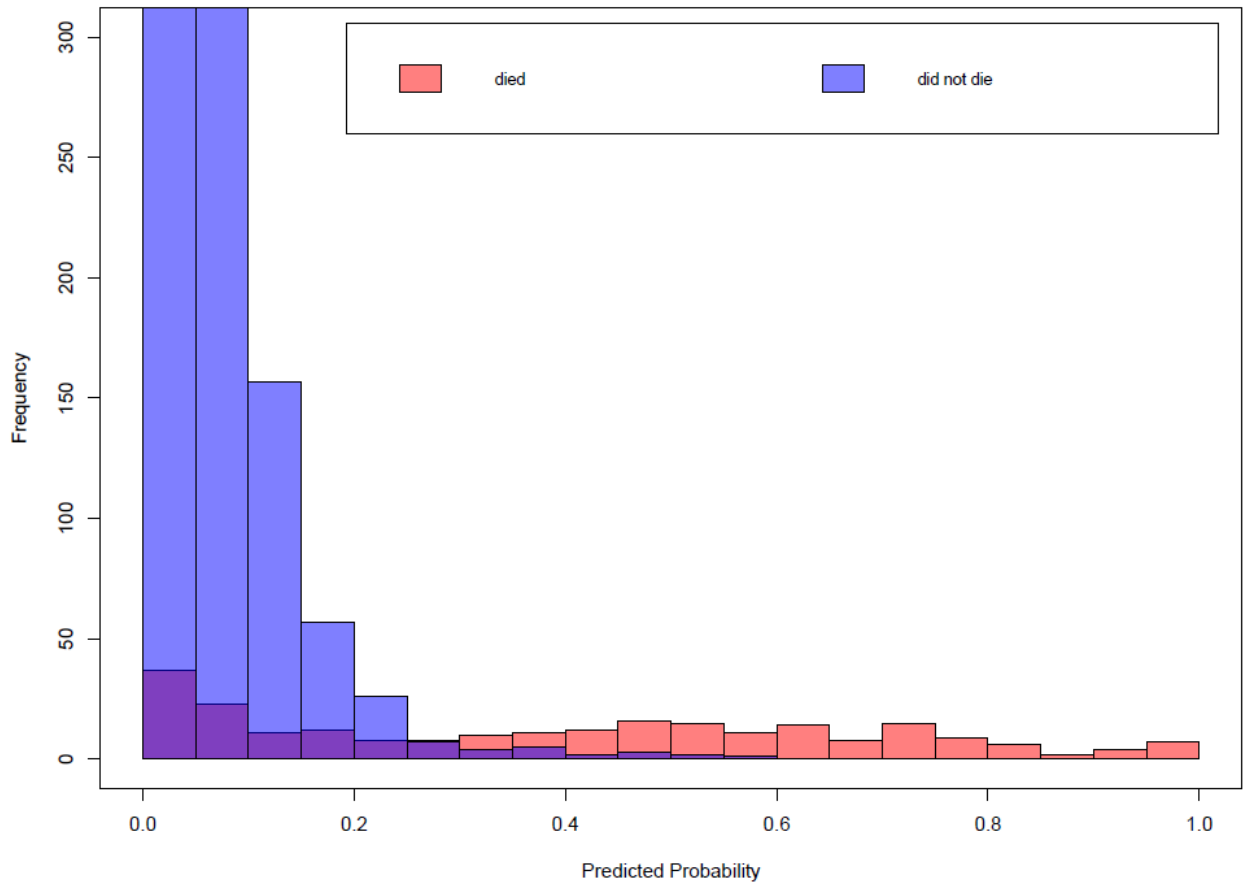
Note: The purple region is where the predicted probabilities of those whose sibling died and those whose sibling did not die overlapped. The predicted probability of death was estimated using a random forest model including potential confounding variables that were related to the change in total annual expenditures. I assumed common support for all observations with predicted probability of less than or equal to 0.3. Those above that threshold were excluded from the final analysis.

Analysis of Injury or Poisoning

I ran the analysis for those whose family member's hospitalization or death was related to poisoning or injury. Below are the preliminary results. One methodological difference in this analysis compared to what I did in the main paper is that I included all relationship types in one analysis. I also have not excluded pregnancy related costs in this analysis.

There were 275 cases where a family member's death was related to injury or poisoning. The cases with common support ranged between 98 (36%) and 217 (79%) depending on the outcome of interest, and the number of confounders ranged from 78 to 185 (Table 1).

Table A-1. Number of Confounders and Sample Size for Those Who Had a Family Member Die from Injury or Poisoning

Expenditure Outcomes	Number of Confounders	Bereaved Sample w/ CS	Bereaved w/o CS (excluded)	Not Bereaved w/ CS	Not Bereaved w/ CS & No 0 Propensities
Overall	185	149	126	22,901	5,294
Inpatient or emergency room	78	217	58	22,971	6,038
Outpatient grief-related	146	98	177	22,839	3,674
Outpatient mental or substance use expenditures, no grief diagnosis	103	148	127	22,883	4,255
Other outpatient	153	145	130	22,883	4,893
Medications	78	254	21	22,999	6,207

Abbreviations: CS, common support; w/, with; w/o, without.

There did not appear to be any major changes in the unadjusted average monthly medical expenditures for the bereaved family members (Figure 1). There was, however, a lot of variability in expenditures, particularly in the 5th month prior to the death of a family member, and in the 7-12 months after the death.

Figure A-25. Unadjusted Trend Analysis of Average Monthly Medical Expenditures Among Individuals Whose Family Member Was Hospitalized or Died from Injury or Poisoning
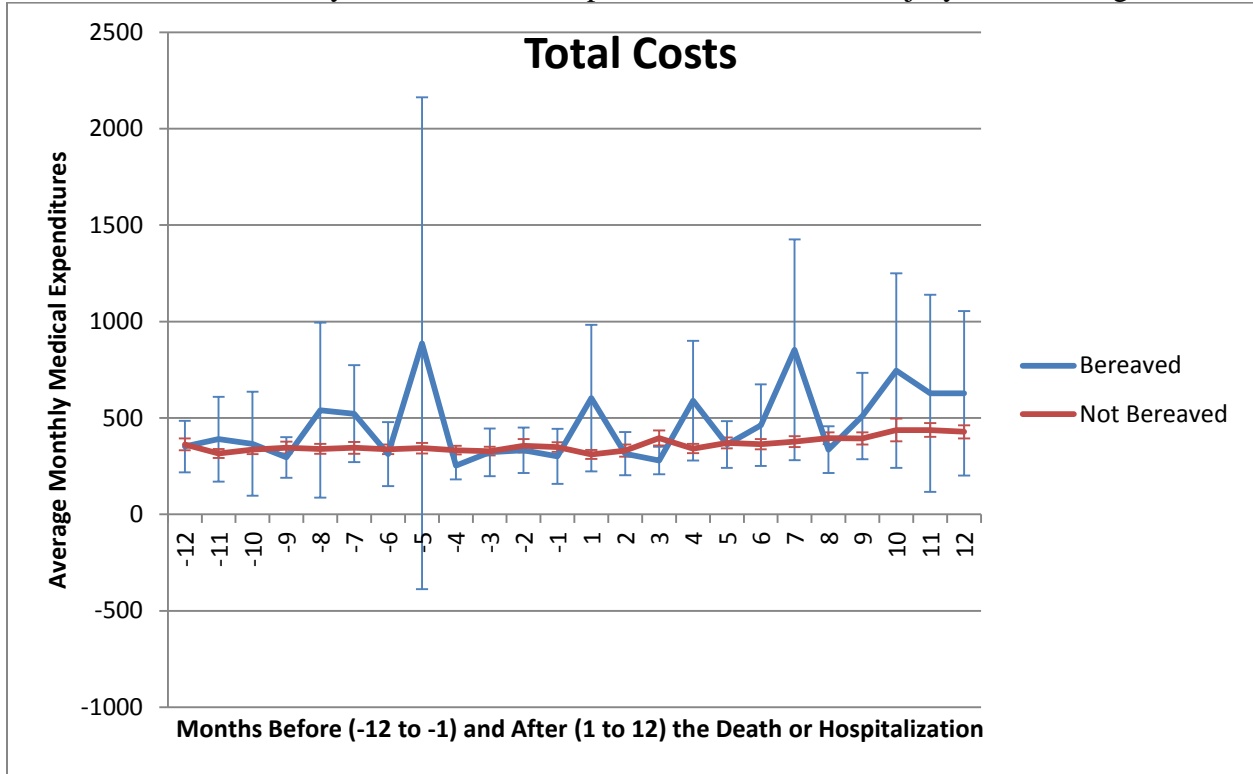
Note: This analysis used all 275 cases, regardless of common support. Note: The error bars are 95% confidence intervals around the mean.

Overall, the methods showed some increases in medical expenditures following bereavement (Table 2). The effect was not significant using the inverse probability of treatment weighting (IPTW) (p=0.273); however, it was with the causal forest approach (95% confidence interval: $240 to $4,442). This was an unusual finding since in the main analysis the IPTW approach tended to provide more significant estimates than the causal forest approach. This could be a result of the large variations in estimates as seen in the trend analysis above. In the IPTW method the largest effect was seen in medications ($127), but it also was least significant using a Mann-Whitney U test. The causal forest approach indicated that the outpatient mental or substance use expenditures where grief was not diagnosed experienced the largest increases in expenditures ($637).

Table A-2. Estimate Effect of Bereavement on Medical Expenditures Among Those Whose Family Member Died from Injury or Poisoning, by Methodological Approach

Expenditure Outcomes	IPTW method		Causal Forest method	
	Effect	P-Value	Effect	Standard Error
Overall	$436	0.273	$2,341	$1,072
Inpatient or emergency room	$33	0.007	$423	$407
Outpatient grief-related	$8	0.057	-$1	$55
Outpatient mental or substance use expenditures, no grief diagnosis	$41	0.049	$637	$617
Other outpatient	$46	0.207	$211	$149
Medications	$127	0.738	$2	$15

Abbreviation: IPTW, Inverse probability of treatment weighting. P-Value was determined using a Mann-Whitney U test.

Sensitivity Analyses

Changing the Minimum Node Size

In discussion with the creators of the causal forest algorithm I learned that the minimum node size specification in the R function only stops splitting the tree if the threshold has been met. If a node is bigger than the threshold it can split the tree into two sub nodes, one or both of which are smaller than the minimum node size threshold. For other users of the R package this has resulted in a sample of one in some nodes in the causal forest. I wanted to see how this specification was affecting the standard errors of the analysis. As a result I re-ran the analysis for overall costs among adults who had a child die, with a minimum node size splitting threshold of 10 (the base case), 25, 50, and 100. Below, the results show that the different thresholds did not have a substantial impact on the estimated effect or the standard error:

Table A-3. Sensitivity Analyses of the Effect Estimate Using Different Node Size Splitting Thresholds

Node size splitting threshold	Estimate	Standard Error
10	$1,882	$1,061
25	$1,515	$1,105
50	$1,828	$1,150
100	$1,842	$1,069

Using months 7-12 prior to the event as a baseline among adults who had a child die

Due to the increases in expenditures in the 6 months prior to the death of a family member, this diminishes the effect I have calculated using the difference-in-differences approach. As a sensitivity analysis I compared costs in the 7-12 months before the event vs. the costs the year after. I used all the covariates for the year before in this sensitivity analysis. In

future analyses I will need to limit the covariates to those in the 7-12 months before for the

bereaved and not bereaved family members. The results for adults who had a child die are very

different than comparing the year before to the year after:

Table A-4. Sensitivity Analysis of Expenditure Outcomes Using Cost in the 7-12 Months Before
the Event as the Baseline, Among Adults Whose Child Died

Expenditure Outcomes	Adult Whose Child Died	
	Effect	P-Value
Overall	$3,587	0.068
Inpatient or emergency room	$329	0.808
Outpatient grief-related	$106	<0.001
Outpatient mental or substance use expenditures, no grief diagnosis	$1,884	<0.001
Other outpatient	$815	0.721

Note: this is the difference in differences between the expenditures in -365 to -180 days before
the event and 0 to 364 days after the event.

When comparing the entire year before to the year after in the main report, the overall

estimate was $225 (P-value 0.086).

APPENDIX B: Suicide Bereavement Survey

The following is the survey that was used to gather the data on suicide related

bereavement. The text is formatted and colored in the way that was used by the developers at

NORC to program the computer-assisted telephones interviewing (CATI) and the computer

aided web interviewing (CAWI) versions of the survey.

Client	University of Michigan
Project Name	Long Term Burden of Suicide
Project Number	8128
Survey length (median)	12-15 minute survey
Population	425 adults + 150 teens who know someone who died by suicide or someone who attempted suicide
Pretest	N=100
Main	N=475 or 575 (depending on pretest)
MODE	Phone and web
Language	English and Spanish
Incentive	3000 AmeriPoints (for adults); $5 Amazon gift card (for teens)
PIMS description	Burden of Suicide
	Carga de Suicidio
Eligibility Rate	30%

Standard demographic preloads:

Variable Name	Variable Type	Variable Label
AGE	Numeric	Age
GENDER	String	Gender
RACETHNICITY	Numeric	Race/ethnicity
EDUC	Numeric	Education
MARITAL	Numeric	Marital Status
EMPLOY	Numeric	Current employment status
INCOME	Numeric	Household income
STATE	String	State
METRO	Numeric	Metropolitan area flag
INTERNET	Numeric	Household internet access
HOUSING	Numeric	Home ownership
HOME_TYPE	Numeric	Building type of panelist's residence
PHONE_SERVICE	Numeric	Telephone service for the household
HHSIZE	Numeric	Household size (including children)
HH01	Numeric	Number of HH members age 0-1
HH25	Numeric	Number of HH members age 2-5
HH612	Numeric	Number of HH members age 6-12
HH1317	Numeric	Number of HH members age 13-17
HH18OV	Numeric	Number of HH members age 18+

These populated as a pre-load when the panelists get sampled into the survey

Standard sample preloads

Variable Name	Variable Type	Variable Label
Username	Numeric	Analogous to Member_PIN
P_Batch	Numeric	Batch Number (if only one assignment, then everyone will be 1)
Dialmode	Numeric	CATI Dialmode (predictive, preview, etc)
P_LCS	Numeric	Life cycle stage, 0=released but not touched
LANG	String	Survey language (EN, ES)
Y_FCELLP	String	
S_RES	Numeric	
Surveylength	Numeric	Estimated length of survey
SurveyId	Numeric	Survey ID# in A4S
Incentwcomma	String	1,000 or 2,000
P_Hold01	Numeric	Prevents dialing cases without phone numbers

Custom survey-specific preloads provided by Statistics team

Variable Name	Variable Type	Variable Label
P_PARENT	Numeric	1=Parent path; 2=Adult path
LifeExpect	Numeric	calculate based on age and gender
Tradeoff1	Numeric	calculate as (lifeexpectancy-age)/2
tradeoff2	Numeric	calculate as (lifeexpect-age)/4
tradeoff3	Numeric	calculate as 3*(lifeexpect-age)/4

This survey will use the following RND_xx variables:
Note, these are randomized in the script (NOT preloads)

RND_xx	Associated survey Qs
RND_00	
RND_01	
RND_02	
RND_03	
RND_04	
RND_05	
RND_06	

[CATI - OUTBOUND]

INTRO

Hello, my name is $I. I'm calling from AmeriSpeak by NORC. May I please speak with [FIRSTNAME]?
Hola, mi nombre es $I. Lo estoy llamando de AmeriSpeak del NORC. ¿Podría hablar con [FIRSTNAME]?

> [IF RESPONDENT IS AVAILABLE]
> Thank you for your continued participation in AmeriSpeak. I am calling to let you know that your next survey is available. The survey takes approximately [SURVEYLENGTH] minutes to complete. If you complete the survey, you will receive [INCENTWCOMMA] AmeriPoints for your time.
> Gracias por su participación continúa en AmeriSpeak. Le estoy llamando para informarle que su próxima encuesta está lista. La encuesta toma aproximadamente [SURVEYLENGTH] minutos para completar. Si completa la encuesta, recibirá [INCENTWCOMMA] AmeriPoints por su tiempo.
>
> [IF S_AMS_SWEEP=1] Plus, get entered into the Wintry Holiday Sweepstakes for a chance to win $500!
> ¡Además, entre al sorteo Wintry Holiday para tener la oportunidad de ganar $500!
>
> We will keep all of your answers confidential. Shall we proceed?
> Mantendremos todas sus respuestas confidenciales. ¿Desea que procedamos?
>
> Great. As always, for quality assurance purposes, this call may be recorded or monitored.
> Excelente. Esta llamada puede ser grabada o monitoreada.

[CATI-INBOUND]

INTRO

Thank you for calling AmeriSpeak by NORC. My name is $I. How are you today?
Gracias por llamar a AmeriSpeak de NORC. Mi Nombre es $I. ¿Cómo está hoy?

And are you calling to take your next survey?
¿Y está llamando para tomar su próxima encuesta?

I just need to confirm that I'm speaking with [FIRSTNAME] [LASTNAME]. Is that you?
Sólo necesito confirmar que estoy hablando con [FIRSTNAME] [LASTNAME]. ¿Sería usted?

Great. This survey takes approximately [SURVEYLENGTH] minutes to complete over the phone and you will earn [INCENTPOINTS] AmeriPoints for your time.
Excelente. Esta encuesta dura aproximadamente [SURVEYLENGTH] minutos para completar a través del teléfono y usted ganará [INCENTWCOMMA] AmeriPoints por su tiempo.

[IF S_AMS_SWEEP=1] Plus, get entered into the Wintry Holiday Sweepstakes for a chance to win $500!
¡Además, entre al sorteo Wintry Holiday para tener la oportunidad de ganar $ 500!

We will keep all of your answers confidential. As always, for quality assurance purposes, this call may be recorded or monitored. Shall we proceed?

[CATI-CALLBACK]
CBINTRO
Hello, my name is $I. I'm calling from AmeriSpeak by NORC. We previously spoke with [FIRSTNAME] about completing an AmeriSpeak survey. Is [FIRSTNAME] available?
Hola, mi nombre es $I. Estoy llamando de AmeriSpeak de NORC. Previamente hablamos con [FIRSTNAME] acerca de completar una encuesta de AmeriSpeak. ¿Esta [FIRSTNAME] disponible?

> [IF RESPONDENT IS AVAILABLE]
> Hello, my name is $I, calling from AmeriSpeak by NORC. We previously spoke with you about completing an AmeriSpeak survey. Are you available now to continue?
> Hola, mi nombre es $I, y estoy llamando de AmeriSpeak de NORC. Previamente hablamos con usted acerca de completar una encuesta de AmeriSpeak. ¿Está usted disponible ahora para continuar?
>
> As always, for quality assurance purposes, this call may be recorded or monitored.
> Esta llamada puede ser grabada o monitoreada.

[DISPLAY THIS AM LANGUAGE IF SurveyAccessEnd-CALLDATE>1 DAY]
 [CATI-MISSED OUTBOUND, ANSWERING MACHINE]
AM1
Hello, this message is [FIRSTNAME] [LASTNAME]. I'm calling from AmeriSpeak from NORC to let you know that you have a survey waiting for you. The survey will take approximately [surveylength] minutes and you will receive [INCENTWCOMMA] AmeriPoints for your time.
Hola, este mensaje es para [nombre y apellido del panelista]. Estoy llamando de AmeriSpeak de NORC para informarle que tiene una encuesta esperando. La encuesta le tomará aproximadamente [surveylength] minutos y recibirá [INCENTWCOMMA] AmeriPoints por su tiempo.

[IF S_AMS_SWEEP=1] Plus, get entered into the Wintry Holiday Sweepstakes for a chance to win $500!
¡Además, entre al sorteo Wintry Holiday para tener la oportunidad de ganar $500!

Call us toll-free at 888-326-9424 and enter your PIN number, [MEMBER_PIN], to complete your survey and earn rewards.
Llámenos al número gratuito 888-326-9424 e introduzca su número PIN, [MEMBER_PIN], para completar la encuesta y ganar premios.

[DISPLAY THIS AM LANGUAGE IF SurveyAccessEnd-CALLDATE>1 DAY]
 [CATI-ANSWERING MACHINE MISSED APPOINTMENT CALLBACK]
AMHARD
Hello, this message is for [FIRSTNAME] and I'm calling from AmeriSpeak from NORC. When we spoke previously, you requested that we call you back <at this time>. I'm sorry that we've missed you. We'll

try to contact you again soon but please feel free to return our call any time at 888-326-9424 and enter your PIN number, [MEMBER_PIN], to complete your survey and earn rewards. Thank you.
Hola, este mensaje es para [FIRSTNAME] y estoy llamando de AmeriSpeak de NORC. Cuando hablamos anteriormente, solicitó que le llamaramos de nuevo <en este momento>. Siento no haber podido contactarlo/a. Intentaremos ponernos en contacto con usted otra vez pronto, pero no dude en devolver nuestra llamada en cualquier momento al 888-326-9424 e introduzca su número PIN, [MEMBER_PIN], para completar su encuesta y ganar premios. Gracias.

 [CATI-ANSWERING MACHINE MISSED CALLBACK]
AMSOFT
Hello, this message is for [FIRSTNAME]. I am calling from AmeriSpeak from NORC. We are calling you back to complete your AmeriSpeak survey. Remember, you will earn rewards for completing this survey.
Hola, este mensaje es para [FIRSTNAME]. Estoy llamando de AmeriSpeak de NORC. Le estamos regresando la llamada para completar su encuesta de AmeriSpeak. Recuerde, usted ganará premios por completar esta encuesta.

[IF S_AMS_SWEEP=1] Plus, get entered into the Wintry Holiday Sweepstakes for a chance to win $500!
¡Además, entre al sorteo Wintry Holiday para tener la oportunidad de ganar $ 500!

I'm sorry that we've missed you. We'll try to contact you again soon but please feel free to return our call any time at 888-326-9424 and enter your PIN number, [MEMBER_PIN], to complete this survey.
Siento no haber podido contactarlo/a. Intentaremos ponernos en contacto con usted otra vez pronto, pero no dude en devolver nuestra llamada en cualquier momento al 888-326-9424 e introduzca su número PIN, [MEMBER_PIN], para completar esta encuesta.

Thank you.
Gracias.

[DISPLAY THIS AM LANGUAGE IF SurveyAccessEnd-CALLDATE=1 DAY]
[CATI-NEARING END OF FIELD, ANSWERING MACHINE]
AMEND
Hello, this message is for [FIRSTNAME]. I'm calling from AmeriSpeak from NORC to let you know that a survey will be ending tomorrow. We'd love to hear from you so please call us toll-free at 888-326-9424 and enter your PIN number, [MEMBER_PIN], to complete your survey and earn rewards.   Thank you.
Hola, este mensaje es para [FIRSTNAME]. Estoy llamando de AmeriSpeak de NORC para informarle que una encuesta terminará mañana. Nos encantaría saber de usted, así que por favor llámenos al número gratuito 888-326-9424 e introduzca su número de PIN, [MEMBER_PIN], para completar su encuesta y ganar premios. Gracias.

Text shown in green includes researcher notes and should not be included in the programming.
Text shown in purple indicates Spanish translation that should be incorporated into the Spanish version of the survey

---

[START OF SURVEY]

CREATE DATA-ONLY VARIABLE: QUAL
1=Qualified Complete
2=Not Qualified
3=In progress

AT START OF SURVEY COMPUTE QUAL=3 "IN PROGRESS"

CREATE MODE_START
1=CATI
2=CAWI

(Project name) Draft
Date: (Quex start date)

[SHOW IF RACETHNICITY= 4] [SP]
LANGSWITCH
[CAWI VERSION]
Would you like to take this survey in English or Spanish?
¿ Le gustaría tomar esta encuesta en inglés o español?

 1. English/Inglés
 2. Spanish/Español

[CATI VERSION]
We are offering this survey in both English and Spanish. Which would you prefer?
 Estamos ofreciendo esta encuesta en inglés y español. ¿Cuál preferiría?
 1. Continue
 1. Continuar

[DISPLAY – WINTRO_1] [CAWI ONLY]
[P_PARENT = 2]
Thank you for agreeing to participate in our new AmeriSpeak survey! To thank you for sharing your opinions, we will give you a reward of [INCENTWCOMMA] AmeriPoints after completing the survey.
¡Gracias por participar en nuestra nueva encuesta de AmeriSpeak! Para agradecerle por compartir su opinión, le daremos una recompensa de [INCENTWCOMMA] AmeriPoints después de completar esta encuesta.

[P_PARENT = 1]
For this survey, we would like to have one of your children aged 15 through 17 complete the survey. Your teenager can refuse to answer any question and can stop the survey at any time. Your decision to allow your teenager to take part in this research study is completely voluntary.
Para esta encuesta, nos gustaría que uno de sus hijos de entre 15 y 17 años complete esta encuesta. Su hijo adolescente puede negarse a responder cualquier pregunta y puede detener la encuesta en cualquier momento. Su decisión de permitir que su hijo forme parte de este estudio de investigación es completamente voluntaria.

If you only have one child aged 15 to 17, we would like to ask the survey questions of that teen. If you have more than one child in that age range, we will randomly select one for participation after you have completed your section of the survey.
Si usted sólo tiene un hijo de entre 15 y 17 años de edad, nos gustaría realizarle las preguntas de esta encuesta a dicho adolescente. Si usted tiene más de un hijo en ese rango de edad, seleccionaremos al azar a uno de ellos para que participe luego de que usted haya completado su sección de la encuesta.

[SHOW TO ALL]
[IF S_AMS_SWEEP=1] Plus, get entered into the Wintry Holiday Sweepstakes for a chance to win $500!
Además, participe en el sorteo Wintry Holiday para una oportunidad de ganar $500!

As always, your answers are confidential.
Como siempre, sus respuestas son confidenciales.

Please use the "Continue" and "Previous" buttons to navigate between the questions within the questionnaire. Do not use your browser buttons.
Por favor utilice los botones "Continuar" y "Anterior" para navegar entre las preguntas del cuestionario. No utilice los botones de su navegador.

[IF S_AMS_SWEEP=1]
[SMALL FONT] [REMOVE BOLD] NO PURCHASE OR PAYMENT OF ANY KIND OR COMPLETION OF SURVEY IS NECESSARY TO ENTER OR WIN. PURCHASE OR PAYMENT DOES NOT IMPROVE YOUR CHANCE OF WINNING. The Wintry Holiday Sweepstakes is open only to legal residents of the 50 US and DC, 18+, who are current and active members of the AmeriSpeak Panel and have received an invitation to participate in a survey associated with this sweepstakes. Void elsewhere and where prohibited. Promotion ends January 31st, 2018. On or about February 14, 2018, a random drawing will be conducted from among all eligible entries received. Odds of winning a prize depend on the number of entries received. All potential winners will be contacted by telephone, email, regular mail or overnight mail. Subject to complete Official Rules at rules.promotrust.com/holiday.

GLOBAL PROGRAMMING

PLEASE MAKE IT SO CLICKING ON <u>ANY</u> HYPERLINK OPENS A NEW WINDOW FOR THE RESPONDENT

ADD FOOTER ON EVERY SCREEN DISPLAY1 TO END

<center>**<CENTER>** For extra help and resources click here **</CENTER>**</center>
<center>**<CENTER>** Por más ayuda y recursos haga clic aquí **</CENTER>**</center>

Clicking on the link will open a new window with the following information:

Helpful Resources:
- afsp.org/find-support/ive-lost-someone/ - This website can help you find local support groups, outreach programs, and additional resource specific to survivors of suicide loss.
- allianceofhope.org – This is an online resource and support group that allows you to connect with others who have lost someone to suicide and hear how they are reacting and working through their grief.
- *For Teens* yourlifeyourvoice.org – This is a special website for teens were you can text, chat, call or email someone who can help you with your current emotional, mental, or social struggles. There are also videos of other teens' experiences with grief, thoughts of suicide, struggles with bullying or abuse, and many other topics.

Recursos útiles:
- afsp.org/find-support/ive-lost-someone/ - Este sitio web puede ayudarle a usted a encontrar grupos de apoyo locales, acceder a programas, y recursos adicionales específicos para sobrevivientes a una pérdida por suicidio.
- allianceofhope.org – Este es un recurso y grupo de apoyo en línea que le permite a usted conectarse con otras personas que hayan perdido a alguien por suicidio y escuchar cómo están trabajando y reaccionando frente a su dolor.
- *Para adolescentes* yourlifeyourvoice.org – Este es un sitio especial para adolescentes en el cual puede enviar mensajes, chatear, llamar o enviar un correo electrónico a alguien que puede ayudarle con su actual lucha emocional, mental o social. También hay videos de experiencias de otros adolescentes con el duelo, pensamientos suicidas, luchas por acoso o abuso, y muchos otros temas.

If you are having thoughts of suicide:
Si usted está teniendo pensamientos de suicidio:

<u>PLEASE</u> visit suicidepreventionlifeline.org. At this website you can chat with someone online or you can call 1-800-273-8255 or 1-800-273-TALK to talk with someone about your thoughts and struggles with life. They will listen. They will help.

<u>POR FAVOR</u> visite suicidepreventionlifeline.org/help-yourself/en-espanol. En este sitio web usted puede chatear con alguien en línea o usted puede llamar al 1-888-628-9454 para hablar con alguien sobre sus pensamientos y luchas con su vida. Ellos escucharán. Ellos le ayudarán.

Teens can also visit yourlifeyourvoice.org to talk with someone and get help.

Los adolescentes también pueden visitar yourlifeyourvoice.org para hablar con alguien y recibir ayuda.

SET IF P_PARENT = 1 INSERT SECTION TIMESTAMP: TIME_PARENST, DATE_PARENST

[SHOW IF P_PARENT=1; NUMBOX 0-10]
QS0.
Including yourself, how many adults, aged 18 and above, live in your household at least 50% of the time?

Incluyendo usted, ¿cuántos adultos, mayores de 18 años, viven en su hogar al menos el 50% del tiempo?

If no adults live in your household, please [IF CAWI, INSERT: enter] [IF CATI, INSERT: say] zero.

Si ningún adulto vive en su hogar por favor [IF CAWI, INSERT: ingrese] [IF CATI, INSERT: diga] cero.

[SHOW IF P_PARENT=1; NUMBOX 0-10]
QS1.
How many teenagers aged 15 through 17 live in your household at least 50% of the time?

¿Cuántos adolescentes de entre 15 y 17 años viven en su hogar al menos el 50% del tiempo?

If no teenagers age 15 to 17 live in your household, please [IF CAWI, INSERT: enter] [IF CATI, INSERT: say] zero.

Si no hay adolescentes de entre 15 y 17 años en su hogar, por favor [IF CAWI, INSERT: ingrese] [IF CATI, INSERT: diga] cero.

[SHOW IF QS1>0; NUMBOX 0-10]
QS2.
For how many of the teenagers aged 15 to 17 in your household are you the parent or legal guardian?

¿De cuántos de los adolescentes de entre 15 y 17 años que viven en su hogar es usted el/la padre/madre o tutor/a legal?

[CATI] ACCEPTABLE RANGE IS 0-10

[NUMBOX; PROMPT]

[IF QS2= 1]
QS3.
How old is your teenager?
¿Qué edad tiene el/la adolescente?
[CATI] ACCEPTABLE RANGE IS 15-17

[ACCEPT RANGE 15-17, 77,98,99]

[SP; PROMPT]
[IF QS2= 1]
QS4.
Is your teenager male or female?
¿Su hijo/a adolescente es de género masculino o femenino?

1. Male
2. Female
3. They don't identify with either gender

1. Masculino
2. Femenino
3. No se identifican con ningún género

[SHOW IF QS2=1; SP]
QS5.
If you would like to tell us your child's first name, nickname, or initials, we can customize the survey wording to call them by this name. If you do not wish to share their name, just let us know.
Si a usted le gustaría decirnos el primer nombre de su hijo, apodo o iniciales, podemos personalizar la encuesta para que se lo llame por su nombre. Si no desea compartir su nombre, simplemente hágalo saber.

CAWI RESPONSE OPTIONS:
1. Yes, I will share his/her name, nickname, or initials: [SMALL TEXTBOX]
2. No, I do not want to share his/her name

1. Sí, compartiré su nombre, apodo, o iniciales: [SMALL TEXTBOX]
2. No, no deseo compartir su nombre

CATI RESPONSE OPTIOINS
1. YES, R WILL SHARE HIS/HER NAME, NICKNAME, OR INITIALS [SMALL TEXTBOX]
2. NO, R DOES NOT WANT TO SHARE CHILD"S NAME

1. SÍ, R COMPARTIRÉ SU NOMBRE, APODO, O INICIALES: [SMALL TEXTBOX]
2. NO, R NO QUIERE COMPARTIR EL NOMBRE DEL NIÑO
[CATI] ENTER ANSWERS IN TEXTBOX

[IF QS2> 1, SHOW QS7]
[textboxes, numboxes 15-17, dropdown; number of rows equals number in QS2]
[prompt if skip, terminate if refused]
QS7.
Now we would like to determine which of the children aged 15 to 17 living in your household should complete the rest of the survey.
Ahora nos gustaría determinar cuál de los hijos de entre 15 y 17 que viven en su hogar debería completar el resto de la encuesta.

[CAWI] To allow us to do this, please enter a nick name or initials for everyone aged 15 through 17 in your household for whom you are the parent or legal guardian below. Please also tell us their age and gender.
[CAWI] Para poder hacerlo, por favor ingrese a continuación un apodo o iniciales para cada uno de los integrantes de su hogar de 15 a 17 años de quien usted es el/la padre/madre o tutor legal. Por favor también indíquenos la edad y género.

[CATI] To allow us to do this, please tell us a nick name or initials for everyone aged 15 through 17 in your household for whom you are the parent or legal guardian. Please also tell us their age and gender.
[CATI] Para poder hacerlo, por favor díganos un apodo o iniciales para cualquier persona de entre 15 y 17 años en su hogar de quien usted sea el padre, madre o tutor legal. Por favor también indíquenos la edad y género.

Nickname or INITIALS	AGE	GENDER
[textboxes]	[numboxes]	[dropdown: Male/Female/Teen doesn't identify with either gender]

Apodo o INICIALES	EDAD	SEXO
[textboxes]	[numboxes]	[dropdown: Hombre/Mujer/Adolescente no se identifica con ningún género

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[RANDOMLY SELECT ONE TEEN AND CREATE DATA-ONLY VARIABLES TAGE, TGENDER, TNAME].

TAGE	numeric (15-17)
IF QS2=1	TAge=QS3
IF QS2 >1	TAge= Age of child selected in QS7
TGENDER	numberic (1, 2)
IF QS2=1	TGender=QS4
IF QS2 >1	TGender= Gender of child selected in QS7
TNAME	string
IF QS2=1 and QS5=1	TName=Name of child entered in textbox
IF QS2=1 and QS5=2,77,98,99	TName= "your teenager" TName= "su hijo/a adolescente"
IF QS1 >1	TName= Name of child selected in QS7

[SHOW IF P_PARENT=1 and QS2>0; SP]
PCONSENT.
We are asking you for permission to have [TNAME] take part in this survey to help us learn more about what teens think about health issues. This will take about 15 minutes to finish, depending on their answers.
Le pedimos a usted su permiso para que [TNAME] realice esta encuesta para ayudarnos a conocer más lo que los adolescentes piensan sobre temas de salud. Esto tomará aproximadamente 15 minutos, dependiendo de sus respuestas.

Important things you should know are:
Cosas importantes que usted debe saber:

- Your teen will be asked questions about the impact of knowing someone who died by suicide. Some of these questions may make them uncomfortable. All questions are voluntary and they can skip questions if they wish.
- We would encourage your teen to take the survey at any time when they will have privacy.
- To help us protect your teen's privacy, we have applied for a Certificate of Confidentiality from the National Institutes of Health. The researchers can use this Certificate to legally refuse to disclose information that may identify your teen in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings, for example, if there is a court subpoena.

- The survey is voluntary; you can choose whether or not to let your teen take it, and they can stop taking the survey at any time.
- Your teen will be compensated for their time by being sent a $5 Amazon gift card in the mail.

- Se le realizarán a su hijo adolescente preguntas sobre el impacto de conocer a alguien que se suicidó. Algunas de estas preguntas pueden hacerlo/a sentir incómodo/a. Todas las preguntas son voluntarias y él/ella puede saltar alguna pregunta si así lo desea.
- Recomendamos que su hijo adolescente realice la encuesta en algún momento en el que tenga privacidad.
- Para ayudarnos a proteger la privacidad de su hijo adolescente, hemos aplicado un Certificado de Confidencialidad del Instituto Nacional de Salud. Los investigadores pueden utilizar este Certificado para negarse legalmente a divulgar información que pueda identificar a su hijo adolescente en algún procedimiento civil, penal, administrativo, legislativo o de otro tipo a nivel federal, estatal, o local, por ejemplo si hay una citación de una corte.
- La encuesta es voluntaria; usted puede elegir si dejar o no participar a su hijo/a adolescente, y él/ella pueden dejar de participar en la encuesta en cualquier momento.
- Su hijo adolescente será recompensado por su tiempo recibiendo una tarjeta de regalo de Amazon de valor de $5 por correo.

AmeriSpeak and NORC are supporting the following researchers at the University of Michigan to do this survey: John Richardson, MPH; Daniel Eisenberg, PhD; Cheryl King, PhD; Lisa Prosser, PhD, MS; and David Hutton, PhD. These researchers will only have access to de-identified survey responses and thus cannot identify or link information to specific AmeriSpeak participants. If you have any questions or concerns about your teen's participation in this study, you can contact AmeriSpeak Support at support@AmeriSpeak.org or call (888) 326-9424.

AmeriSpeak y NORC están apoyando a los siguientes investigadores de la Universidad de Michigan para realizar esta encuesta: John Richardson, MPH; Daniel Eisenberg, PhD; Cheryl King, PhD; Lisa Prosser, PhD, MS; y David Hutton, PhD. Estos investigadores solo tendrán acceso a respuestas sin identificación y de esa forma no podrán identificar o unir la información con un participante específico de AmeriSpeak. Si usted tiene alguna pregunta o inquietud acerca de la participación de su hijo/a adolescente en este estudio, puede contactar a Apoyo de AmeriSpeak al correo electrónico ayuda@AmeriSpeak.org o llámenos al (888) 326-9424.

Would you be willing to have a teenager in your household complete this survey?
¿Estaría dispuesto a que un adolescente de su hogar complete esta encuesta?

1. Yes
2. No

1. Sí
2. No

[SHOW IF P_PARENT=1 and QS2>0; SP]
QS8
[PCONSENT>1] We understand you do not wish to let your child participate in this study. Please answer just a few more questions for us.

[PCONSENT=1] Thank you for letting your child participate in this study. Please answer just a few more questions for us.
[PCONSENT>1] Entendemos que no desea que su hijo/a participe en este estudio. Por favor responda sólo algunas preguntas más para nosotros.
[PCONSENT=1] Gracias por dejar a su hijo/a participar en este estudio. Por favor responda sólo algunas preguntas más para nosotros.

Does your child know someone who died by suicide or attempted suicide?
¿Conoce su hijo/a a alguien que se haya suicidado o haya intentado suicidarse?

1. Yes
2. No

1. Sí
2. No

[SHOW IF P_PARENT=1 and PCONSENT>1 and QS8=1; SP]
QS9

Might you be willing to change your mind about your child's participation if you knew what questions your child would be asked?
¿Estaría usted dispuesto/a a cambiar de opinión sobre la participación de su hijo/a si supiera qué preguntas se le realizarían?

1. Yes
2. Maybe
3. No

1. Sí
2. Quizás
3. No

[SHOW IF QS9=1 or 2]
DISPLAY – QS10

[CAWI] Below is the list of questions your child will be asked if you choose to let them participate:
[CATI] Here are the questions your child will be asked if you choose to let them participate:
[CAWI] A continuación sigue una lista de preguntas que se le realizarán a su hijo/a si decide usted permitirle participar:
[CATI] Estas son las preguntas que se le realizarán a su hijo/a si decide permitirle participar:

- Do you know someone who died by suicide?
- Not including yourself, do you know someone who has attempted suicide?
- Do you consider yourself a survivor of suicide loss? That is, someone whose life has been personally affected by a suicide?

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- What effect did the suicide attempt have on your life?
- Did the suicide death/attempt have an effect on your overall emotional, mental, or physical health at any time?
- [If yes] For how long was your overall health affected?
- In what ways do you feel changed or not changed by the death/attempt? How clearly you think or focus? How you feel emotionally? Your social life? Your goals and purpose in life? The way you take care of yourself physically? Your sleep? Your spirituality? How well you work at school?
- Do you have problems walking about?
- Do you have problems washing or dressing yourself?
- Do you have problems performing your usual activities?
- Do you have pain or discomfort?
- Do you feel worried sad or unhappy?
- Would you participate in an online social network or online support group specifically for those that know someone who attempted suicide, died by suicide, or that care about suicide prevention in general?
- [If yes] For what purposes would you use the online social network or support group?

- ¿Conoce a alguien que se haya suicidado?
- Sin incluirle a usted, ¿conoce a alguien que haya intentado suicidarse?
- ¿Se considera usted un/a sobreviviente a una pérdida por suicidio? Eso significa, ¿alguien cuya vida haya sido personalmente afectada por un suicidio?
- ¿Qué efecto tuvo el intento de suicidio en su vida?
- ¿El suicidio/intento de suicidio tuvo un efecto en su salud emocional, mental, o física en general en algún momento?
- [En caso afirmativo] ¿Por cuánto tiempo se vio su salud general afectada?
- ¿De qué forma se siente usted que cambió o no cambió por el suicidio/intento de suicidio? ¿Cuán claramente usted piensa o se concentra? ¿Cómo se siente emocionalmente? ¿Su vida social? ¿Sus metas y propósitos en su vida? ¿La forma en que usted se cuida físicamente? ¿Su sueño? ¿Su espiritualidad? ¿Qué tan bien trabaja en la escuela?
- ¿Tiene usted problemas para caminar?
- ¿Tiene usted problemas para lavarse o vestirse solo/a?
- ¿Tiene usted problemas para realizar sus actividades habituales?
- ¿Tiene usted dolor o incomodidad?
- ¿Se siente usted preocupado/a, triste, o infeliz?
- ¿Participaría usted en una red social en línea o en un grupo de apoyo en línea específicamente para aquellos que conozcan a alguien que haya intentado suicidarse, se suicidara, o que le preocupe la prevención del suicidio en general?
- [En caso afirmativo] ¿Con qué propósitos utilizaría usted la red social o el grupo de apoyo en línea?

[SHOW IF QS9=1,2; SP]
QS11

Would you now be willing to have a teenager in your household complete this survey?
¿Estaría dispuesto ahora a que un adolescente de su hogar complete esta encuesta?

1. Yes
2. No

[IF S_AMS_SWEEP=1]
CHECKBOX
SCONSENT
[IF CAWI]

[IF P_PARENT = 2] Before we get started, we have the following question for you.
[IF P_PARENT = 2] Antes de comenzar, tenemos la siguiente pregunta para usted.

[IF P_PARENT = 1] We're almost done with your part!
[IF P_PARENT = 1] ¡Ya casi terminamos con su parte!

[SHOW ALL]
As mentioned previously, you will also be entered into the Wintry Holiday Sweepstakes for a chance to win $500. Please read the statement below carefully and check the box in order to be entered into the Wintry Holiday Sweepstakes.

¡Ya casi terminamos! Como mencionamos anteriormente, usted también participará en el Sorteo Wintry Holiday por la posibilidad de ganar $500. Por favor lea cuidadosamente la siguiente oración y marque la casilla para poder participar en el Sorteo Wintry Holilday.

Click "Continue" if you do not want to be entered into the sweepstakes.
Haga clic en "Continuar" si no desea participar en el sorteo.

❑ Yes, I would like to enter the sweepstakes and I agree to be bound by the terms of the Official Rules and Privacy Policy. (With the underlined words linking to the respective terms.)

Sí, me gustaría participar en los sorteos y acepto los términos de la Normativa Oficial y Política de Privacidad. (Las palabras subrayadas tienen enlace a los respectivos términos.)

[Note to TQA: If SCONSENT=1, create a Sweepstake entry in PIMS when complete or screen-out. If SCONSENT=2, do NOT create sweepstakes entry but proceed to survey]

[IF S_AMS_SWEEP=1]
[IF CATI]

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[IF P_PARENT = 2] Before we get started, we have the following question for you.
[IF P_PARENT = 2] Antes de comenzar, tenemos la siguiente pregunta para usted.

[IF P_PARENT = 1] We're almost done with your part!
[IF P_PARENT = 1] ¡Ya casi terminamos con su parte!

[SHOW ALL]
As mentioned previously, you will also be entered into the Wintry Holiday Sweepstakes for a chance to win $500.

¡Ya casi terminamos! Como mencionamos anteriormente, usted también participará en el Sorteo Wintry Holiday por la posibilidad de ganar $500.

Do you agree to be bound by the Official Rules, which are available at rules.promotrust.com/holiday?

¿Está de acuerdo en estar sujeto a las Reglas Oficiales, las cuales están disponibles en rules.promotrust.com/holiday?

1. Yes, agree – create sweepstakes entry
2. No, does not agree – do not create sweepstakes entry

1. Sí, está de acuerdo – cree entrada para sorteos
2. No, no está de acuerdo – no creer entrada para sorteos

[Note to TQA: If SCONSENT=1, create a Sweepstake entry in PIMS when complete or screen-out. If SCONSENT=2, do NOT create sweepstakes entry but proceed to survey]

[IF (QS1 = 0,77,98,99) or
(QS2=0,77,98,99) or
(QS3 = 77, 98, 99) or
(QS4 = 77, 98, 99) or
(PCONSENT>1 and (QS8 = 2, 77, 98, 99 or QS9 = 3, 77, 98, 99 or QS11=2, 77, 98, 99)), TERMINATE]

TERMINATE instruction should be short hand for:
→ SET QUAL=2, CO_DATE
→ GO TO TERMSORRY0
→ No back (disable browser back button)
→ auto redirect to member portal after 10 seconds
[NO PIMS TRANSACTION]

TERMSORRY0.
[CAWI] Thank you for your time today and your consideration in letting your teen participate in this AmeriSpeak survey. We value your opinion and hope that you will participate in future AmeriSpeak surveys.

[CAWI] Muchas gracias por su tiempo hoy y por su consideración de dejar participar a su hijo/a adolescente en esta encuesta de AmeriSpeak. Valoramos su opinión y esperamos que usted participe en futuras encuestas de AmeriSpeak.

[IF QS8=1, INSERT: If your child knows someone who has died by suicide or attempted suicide and is struggling, a good resource is the website yourlifeyourvoice.org. This is a place where your child can talk with someone to get help and learn about other teens working through their life struggles.]
[IF QS8=1, INSERT: Si su hijo/a conoce a alguien que se haya suicidado o haya intentado suicidarse y está luchando, un buen recurso es el sitio web yourlifeyourvoice.org. Este es un lugar en el cual su hijo/a puede hablar con alguien para recibir ayuda y conocer más sobre otros adolescentes y sus batallas de vida.]

[CAWI] We will redirect you to the AmeriSpeak Member Portal in [n] seconds.
[CAWI] Lo/a re direccionáremos al Portal de Usuario de AmeriSpeak en [n] segundos.

[CATI] Thank you for your time today and your consideration in letting your teen participate in this AmeriSpeak survey. We will be in touch when your next survey is available. Have a great day/evening.
[CATI] Muchas gracias por su tiempo hoy y por su consideración de dejar participar a su hijo/a adolescente en esta encuesta de AmeriSpeak. Estaremos en contacto cuando su próxima encuesta se encuentre disponible. Que tenga un buen día/ noche.

[[CATI] ONLY OFFER THIS IF PROMPTED BY RESPONDENT: We are looking to interview a teen age 15 to 17 for this study and we need your consent to interview them. We appreciate your time and will be in touch with your next survey soon.]
[[CATI] ONLY OFFER THIS IF PROMPTED BY RESPONDENT: Estamos interesados en entrevistar a un adolescente de entre 15 y 17 años para este estudio y necesitamos su consentimiento para entrevistarle. Le agradecemos por su tiempo y estaremos en contacto con su próxima encuesta pronto.]
[SET QUAL=2 "Not Qualified" and END INTERVIEW, no incentive given]
[REMOVE "PREVIOUS" BUTTON FROM PAGE]
[CAWI NO BACK – disable web browser back button]
CAWI auto-redirect to MEMBER PORTAL in 10 seconds, display remaining number of seconds in [n]

[SHOW IF P_PARENT =1; SP; PROMPT]
QS12.
Could you please provide your current mailing address so that we can mail a gift card to your child if they end up participating in the survey?
¿Podría usted por favor proporcionarnos su actual dirección de correo para poder enviarle una tarjeta de regalo a su hijo/a si decide participar en la encuesta?

Current mailing address:

Address 1	[HOMEADD1]
Address 2	[HOMEADD2]
City	[HOMEADDCITY]
State	[HOMEADDSTATE]
Zip code	[HOMEADDZIP]

Dirección de correo actual:	
Dirección 1	[HOMEADD1]
Dirección 2	[HOMEADD2]
Ciudad	[HOMEADDCITY]
Estado	[HOMEADDSTATE]
Código postal	[HOMEADDZIP]

[SHOW IF P_PARENT =1; SP; PROMPT]
QS13.
Is [TNAME] currently available to take the survey?
¿Está [TNAME] actualmente disponible para realizar la encuesta?

1. Yes
2. No, but available at a later time

1. Sí
2. No, pero estará disponible más tarde

[SHOW IF P_ PARENT =1 AND QS13=1]
[DISPLAY2]
[CAWI] Please have [TNAME] come to the computer right now to take the survey.
[CAWI] Por favor pídale a [TNAME] que venga ahora a la computadora para completar la encuesta.

[CATI] Please have [TNAME] come to the phone right now to take the survey.
[CATI] Por favor pídale a [TNAME] que venga ahora alteléfono para completar la encuesta.

[SHOW IF P_PARENT =1 AND QS13>1; DISPLAY3]
[Remove "Previous" and "Continue" buttons from screen] [NO BACK]
Please have [TNAME] take the survey as soon as possible. They can access the survey through your Member Portal.   Please remind [TNAME] to take only this survey and not to complete any other surveys.
Por favor pídale a [TNAME] que complete la encuesta lo antes posible. Pueden acceder a la encuesta a través del Portal de Usuario. Por favor recuérdele a [TNAME] que sólo complete esta encuesta y que no complete otras encuestas.

[set qual=3 "in progress"]
[SET POINT OF RETURN=S12]

At this point, the teen is the respondent

[SHOW IF QS13=1] [SP]
LANGSWITCHTN
[CAWI VERSION]
Would you like to take this survey in English or Spanish?
¿ Le gustaría tomar esta encuesta en inglés o español?

3. English/Inglés
4. Spanish/Español

[CATI VERSION]
We are offering this survey in both English and Spanish. Which would you prefer?
 Estamos ofreciendo esta encuesta en inglés y español. ¿Cuál preferiría?
1. Continue
1. Continuar

IF LANGSWITCH=1, 77, 98, 99 continue in English (EN)
IF LANGSWITCH=2, switch to Spanish language version of the survey (ES)

[SHOW IF QS13=1; DISPLAY]
TEENTRANSITION.
Welcome to today's Amerispeak survey [IF QS2>1 or S5=1, FILL: : TNAME]! Your parent has invited you to participate in a special survey for teens just like you through the AmeriSpeak Panel conducted by NORC at the University of Chicago. We will start off with a few short questions to make sure we have the right survey for you. You will need to answer these next couple of questions for us to know whether you can participate in the survey.
Bienvenido/a a la encuesta de Amerispeak de hoy [IF QS2>1 or S5=1, FILL: : TNAME]! Su padre/madre le ha invitado a participar en una encuesta especial para adolescentes como usted a través del Panel de AmeriSpeak realizado por NORC de la Universidad de Chicago. Comenzaremos con unas breves preguntas para asegurarnos que tenemos la encuesta correcta para usted. Usted necesitará contestar las siguientes preguntas para saber si usted puede participar en esta encuesta.

Adults (P_PARENT=2) will start here directly
Q1.
[IF P_PARENT=2, INSERT: "The next couple of questions are necessary for you to answer so that we can determine whether you are able to participate in this study."]

Do you know someone who died by suicide?
¿Conoce a alguien que se haya suicidado?

CAWI RESPONSE OPTIONS:
1. Yes
2. No

1. Sí
2. No

CATI RESPONSE OPTIONS:
1. YES
2. NO

1. SÍ
2. NO

[SHOW IF Q1=2, 77, 98, 99]
[SP]
Q2.
Not including yourself, do you know someone who has attempted suicide?
Sin incluirle a usted, ¿conoce a alguien que haya intentado suicidarse?

CAWI RESPONSE OPTIONS:
1. Yes
2. No

1. Sí
2. No

CATI RESPONSE OPTIONS:
1. YES
2. NO

1. SÍ
2. NO

[SHOW IF Q1=1 or (P_PARENT=1 and Q2=1); SP, prompt]
CONSENT.
[CAWI]<u>Title of the Study:</u>
[CAWI]<The Impact of Suicide on Others
[CAWI]<u>Título de este Estudio:</u>

[CAWI]<El Impacto del Suicidio en los Demás

<u>Consent:</u>
You are invited to take [CAWI: a survey; CATI: this survey "The Impact of Suicide on Others"] which is to help researchers understand the impact of knowing someone who died by suicide [IF P_PARENT=1, INSERT: "or who attempted suicide."]. You will be asked about your relationship with the person who died, and how the suicide affected you emotionally, mentally, and physically. [IF P_PARENT=2, INSERT: "The survey should take about 12-15 minutes."] [IF P_PARENT=1, INSERT: "The survey should take about 5 minutes. Even if your parent has given permission for you to take this survey, <i>you do not have to take it and no one will be mad if you do not take it</i>.</i> Your parents will not have access to your survey answers."]
<u>Consent:</u>
Usted está invitado/a a realizar [CAWI: una encuesta; CATI: esta encuesta "El Impacto del Suicidio en los Demás"] el cual permitirá a los investigadores comprender el impacto de conocer a alguien que se haya suicidado [IF P_PARENT=1, INSERT: "o haya intentado suicidarse."] Se le preguntará a usted sobre su relación con la persona que murió, y cómo el suicidio afectó a usted emocionalmente, mentalmente, y físicamente. [IF P_PARENT=2, INSERT: "La encuesta tomará entre 12-15 minutos."] [IF P_PARENT=1, INSERT: "La encuesta tomará entre 5 minutos. Aunque su padre/madre le haya dado permiso para que realice la encuesta, <i>usted no tiene que realizarla y nadie se enojará si no lo hace.</i> Sus padres no tendrán acceso a las respuestas de sus encuestas."]

<u>Benefits</u>
Although you may learn of ways to get help with your feelings about someone's death [IF P_PARENT=1, INSERT: "or attempt"], there are no direct benefits to you for participating in this survey. Your answers might help researchers better understand the total impact of suicide in the United States and how to better help people who know someone who died by suicide [IF P_PARENT=1, INSERT: "or attempted suicide"]. The researchers plan to publish their overall findings.
<u>Beneficios</u>
Aunque usted puede aprender formas de ayudar con sus sentimientos sobre la muerte de alguien [IF P_PARENT=1, INSERT: " o intento"], no hay beneficios directos para usted por participar de este estudio. Sus respuestas pueden ser útiles para que los investigadores comprendan mejor el impacto total del suicidio en los Estados Unidos y cómo ayudar mejor a las personas que conocen a alguien que se haya suicidado [IF P_PARENT=1, INSERT: " o intentó suicidarse"]. Los investigadores planean publicar sus hallazgos generales.

<u>Risks</u>
You might feel bad or sad as you answer questions that make you think about a person you know who died by suicide [IF P_PARENT=1, INSERT: "or attempted suicide"]. Other than this there is minimal risk in taking this survey. It is possible, but very unlikely that someone can find out about your participation in this study. To help minimize this risk, your privacy is protected according to the AmeriSpeak privacy policy (amerispeak.org/privacy).
<u>Riesgos</u>
Usted puede sentirse mal o triste al responder preguntas que le hagan pensar en una persona que usted conoce que se haya suicidado [IF P_PARENT=1, INSERT: " o intentó suicidarse"]. Más allá de eso, hay un riesgo mínimo al realizar esta encuesta. Es posible, pero muy improbable que alguien pueda averiguar sobre su participación en este estudio. Para ayudar a minimizar el riesgo, su privacidad es protegida de acuerdo a la política de privacidad de AmeriSpeak (amerispeak.org/privacy).

<u>Confidentiality and Storage</u>
All survey and interview responses will remain confidential. Your personal identifying information will not be shared with the researchers outside of AmeriSpeak who are conducting this research. If you complete the survey, your answers will be stored for potential future research. If you do not finish the survey, or you desire to withdraw your responses to the survey, any information you provide will not be used for research.
<u>Confidencialidad y Almacenamiento</u>
Todas las respuestas a las encuestas y entrevistas serán confidenciales. Su información personal identificación no será compartida por los investigadores fuera de AmeriSpeak, quienes están realizando esta encuesta. Si usted completa la encuesta, sus respuestas serán almacenadas para una futura posible investigación. Si usted no termina la encuesta, o usted desea retirar las respuestas de la encuesta, toda la información que usted brinde no será utilizada para investigación.

To further help us protect your privacy, we have applied for a Certificate of Confidentiality from the National Institutes of Health. The researchers can use this Certificate to legally refuse to disclose information that may identify you in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings, for example, if there is a court subpoena.
Para ayudar a proteger su privacidad, hemos solicitado un Certificado de Confidencialidad del Instituto Nacional de Salud. Los investigadores pueden usar este Certificado para negarse legalmente a divulgar información que pueda identificarle en cualquier tipo de proceso civil, penal, administrativo, legislativo o de cualquier otro tipo a nivel federal, estatal, o local, si hay una orden judicial.

<u>Compensation</u>
[IF P_PARENT=1] You will be compensated for your time with a $5 Amazon gift card mailed to your house.
[IF P_PARENT=2] You will be compensated according to the AmeriSpeak award system.
<u>Compensación</u>
[IF P_PARENT=1] Usted será compensado por su tiempo con una tarjeta de regalo de $5 de Amazon que será enviada por correo a su casa
[IF P_PARENT=2] Usted será compensado/a de acuerdo al sistema de recompensas de AmeriSpeak.

<u>Other Support Resources</u>
If you ever need extra support or help with your feelings of loss you can visit the American Foundation for Suicide Prevention website: afsp.org/find-support. Alliance of Hope also offers support online: allianceofhope.org. Youth can also visit the following website: yourlifeyourvoice.org.
<u>Otros Recursos de Ayuda</u>
Si en algún momento necesita ayuda adicional con sus sentimientos de pérdida, usted puede visitar el sitio web de la Fundación Estadounidense de Prevención del Suicidio: afsp.org/find-support. Alianza de Esperanza también ofrece apoyo en línea: allianceofhope.org. Los jóvenes también pueden visitar el siguiente sitio web: yourlifeyourvoice.org.

<u>Voluntary nature of study</u>

Participating in this study is completely voluntary. Even if you decide to participate, you may change your mind and stop at any time. You do not have to answer any question that you do not feel comfortable answering.

<u>Naturaleza voluntaria del estudio</u>

La participación en este estudio es completamente voluntaria. Aún si decide participar, usted puede cambiar de opinión y detenerse en cualquier momento. Usted no tiene que contestar aquellas preguntas que le hagan sentir incómodo/a.

AmeriSpeak is conducting this study to support researchers at the University of Michigan: John Richardson, MPH; Daniel Eisenberg, PhD; Cheryl King, PhD; Lisa Prosser, PhD, MS; and David Hutton, PhD. This study is funded with a grant from the American Foundation for Suicide Prevention. The researchers at University of Michigan will only be analyzing de-identified results of this survey as a whole, and will not be able to link results to individual AmeriSpeak members.

AmeriSpeak está realizando este estudio para apoyar a los investigadores de la Universidad de Michigan: John Richardson, MPH; Daniel Eisenberg, PhD; Cheryl King, PhD; Lisa Prosser, PhD, MS; y David Hutton, PhD. Este estudio es financiado por una beca de la Fundación Estadounidense de Prevención del Suicidio. Los investigadores de la Universidad de Michigan sólo estarán analizando resultado no identificación de esta encuesta en su totalidad, y no podrán vincular los resultados con los miembros individuales de AmeriSpeak.

If you have any questions, concerns, or negative experiences with this survey, please contact the AmeriSpeak Support at support@AmeriSpeak.org or call (888) 326-9424

Si usted tiene preguntas, inquietudes, o experiencias negativas con esta encuesta, por favor contacte al Equipo de Apoyo de AmeriSpeak a ayuda@AmeriSpeak.org o llame al (888) 326-9424

If you have questions about your rights taking this survey as a member of AmeriSpeak, or if you have questions or concerns about this study and you want to talk with someone other than the researchers, please contact April Baker who works at the NORC Institutional Review Board, 55 E Monroe St, 20th Floor, Chicago IL 60603, email: baker-april@norc.org, phone: (312) 759-4014.

Si usted tiene preguntas sobre sus derechos al realizar esta encuesta como miembro de AmeriSpeak, o si usted tiene preguntas o preocupaciones sobre este estudio y usted quiere hablar con alguien que no sean los investigadores, por favor contacte a April Baker quien trabaja en el Consejo de Revisión Institucional de NORC, 55 E Monroe St, Piso 20, Chicago IL 60603, correo electrónico: baker-april@norc.org, teléfono: (312) 759-4014.

[CAWI] Below, please choose whether you agree to participate in the study or whether you do not want to participate in this study. If you agree to participate, <u>please print, save, or email yourself a copy of this page for your records.</u>

[CATI] Please tell me whether you agree to participate in the study or whether you do not want to participate in this study. If you agree to participate, <u>I can email you a copy of this consent information for your records.</u>

[CAWI] A continuación, por favor elija si está de acuerdo en participar en el estudio o si no desea participar en el estudio. Si usted está de acuerdo en participar, <u>por favor imprima, guarde, o envíese por correo electrónico una copia de esta página para sus registros.</u>

[CATI] Por favor dígame si usted desea participar en el estudio o si no desea participar en el estudio. Si usted desea participar, <u>puedo enviarle a usted por correo electrónico una copia de esta información de consentimiento para sus registros.</u>

CAWI RESPONSE OPTIONS:
1. I agree to participate in the study
2. I do NOT agree, and I will NOT take this survey

1. Estoy de acuerdo en participar en el estudio.
2. NO estoy de acuerdo, y NO realizaré esta encuesta

CATI RESPONSE OPTIONS:
1. AGREE TO PARTICIPATE
2. DO NOT AGREE

1. DE ACUERDO EN PARTICIPAR
2. NO DE ACUERDO

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*eligibility criteria:
Teen who knows someone who died by suicide, or knows someone who attempted, plus consent
Adult who knows someone who died by suicide, plus consent

[IF (P_PARENT=1 and Q2=2, 77, 98, 99) or (P_PARENT=2 and Q1=2, 77, 98, 99) or (CONSENT=2, 77, 98, 99), TERMINATE]

TERMINATE instruction should be short hand for:
→ SET QUAL=2, CO_DATE
→ GO TO TERMSORRY
→ No back (disable browser back button)
→ auto redirect to member portal after 10 seconds
[NO PIMS TRANSACTION]

TERMSORRY.

[CAWI] Thank you for your time today. Unfortunately you are not eligible for this study. We value your opinion and hope that you will participate in future AmeriSpeak surveys. Thank you for your time today.
[CAWI] Gracias por su tiempo hoy. Desafortunadamente no es elegible para este estudio. Valoramos su opinión y esperamos que usted participe en futuras encuestas de AmeriSpeak. Gracias por su tiempo hoy.

[CAWI] We will redirect you to the AmeriSpeak Member Portal in [n] seconds.
[CAWI] Lo/a re direccionáremos al Portal de Usuario de AmeriSpeak en [n] segundos.

[CATI] Thank you for your time today. Unfortunately you are not eligible for this study. Thank you so much for your participation. We will be in touch when your next survey is available. Have a great day/evening.
[CATI] Gracias por su tiempo hoy. Desafortunadamente no es elegible para este estudio. Muchas gracias por su participación. Estaremos en contacto cuando su próxima encuesta se encuentre disponible. Que tenga un buen día/ noche.

[[CATI] , ONLY OFFER THIS IF PROMPTED BY RESPONDENT: I mentioned earlier that we would complete the survey if you were eligible, and it appears that you are not for this particular survey. We appreciate your time and will be in touch with your next survey soon.]
[[CATI] , ONLY OFFER THIS IF PROMPTED BY RESPONDENT: Mencioné anteriormente que completaríamos la encuesta si usted era elegible, y al parecer usted no lo es para esta encuesta en particular. Le agradecemos por su tiempo y estaremos en contacto con su próxima encuesta pronto.]
[SET QUAL=2 "Not Qualified" and END INTERVIEW, no incentive given]
[REMOVE "PREVIOUS" BUTTON FROM PAGE]
[CAWI NO BACK – disable web browser back button]
CAWI auto-redirect to MEMBER PORTAL in 10 seconds, display remaining number of seconds in [n]

[DISPLAY4]
[CAWI] Thank you for agreeing to participate in this important study. Please remember that this survey can touch on difficult topics so please feel free to take a break and return to finish the survey as necessary.
[CAWI] Gracias por estar de acuerdo en participar en este importante estudio. Por favor recuerde que esta encuesta puede tocar temas difíciles así que por favor no dude en tomar un descanso y volver a finalizar la encuesta según sea necesario.
[CATI] Thank you for agreeing to participate in this important study. Please remember that this survey can touch on difficult topics so please feel free to take a break and we can return to finish the survey as necessary.
[CATI] Gracias por estar de acuerdo en participar en este importante estudio. Por favor recuerde que esta encuesta puede tocar temas difíciles así que por favor no dude en tomar un descanso y podemos volver a finalizar la encuesta según sea necesario.

teens (P_PARENT=1) will see a subset of the same Qs the adults (P_PARENT=2) see
teens who know someone who died by suicide see the same Qs as teens who know someone who attempted

[SHOW IF P_PARENT=2] [NUMBOX]
Q3.
How many people do you know who died by suicide?
¿Cuántas personas conoces que se hayan suicidado?
[CATI] ACCEPTABLE RANGE 0-100

[NUMBOX; ACCEPT NUMERIC RANGE 1-100; 777, 998, 999]

[SHOW IF P_PARENT=2 AND Q3 <>777, 998, 999] [NUMBOX]
Q3b.
How many of these deaths happened in the past 10 years?
¿Cuántas de estas muertes sucedieron en los últimos 10 años?
[CATI] ACCEPTABLE RANGE 0-MAX(Q3 Response)

[NUMBOX; ACCEPT NUMERIC RANGE 0-MAX(Q3 Response); 777, 998, 999]

[SHOW IF Q3=2-100]
[SP]
Q4.
Was the most recent suicide the one that impacted your life the most?
¿Fue el más reciente suicidio el que más impactó a su vida?

CAWI RESPONSE OPTIONS:
1. Yes
2. No

1. Sí
2. No

CATI RESPONSE OPTIONS:
1. YES
2. NO

1. SÍ
2. NO

[SHOW IF Q4=2]
[SP]
Q5.
What effect did the most recent suicide have on your life?
¿Qué efecto tuvo en su vida el suicidio más reciente?

RESPONSE OPTIONS:
1. No effect

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2. Little effect
3. Moderate effect
4. Large effect
5. Extreme effect

1. Sin efecto
2. Poco efecto
3. Efecto moderado
4. Gran efecto
5. Efecto extremo

DISPLAY – Q6
For the rest of the survey, please answer all questions about the suicide <u>that impacted your life the most.</u>
Para el resto de la encuesta, por favor responda todas las preguntas sobre el suicidio <u>que impacto más su vida.</u>

[SHOW IF P_PARENT=2] [SP]
Q7.
Who was the person that died by suicide?
¿Quién fue la persona que se suicidó?

RESPONSE OPTIONS:
1. Sibling
2. Spouse or partner
3. Your child
4. Your parent
5. Grandparent
6. Cousin
7. Aunt or uncle
8. Niece or nephew
9. Friend that was not a family member
10. Peer or colleague at school, work, or church that was not a friend
11. Neighbor that was not a friend
12. Celebrity
13. Other (please specify): [SMALL TEXTBOX]

1. Hermano
2. Esposo o pareja
3. Su hijo/a
4. Su padre/madre
5. Abuelo
6. Prima/Primo
7. Tío o tía
8. Sobrino o sobrina

9. Amigo/a que no era miembro de su familia
10. Compañero/a o colega de la escuela, trabajo, o escuela que no era su amigo/a
11. Vecino que no era su amigo/a
12. Celebridad
13. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]

[SHOW IF P_PARENT=2] [SP]
Q8A.

What was the person's sexual orientation?
¿Cuál era la orientación sexual de la persona?

RESPONSE OPTIONS:
1. Heterosexual/straight
2. Gay/lesbian/homosexual
3. Bisexual
77. Not sure
4. Decline to state

1. Heterosexual
2. Gay/lesbiana/homosexual
3. Bisexual
77. No estoy seguro
4. Se niega a contestar

[SHOW IF P_PARENT=2] [MP]
Q9A.
What was the person's gender? (Please <u>select all that apply</u>)
¿Cuál era el género de la persona? (Por favor <u>seleccione todas las que apliquen</u>)

RESPONSE OPTIONS:

1. Male
2. Female
3. Transgender, Male-to-Female (MTF)
4. Transgender, Female-to-Male (FTM)
5. Transgender, did not identify as male or female
77. Not sure [SP]
6. Decline to state [SP]

1. Masculino
2. Femenino
3. Transexual, Masculino -a-Femenino (MTF)
4. Transexual, Femenino-a-Masculino (FTM)
5. Transexual, no se identificaba como hombre ni como mujer
77. No estoy seguro [SP]
6. Se niega a contestar [SP]

[SHOW IF P_PARENT=2] [SP]
Q10A.
Approximately, what was the person's age?
Aproximadamente, ¿cuál era la edad de la persona?

RESPONSE OPTIONS:
1. Less than 18
2. 18-24
3. 25-44
4. 45-64
5. 65 or older
77. Not sure

1. Menos de 18
2. 18-24
3. 25-44
4. 45-64
5. 65 años o más
77. No estoy seguro

[SHOW IF P_PARENT=2] [TEXTBOX] [NUMBOX]
[CAWI CUSTOM PROMPT: We would really like your answer to this question. Please provide your best guess if you do not remember exactly.]

[CAWI CUSTOM PROMPT: Realmente nos interesa su respuesta a esta pregunta. Por favor, brinde su mejor estimación, si no recuerda exactamente.]
[CATI] IF RESPONDENT DOES NOT PROVIDE AN ANSWER TELL THEM IT IS OK TO PROVIDE AN ESTIMATE
Q8.
What month and year did the suicide happen?
¿En qué mes y año sucedió el suicidio?

Q8M. Month: [dropdown January – December]
Q8Y. Year: [NUMBOX 1900 - 2017]
Q8M. Meses: [dropdown January – December]
Q8Y. Año: [NUMBOX 1900 - 2017]

CALCULATE DATA-ONLY VARIABLE: TIMESINCE
WHERE TIMESINCE= number of months between survey admin date and Q8M/Q8Y

[SHOW IF P_PARENT=2] [SP]
Q9.
[CAWI] The year before the death, how connected did you feel to the person on a scale of 1 to 7, where 1 is low connectedness and 7 is high connectedness? Z in the figures below represents the person who died by suicide.
[CAWI] El año anterior a la muerte, ¿cuán conectado/a se sentía usted con esa persona en una escala del 1 al 7, donde 1 significa baja conexión y 7 significa alta conexión? Z en las siguientes cifras representa a la persona que se suicidó.

[CATI] The year before the death, how connected did you feel to the person on a scale of 1 to 7, where 1 is low connectedness and 7 is high connectedness?
[CATI] El año anterior a la muerte, ¿cuán conectado/a se sentía usted con esa persona en una escala del 1 al 7, donde 1 significa baja conexión y 7 significa alta conexión?

RESPONSE OPTIONS:
[SHOW IF LANGSWITCH = EN, 77, 98, 99]

--- Low Connectedness
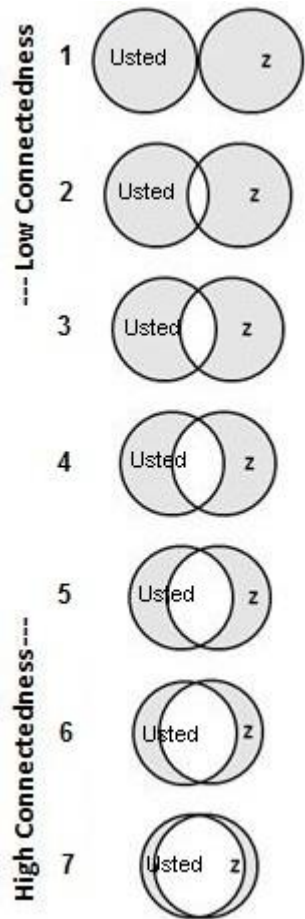
1 You | z

2 You | z

3 You | z

4 You | z

5 You | z

High Connectedness---

6 You | z

7 You | z

[PROGRAMMIING NOTE: EACH SET OF CIRCLES IS A RESPONSE OPTIONS]

[SHOW IF P_PARENT=2] [SP]
Q10.
The year before the death, how stressful was your relationship with the person?
El año anterior a la muerte, ¿cuán estresante era su relación con esa persona?

RESPONSE OPTIONS:

1. Extremely stressful
2. Really stressful
3. Moderately stressful
4. A little stressful
5. Not at all stressful

1. Extremadamente estresante
2. Realmente estresante
3. Moderadamente estresante
4. Un poco estresante
5. Nada estresante

Q11.
[CAWI] Please mark any mental illnesses or drug use problems that the individual who died by suicide had. Please <u>select all that apply.</u> If the person had none that you were aware of, then mark "none that I know."
[CAWI] Por favor marque cualquier enfermedad mental o problema con uso de drogas que tuviera la persona que se suicidó. Por favor <u>seleccione todas las que apliquen.</u> Si la persona no tenía ninguna que usted supiera, marque "ninguna que yo sepa."

[CATI] Please tell me any mental illnesses or drug use problems that the individual who died by suicide had.
[CATI] Por favor dígame cualquier enfermedad mental o problema con uso de drogas que tuviera la persona que se suicidó.

[CATI] SELECT ALL THAT APPLY
[CATI] SELECCIONE TODAS LAS OPCIONES QUE CORRESPONDAN.
[CATI] IF RESPONDENT SAYS NONE, THEN SELECT 'NONE THAT YOU KNOW'

CAWI RESPONSE OPTIONS:

1. Depression
2. Anxiety
3. PTSD
4. Bipolar Disorder
5. Schizophrenia
6. Alcohol use problems
7. Opioid use problems
8. Other drug use problems
9. Autism
10. Other (please specify): [SMALL TEXTBOX]
11. None that I know [SP]

1. Depresión
2. Ansiedad
3. TEPT (El trastorno de estrés postraumático)
4. Trastorno bipolar
5. Esquizofrenia
6. Problemas por consumo de alcohol
7. Problemas por consumo de opiáceos
8. Problemas por consumo de otras drogas
9. Autismo
10. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]
11. Ninguna que yo sepa [SP]

CATI RESPONSE OPTIONS:

1. Depression
2. Anxiety
3. PTSD
4. Bipolar Disorder
5. Schizophrenia
6. Alcohol use problems
7. Opioid use problems
8. Other drug use problems
9. Autism
10. Other (please specify): [SMALL TEXTBOX]
11. None that you know [SP]

1. Depresión
2. Ansiedad
3. TEPT (El trastorno de estrés postraumático)
4. Trastorno bipolar
5. Esquizofrenia
6. Problemas por consumo de alcohol
7. Problemas por consumo de opiáceos
8. Problemas por consumo de otras drogas
9. Autismo
10. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]
11. Ninguna que usted sepa [SP]

[SHOW IF P_PARENT=2] [MP]
Q12.
[CAWI] Please mark any mental illnesses or drug use problems that <u>you had before the suicide happened.</u> Please select all that apply. If you had none that you were aware of, then mark "none that I know."
[CAWI] Por favor marque cualquier enfermedad mental o problemas de abuso de drogas que <u>usted tenía antes de que ocurriera el suicidio.</u> Por favor seleccione todas las que aplique. Si usted no tenía ninguno que usted supiera, marque "ninguna que yo sepa."

[CATI] Please tell me any mental illnesses or drug use problems that <u>you had before the suicide happened.</u>
[CATI] Por favor dígame cualquier enfermedad mental o problema con consumo de drogas que <u>usted tenía antes de que ocurriera el suicidio.</u>

[CATI] SELECT ALL THAT APPLY
[CATI] SELECCIONE TODAS LAS OPCIONES QUE CORRESPONDAN.
[CATI] IF RESPONDENT SAYS NONE, THEN SELECT 'NONE THAT YOU KNOW'

CAWI RESPONSE OPTIONS:
1. Depression
2. Anxiety
3. PTSD
4. Bipolar Disorder
5. Schizophrenia
6. Alcohol use problems
7. Opioid use problems
8. Other drug use problems
9. Autism
10. Other (please specify): [SMALL TEXTBOX]
11. None that I know [SP]

1. Depresión
2. Ansiedad
3. TEPT (El trastorno de estrés postraumático)
4. Trastorno bipolar
5. Esquizofrenia
6. Problemas por consumo de alcohol
7. Problemas por consumo de opiáceos
8. Problemas por consumo de otras drogas
9. Autismo
10. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]
11. Ninguna que yo sepa [SP]

CATI RESPONSE OPTIONS:
1. Depression
2. Anxiety
3. PTSD
4. Bipolar Disorder
5. Schizophrenia
6. Alcohol use problems
7. Opioid use problems
8. Other drug use problems
9. Autism
10. Other (please specify): [SMALL TEXTBOX]
11. None that you know [SP]

1. Depresión
2. Ansiedad
3. TEPT (El trastorno de estrés postraumático)
4. Trastorno bipolar
5. Esquizofrenia
6. Problemas por consumo de alcohol
7. Problemas por consumo de opiáceos
8. Problemas por consumo de otras drogas
9. Autismo
10. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]
11. Ninguna que usted sepa [SP]

SHOWN TO ALL Rs WHO KNOW SOMEONE WHO COMMITTED SUICIDE (Q1)
[SHOW Q1=1] [SP]
Q13.
Do you consider yourself a survivor of suicide loss? That is, someone whose life has been personally affected by a suicide?

¿Se considera usted un/a sobreviviente a una pérdida por suicidio? Eso significa, ¿alguien cuya vida haya sido personalmente afectada por un suicidio?

[CATI] IF RESPONDENT SAYS YES: Would you say definitely yes or probably yes?
[CATI] IF RESPONDENT SAYS NO: Would you say probably not or definitely not?
[CATI] IF RESPONDENT SAYS YES: ¿Diría usted que definitivamente sí o probablemente sí?
[CATI] IF RESPONDENT SAYS NO: ¿Diría usted que probablemente no o definitivamente no?

CAWI RESPONSE OPTIONS:
1. Definitely yes
2. Probably yes
3. Might or might not
4. Probably not
5. Definitely not

1. Definitivamente sí
2. Probablemente sí
3. Puede ser que sí o que no
4. Probablemente no
5. Definitivamente no

CATI RESPONSE OPTIONS:
1. DEFINITELY YES
2. PROBABLY YES
3. MIGHT OR MIGHT NOT
4. PROBABLY NOT
5. DEFINITELY NOT

1. DEFINITIVAMENTE SÍ
2. PROBABLEMENTE SÍ
3. PUEDE SER QUE SÍ O QUE NO
4. PROBABLEMENTE NO
5. DEFINITIVAMENTE NO

[SHOW IF P_PARENT=2] [TEXTBOX]
Q14.
What have been the three strongest feelings you have had about the suicide?
¿Cuáles han sido los tres sentimientos más fuertes que usted ha sentido sobre el suicidio?

Q14_1. Feeling 1: [SMALL TEXTBOX]
Q14_2. Feeling 2: [SMALL TEXTBOX]
Q14_3. Feeling 3: [SMALL TEXTBOX]

Q14_1. Sentimiento 1: [SMALL TEXTBOX]
Q14_2. Sentimiento 2: [SMALL TEXTBOX]
Q14_3. Sentimiento 3: [SMALL TEXTBOX]

SHOWN TO ALL ELIGIBLE Rs
FIRST SURVEY Q FOR TEENS (P_PARENT=1) WHO ONLY KNOW SOMEONE WHO ATTEMPTED SUICIDE
[SHOW ALL] [SP]
Q15.
[IF Q1=1] What effect did the death have on your life? [IF P_PARENT=1, INSERT: "If more than one suicide deaths have affected you, then think of the one that impacted you the most for this and all other questions in this survey."]
[IF Q2=1] The questions in this survey will be about the impact of someone else's suicide attempt on you.
[IF Q1=1] ¿Qué efecto tuvo la muerte en su vida? [IF P_PARENT=1, INSERT: "Si más de un suicidio le ha afectado, piense en el que tuvo mayor impacto para esta pregunta y el resto de las preguntas de esta encuesta."]
[IF Q2=1] Las preguntas en esta encuesta serán sobre el impacto del intento de suicidio de otra persona en usted.

[IF Q2=1] What effect did the suicide attempt have on your life? If there have been more than one, then think about the one that impacted you the most for this and all other questions in the survey.
[IF Q2=1] ¿Qué efecto tuvo el intento de suicidio en su vida? Si ha habido más de uno, piense en la que tuvo mayor impacto para esta pregunta y el resto de las preguntas de esta encuesta.

RESPONSE OPTIONS:
1. No effect
2. Little effect
3. Moderate effect
4. Large effect
5. Extreme effect

1. Sin efecto
2. Poco efecto
3. Efecto moderado
4. Gran efecto
5. Extremo efecto

SHOWN TO ALL ELIGIBLE Rs
[SHOW ALL] [SP] [PROMPT TWICE]
Q16.

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[IF P_PARENT=2 or (P_PARENT=1 and Q1=1)] Did the death have an effect on your overall emotional, mental, or physical health at any time?
[IF P_PARENT=1 and Q2=1] Did the suicide attempt have an effect on your overall emotional, mental, or physical health at any time?
[IF P_PARENT=2 or (P_PARENT=1 and Q1=1)] ¿Tuvo la muerte un efecto en su salud emocional, mental o física en general en algún momento?
[IF P_PARENT=1 and Q2=1] ¿Tuvo el intento de suicidio un efecto en su salud emocional, mental o física en general en algún momento?

CAWI RESPONSE OPTIONS:
         1. Yes
         2. No

         1. Sí
         2. No

CATI RESPONSE OPTIONS:
         1. YES
         2. NO

         1. SÍ
         2. NO

[SHOW IF Q16=1]
[SP]
Q17.
For how long was your overall health affected? This includes your <u>emotional, mental, and physical health</u>.
¿Por cuánto tiempo se vio afectada su salud general? Esto incluye su <u>salud emocional, mental, y física</u>.

CAWI RESPONSE OPTIONS:
1. Less than 6 months
2. 6 months to a year
3. More than a year
4. My overall health is still affected

1. Menos de 6 meses
2. De 6 meses a un año
3. Más de un año
4. Mi salud general aún está afectada

CATI RESPONSE OPTIONS:

1. Less than 6 months
2. 6 months to a year
3. More than a year
4. Your overall health is still affected

1. Menos de 6 meses
2. De 6 meses a un año
3. Más de un año
4. Su salud general aún está afectada

SHOWN TO TEENS (P_PARENT=1) and ADULTS (P_PARENT=2)
[GRID 4,4; SP]
Q18.
[CAWI] Please select in what ways you feel changed or not changed by the [IF P_PARENT=2 or (P_PARENT=1 and Q1=1), INSERT: death][IF P_PARENT=1 and Q2=1, INSERT: suicide attempt of the person you know].
[CAWI] Por favor selecciona en qué formas se siente usted cambiado/a o no cambiado/a por [IF P_PARENT=2 or (P_PARENT=1 and Q1=1), INSERT: la muerte][IF P_PARENT=1 and Q2=1, INSERT: el intento de suicidio de la persona que usted conoce].

[CATI] Please tell me in what ways you feel changed or not changed by the [IF P_PARENT=2 or (P_PARENT=1 and Q1=1), INSERT: death][IF P_PARENT=1 and Q2=1, INSERT: suicide attempt of the person you know].
[CATI] Por favor dígame en qué formas se siente usted cambiado/a o no cambiado/a por [IF P_PARENT=2 or (P_PARENT=1 and Q1=1), INSERT: la muerte][IF P_PARENT=1 and Q2=1, INSERT: el intento de suicidio de la persona que usted conoce].

CAWI GRID ITEMS:
Q18_1. How clearly I think or focus
Q18_2. The way I feel emotionally
Q18_3. My social life
Q18_4. My goals and purpose in life
Q18_5. The way I take care of myself physically
Q18_6. My sleep
Q18_7. My spirituality
Q18_8. How well I work at my job or school

Q18_1. Qué tan claramente pienso o me concentro
Q18_2. La forma en la que me siento emocionalmente
Q18_3. Mi vida social
Q18_4. Mis metas y propósito en la vida
Q18_5. La forma en la que me cuido físicamente
Q18_6. Mi sueño
Q18_7. Mi espiritualidad

Q18_8. Qué tan bien trabajo en mi empleo o escuela

Q18_1. How clearly you think or focus
Q18_2. The way you feel emotionally
Q18_3. Your social life
Q18_4. Your goals and purpose in life
Q18_5. The way you take care of yourself physically
Q18_6. Your sleep
Q18_7. Your spirituality
Q18_8. How well you work at your job or school

Q18_1. Qué tan claramente pienso o me concentro
Q18_2. La forma en la que se siente emocionalmente
Q18_3. Su vida social
Q18_4. Sus metas y propósito en su vida
Q18_5. La forma en la que se cuida físicamente
Q18_6. Su sueño
Q18_7. Su espiritualidad
Q18_8. Qué tan bien trabaja en su empleo o escuela

RESPONSE OPTIONS:
1. Not changed
2. Changed for a time
3. Changed permanently

1. No ha cambiado
2. Cambió por un tiempo
3. Cambió permanentemente

[SHOW IF P_PARENT=2 and Q18_8=2,3]
[NUMBOX]
Q19.
[CAWI] You indicated earlier that the suicide death impacted how well you worked at your job or at school. About how long was your performance at work or school affected?
[CAWI] Usted indicó anteriormente que el suicidio impactó en lo bien que trabajaba en su empleo o escuela. ¿Durante cuánto tiempo se vio afectado su rendimiento en su empleo o escuela?

[CATI] You said earlier that the suicide death impacted how well you worked at your job or at school. About how long was your performance at work or school affected?
[CATI] Usted dijo anteriormente que el suicidio impactó en lo bien que trabajaba en su empleo o escuela. ¿Durante cuánto tiempo se vio afectado su rendimiento en su empleo o escuela?

Weeks [NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Months [NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Years [NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Semanas [NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]

Meses [NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Años [NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]

[SHOW IF P_PARENT=2 and Q18_8=2,3]
[CAWI – HORIZONTAL SLIDING SCALE]
[CATI – NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Q20.
[CAWI] To what extent was your performance <u>at work or school</u> affected during this time?
[CATI] To what extent was your performance <u>at work or school</u> affected during this time? Please tell me on a scale 0 to 100, where "0" is no effect, that is, you worked just as well as everyone else, and "100" is a large effect where you could not do any work.
[CAWI] ¿En qué medida su rendimiento <u>en el trabajo o escuela</u> se vio afectado durante este tiempo?
[CATI] ¿En qué medida su rendimiento <u>en el trabajo o escuela</u> se vio afectado durante este tiempo? Por favor dígame en una escala del 0 al 100, donde "0" es sin efecto, eso significa, que usted trabajó tan bien como el resto, y "100" es un gran efecto en el cual usted no pudo realizar ningún trabajo.

[PROGRAMMING NOTE: SLIDING SCALE RANGING FROM 0 TO 100, WITH 1 UNIT INCREMENTS]

[SHOW IF P_PARENT=2 and Q18_8=2,3]
[NUMBOX]

Q21.
How many days or months of work or school did you miss because of the suicide?
¿Cuántos días o meses de trabajo o escuela perdió usted a causa del suicidio?

[CAWI] UNBOLD </B> <i> - *Type "0" if you did not miss any days.* </i>
[CAWI] UNBOLD </B> <i> - *Ingrese "0" si no perdió ningún día.* </i>
[CATI]: ENTER 0 IF RESPONDENTS DID NOT MISS ANY DAYS

Days [NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Months [NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Días [NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Meses [NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]

[SHOW IF P_PARENT=2] [SP]
Q22.
How much are you having trouble accepting the death of the person that died by suicide?
¿Cuán difícil le está resultando aceptar la muerte de la persona que se suicidó?

RESPONSE OPTIONS:
1. Not at all
2. Somewhat
3. A lot

1. Nada en absoluto
2. Algo
3. Mucho

[SHOW IF P_PARENT=2] [SP]
Q23.
How much does your grief still interfere with your life?
¿Cuánto interfiere aún su duelo con su vida?

RESPONSE OPTIONS:
1. Not at all
2. Somewhat
3. A lot

1. Nada en absoluto
2. Algo
3. Mucho

[SHOW IF P_PARENT=2] [SP]

How much are you having images or thoughts of when the person died by suicide or other thoughts about the death that really bother you?

¿En qué medida está teniendo imágenes o pensamientos del momento en que la persona se suicidó o pensamientos sobre la muerte que realmente le perturban?

RESPONSE OPTIONS:
1. Not at all
2. Somewhat
3. A lot

1. Nada en absoluto
2. Algo
3. Mucho

[SHOW IF P_PARENT=2] [SP]
Q25.
Are there things you used to do when the person was alive that you don't feel comfortable doing anymore, that you avoid? Like going somewhere you went with him/her, or doing things you used to enjoy together? Or avoiding looking at pictures or talking about the person? How much are you avoiding these things?

¿Hay cosas que usted solía hacer cuando la persona estaba viva que ahora ya no se siente cómodo/a haciendo, y que evita? ¿Como ir a algún lugar que solía ir con él/ella, o hacer cosas que solían hacer juntos? ¿O evitar mirar fotos o hablar de la persona? ¿En qué medida está usted evitando estas cosas?

RESPONSE OPTIONS:
1. Not at all
2. Somewhat
3. A lot

1. Nada en absoluto
2. Algo
3. Mucho

[SHOW IF P_PARENT=2] [SP]
Q26.
How much are you feeling cut off or distant from other people since the person died, even people you used to be close to like family or friends?

¿En qué medida se está sintiendo usted desconectado/a o distante de otras personas desde que la persona murió, aún de personas con las que usted era cercano/a, como familiares o amigos?

RESPONSE OPTIONS:

160

1. Not at all
2. Somewhat
3. A lot

1. Nada en absoluto
2. Algo
3. Mucho

[SHOW IF P_PARENT=2] [SP]
Q27.
Before the suicide, had you ever thought about killing yourself?
Antes del suicidio, ¿había pensado alguna vez en quitarse la vida?

CAWI RESPONSE OPTIONS:
1. Yes
2. No

1. Sí
2. No

CATI RESPONSE OPTIONS:
1. YES
2. NO

1. SÍ
2. NO

[SHOW IF P_PARENT=2] [SP]
Q28.
Since the suicide happened, have you ever thought about killing yourself?
Desde que ocurrió el suicidio, ¿ha pensado alguna vez en quitarse la vida?

CAWI RESPONSE OPTIONS:
1. Yes
2. No

1. Sí
2. No

CATI RESPONSE OPTIONS:
1. YES
2. NO

1. SÍ
2. NO

[CAWI] You have marked that you have had thoughts of killing yourself at some time in your life. Many people who know someone who died by suicide also have thoughts of dying by suicide themselves.
[CAWI] Usted ha marcado que ha tenido pensamientos sobre quitarse la vida en algún momento de su vida. Muchas personas que conocen a alguien que se ha suicidado, también han tenido pensamientos de suicidarse.

[CATI] You have said that you have had thoughts of killing yourself at some time in your life. Many people who know someone who died by suicide also have thoughts of dying by suicide themselves.
[CATI] Usted ha dicho que ha tenido pensamientos sobre quitarse la vida en algún momento de su vida. Muchas personas que conocen a alguien que se ha suicidado, también han tenido pensamientos de suicidarse.

We hope you are feeling okay right now, and we want you to get help and support in any of your current struggles.
Esperamos que usted se está sintiendo bien ahora, y queremos que usted reciba ayuda y apoyo en cualquiera de sus batallas actuales.

If you are currently struggling with thoughts of suicide, <u>PLEASE</u> visit this website to see what help and support you can get right now: suicidepreventionlifeline.org. You can also call the national suicide prevention lifeline at 1-800-273-8255 to talk with someone about your thoughts and struggles with life. They will listen. They will help.
Si usted está actualmente batallando con pensamientos suicidas, <u>POR FAVOR</u> visite este sitio web para ver qué ayuda y apoyo usted puede recibir ahora: suicidepreventionlifeline.org. Usted también puede llamar a la línea de prevención del suicidio al 1-888-628-9454 para hablar con alguien sobre sus pensamientos y batallas en su vida. Ellos escucharán. Ellos le ayudarán.

Youth can also visit the following website: yourlifeyourvoice.org.
Los jóvenes también pueden visitar el siguiente sitio web: yourlifeyourvoice.org.

[CAWI] You marked earlier that the death affected your emotional, mental, or physical health.
[CAWI] Usted marcó anteriormente que la muerte le afectó su salud emocional, mental, o física.

[CATI] You said earlier that the death affected your emotional, mental, or physical health.
[CATI] Usted dijo anteriormente que la muerte le afectó su salud emocional, mental, o física.

The following questions will ask you about your overall health before the suicide occurred and at different time intervals after the suicide occurred.
Las siguientes preguntas le consultarán sobre su salud general antes de que ocurriera el suicidio y en diferentes intervalos de tiempo después que el suicidio ocurrió.

[SHOW IF P_PARENT=2 and Q16=1]
[CAWI – HORIZONTAL SLIDING SCALE]
[CATI – NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Q31.
[CAWI] <u>The year before the suicide</u>, how was your overall health? Please indicate your response on the scale below.
[CAWI] <u>El año anterior al suicidio</u>, ¿cómo era su salud general? Por favor indique su respuesta en la siguiente escala.

[CATI] <u>The year before the suicide</u>, how was your overall health? Please tell me your response using the same scale.
[CATI] <u>El año anterior al suicidio</u>, ¿cómo era su salud general? Por favor dígame su respuesta utilizando la misma escala.

0 is where you are extremely anxious or depressed, you are confined to bed, unable to wash or dress yourself, unable to perform your usual activities, and you have extreme pain or discomfort.
0 es si usted está muy ansioso/a o deprimido/a, tiene que estar en la cama, es incapaz de lavarse o vestirse, es incapaz de realizar sus actividades cotidianas, y tiene mucho dolor o malestar.

100 is where you are not anxious or depressed, you have no problems walking about, no problems with self-care, no problems performing your usual activities, and no pain or discomfort.
100 es cuando usted no está ansioso/a o deprimido/a, no tiene problemas para caminar, no tiene problemas con el cuidado personal, no tiene problemas para realizar sus actividades cotidianas, y no tiene dolor ni malestar.

[CAWI] A 1 unit change at the lower end of the scale should be the same as a 1 unit change at the higher end of the scale.
[CAWI] Un cambio de 1 unidad en el extremo más bajo de la escala debería ser lo mismo que un cambio de 1 unidad en el extremo más alto de la escala.

[PROGRAMMING NOTE: THIS IS A HORIZONTAL SLIDING SCALE WITH 1 UNIT INCREMENTS]

[SHOW IF P_PARENT=2 and Q16=1]
[CAWI – HORIZONTAL SLIDING SCALE]
[CATI – NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Q32.
[CAWI] This question is the same as the previous question but for a different time period.
[CAWI] Esta pregunta es la misma que la pregunta anterior pero para un período de tiempo diferente.

[CAWI] <u>Within the first week after the suicide happened</u>, how was your overall health? Please indicate your response on the scale below.
[CAWI] <u>Dentro de la primera semana después que el suicidio ocurrió</u>, ¿cómo era su salud general? Por favor indique su respuesta en la siguiente escala.

[CATI] <u>Within the first week after the suicide happened</u>, how was your overall health? Please tell me your response using the same scale. REPEAT THE BELOW SCALE INSTRUCTIONS IF NECESSARY
[CATI] <u>Dentro de la primera semana después que el suicidio ocurrió</u>, ¿cómo era su salud general? Por favor dígame su respuesta utilizando la misma escala. REPEAT THE BELOW SCALE INSTRUCTIONS IF NECESSARY

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0 is where you are extremely anxious or depressed, you are confined to bed, unable to wash or dress yourself, unable to perform your usual activities, and you have extreme pain or discomfort.
0 es si usted está muy ansioso/a o deprimido/a, tiene que estar en la cama, es incapaz de lavarse o vestirse, es incapaz de realizar sus actividades cotidianas, y tiene mucho dolor o malestar.

100 is where you are not anxious or depressed, you have no problems walking about, no problems with self-care, no problems performing your usual activities, and no pain or discomfort.
100 es cuando usted no está ansioso/a o deprimido/a, no tiene problemas para caminar, no tiene problemas con el cuidado personal, no tiene problemas para realizar sus actividades cotidianas, y no tiene dolor ni malestar.

[CAWI] A 1 unit change at the lower end of the scale should be the same as a 1 unit change at the higher end of the scale.
[CAWI] Un cambio de 1 unidad en el extremo más bajo de la escala debería ser lo mismo que un cambio de 1 unidad en el extremo más alto de la escala.

FOR TRANSLATION ONLY
Overall Health
Salud General

Extremely anxious or depressed; Confined to bed; Unable to wash or dress yourself; Unable to perform your usual activities; and Extreme pain or discomfort
Extremadamente ansioso/a o deprimido/a; Confinado/a a la cama; No puede lavarse ni vestirse; No puede desarrollar sus actividades habituales, y Dolores o molestias extremas.

Not anxious or depressed; No problems walking about; No problems with self-care; No problems performing your usual activities; and No pain or discomfort
Sin ansiedad ni depresión; Sin problemas para caminar; Sin problemas con auto-cuidado; Sin problemas para realizar sus actividades habituales; Sin dolor o molestias

[PROGRAMMING NOTE: THIS IS A HORIZONTAL SLIDING SCALE WITH 1 UNIT INCREMENTS]

Q33.
[CAWI] This question is the same as the previous question but for a different time period.
[CAWI] Esta pregunta es la misma que la pregunta anterior pero para un período de tiempo diferente.

[CAWI] <u>About three months after the suicide happened</u>, how was your overall health? Please indicate your response on the scale below.
[CAWI] <u>Aproximadamente tres meses después que el suicidio ocurrió</u>, ¿cómo era su salud general? Por favor indique su respuesta en la siguiente escala.

[CATI] <u>About three months after the suicide happened</u>, how was your overall health? Please tell me your response using the same scale. REPEAT THE BELOW SCALE INSTRUCTIONS IF NECESSARY
[CATI] <u>Aproximadamente tres meses después que el suicidio ocurrió</u>, ¿cómo era su salud general? Por favor dígame su respuesta utilizando la misma escala. REPEAT THE BELOW SCALE INSTRUCTIONS IF NECESSARY

0 is where you are extremely anxious or depressed, you are confined to bed, unable to wash or dress yourself, unable to perform your usual activities, and you have extreme pain or discomfort.
0 es si usted está muy ansioso/a o deprimido/a, tiene que estar en la cama, es incapaz de lavarse o vestirse, es incapaz de realizar sus actividades cotidianas, y tiene mucho dolor o malestar.

100 is where you are not anxious or depressed, you have no problems walking about, no problems with self-care, no problems performing your usual activities, and no pain or discomfort.
100 es cuando usted no está ansioso/a o deprimido/a, no tiene problemas para caminar, no tiene problemas con el cuidado personal, no tiene problemas para realizar sus actividades cotidianas, y no tiene dolor ni malestar.

[CAWI] A 1 unit change at the lower end of the scale should be the same as a 1 unit change at the higher end of the scale.
[CAWI] Un cambio de 1 unidad en el extremo más bajo de la escala debería ser lo mismo que un cambio de 1 unidad en el extremo más alto de la escala.

Extremely anxious or depressed; Confined to bed; Unable to wash or dress yourself; Unable to perform your usual activities; and Extreme pain or discomfort	Not anxious or depressed; No problems walking about; No problems with self-care; No problems performing your usual activities; and No pain or discomfort

0 10 20 30 40 50 60 70 80 90 100

Overall Health

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Overall Health
Salud General

Extremely anxious or depressed; Confined to bed; Unable to wash or dress yourself; Unable to perform your usual activities; and Extreme pain or discomfort
Extremadamente ansioso/a o deprimido/a; Confinado/a a la cama; No puede lavarse ni vestirse; No puede desarrollar sus actividades habituales, y Dolores o molestias extremas.

Not anxious or depressed; No problems walking about; No problems with self-care; No problems performing your usual activities; and No pain or discomfort
Sin ansiedad ni depresión; Sin problemas para caminar; Sin problemas con auto-cuidado; Sin problemas para realizar sus actividades habituales; Sin dolor o molestias

[PROGRAMMING NOTE: THIS IS A HORIZONTAL SLIDING SCALE WITH 1 UNIT INCREMENTS]

[SHOW IF P_PARENT=2 and Q17 > 1 and TIMESINCE>9]
[CAWI – HORIZONTAL SLIDING SCALE]
[CATI – NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Q34.

[CAWI] This question is the same as the previous question but for a different time period.
[CAWI] Esta pregunta es la misma que la pregunta anterior pero para un período de tiempo diferente.

[CAWI] <u>About nine months after the suicide happened</u>, how was your overall health? Please indicate your response on the scale below.
[CAWI] <u>Aproximadamente nueve meses después que el suicidio ocurrió</u>, ¿cómo era su salud general? Por favor indique su respuesta en la siguiente escala.

[CATI] <u>About nine months after the suicide happened</u>, how was your overall health? Please tell me your response using the same scale. REPEAT THE BELOW SCALE INSTRUCTIONS IF NECESSARY
[CATI] <u>Aproximadamente nueve meses después que el suicidio ocurrió</u>, ¿cómo era su salud general? Por favor dígame su respuesta utilizando la misma escala. REPEAT THE BELOW SCALE INSTRUCTIONS IF NECESSARY

0 is where you are extremely anxious or depressed, you are confined to bed, unable to wash or dress yourself, unable to perform your usual activities, and you have extreme pain or discomfort.
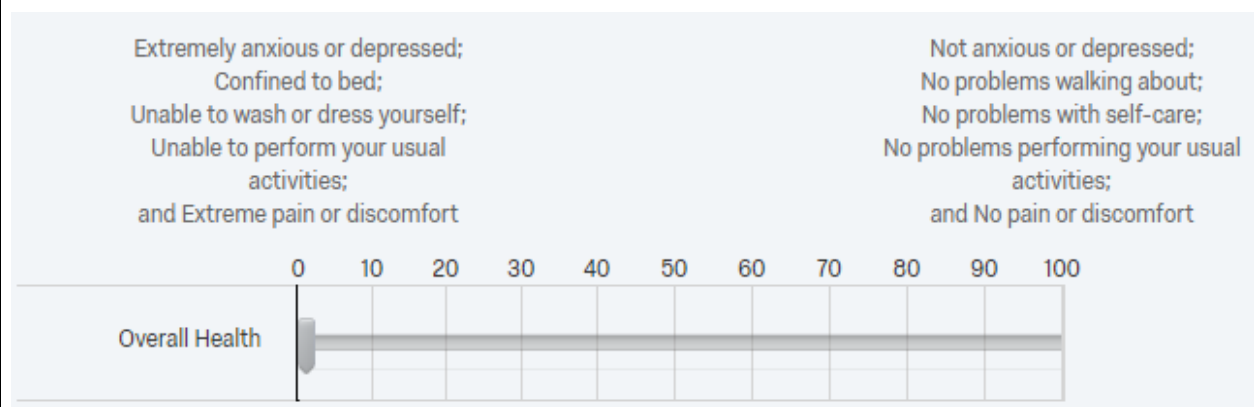
0 es si usted está muy ansioso/a o deprimido/a, tiene que estar en la cama, es incapaz de lavarse o vestirse, es incapaz de realizar sus actividades cotidianas, y tiene mucho dolor o malestar.

100 is where you are not anxious or depressed, you have no problems walking about, no problems with self-care, no problems performing your usual activities, and no pain or discomfort.

100 es cuando usted no está ansioso/a o deprimido/a, no tiene problemas para caminar, no tiene problemas con el cuidado personal, no tiene problemas para realizar sus actividades cotidianas, y no tiene dolor ni malestar.

[CAWI] A 1 unit change at the lower end of the scale should be the same as a 1 unit change at the higher end of the scale.

[CAWI] Un cambio de 1 unidad en el extremo más bajo de la escala debería ser lo mismo que un cambio de 1 unidad en el extremo más alto de la escala.

FOR TRANSLATION ONLY
Overall Health
Salud General

Extremely anxious or depressed; Confined to bed; Unable to wash or dress yourself; Unable to perform your usual activities; and Extreme pain or discomfort
Extremadamente ansioso/a o deprimido/a; Confinado/a a la cama; No puede lavarse ni vestirse; No puede desarrollar sus actividades habituales, y Dolores o molestias extremas.

Not anxious or depressed; No problems walking about; No problems with self-care; No problems performing your usual activities; and No pain or discomfort
Sin ansiedad ni depresión; Sin problemas para caminar; Sin problemas con auto-cuidado; Sin problemas para realizar sus actividades habituales; Sin dolor o molestias

[PROGRAMMING NOTE: THIS IS A HORIZONTAL SLIDING SCALE WITH 1 UNIT INCREMENTS]

[SHOW IF P_PARENT=2 and Q17>2 and TIMESINCE>24]
[CAWI – HORIZONTAL SLIDING SCALE]

[CATI – NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Q35.
[CAWI] This question is the same as the previous question but for a different time period.
[CAWI] Esta pregunta es la misma que la pregunta anterior pero para un período de tiempo diferente.

[CAWI] <u>About two years after the suicide happened</u>, how was your overall health? Please indicate your response on the scale below.
[CAWI] <u>Aproximadamente dos años después que ocurrió el suicidio</u>, ¿cómo era su salud general? Por favor indique su respuesta en la siguiente escala.

[CATI] <u>About two years after the suicide happened</u>, how was your overall health? Please tell me your response using the same scale. REPEAT THE BELOW SCALE INSTRUCTIONS IF NECESSARY
[CATI] <u>Aproximadamente dos años meses después que ocurrió el suicidio</u>, ¿cómo era su salud general? Por favor dígame su respuesta utilizando la misma escala. REPEAT THE BELOW SCALE INSTRUCTIONS IF NECESSARY

0 is where you are extremely anxious or depressed, you are confined to bed, unable to wash or dress yourself, unable to perform your usual activities, and you have extreme pain or discomfort.
0 es si usted está muy ansioso/a o deprimido/a, tiene que estar en la cama, es incapaz de lavarse o vestirse, es incapaz de realizar sus actividades cotidianas, y tiene mucho dolor o malestar.

100 is where you are not anxious or depressed, you have no problems walking about, no problems with self-care, no problems performing your usual activities, and no pain or discomfort.
100 es cuando usted no está ansioso/a o deprimido/a, no tiene problemas para caminar, no tiene problemas con el cuidado personal, no tiene problemas para realizar sus actividades cotidianas, y no tiene dolor ni malestar.

[CAWI] A 1 unit change at the lower end of the scale should be the same as a 1 unit change at the higher end of the scale.
[CAWI] Un cambio de 1 unidad en el extremo más bajo de la escala debería ser lo mismo que un cambio de 1 unidad en el extremo más alto de la escala.

| Extremely anxious or depressed; Confined to bed; Unable to wash or dress yourself; Unable to perform your usual activities; and Extreme pain or discomfort | | Not anxious or depressed; No problems walking about; No problems with self-care; No problems performing your usual activities; and No pain or discomfort |

0   10   20   30   40   50   60   70   80   90   100

Overall Health

FOR TRANSLATION ONLY
Overall Health

Salud General

Extremely anxious or depressed; Confined to bed; Unable to wash or dress yourself; Unable to perform your usual activities; and Extreme pain or discomfort
Extremadamente ansioso/a o deprimido/a; Confinado/a a la cama; No puede lavarse ni vestirse; No puede desarrollar sus actividades habituales, y Dolores o molestias extremas.

Not anxious or depressed; No problems walking about; No problems with self-care; No problems performing your usual activities; and No pain or discomfort
Sin ansiedad ni depresión; Sin problemas para caminar; Sin problemas con auto-cuidado; Sin problemas para realizar sus actividades habituales; Sin dolor o molestias

[PROGRAMMING NOTE: THIS IS A HORIZONTAL SLIDING SCALE WITH 1 UNIT INCREMENTS]

[SHOW IF P_PARENT=2 and Q16=1]
[CAWI – HORIZONTAL SLIDING SCALE]
[CATI – NUMBOX; ACCEPT NUMERIC RANGE 0-100; 777, 998, 999]
Q36.
[CAWI] This question is the same as the previous question but for a different time period.
[CAWI] <u>Today</u>, how is your overall health? Please indicate your response on the scale below.
[CAWI] Esta pregunta es la misma que la pregunta anterior pero para un período de tiempo diferente.
[CAWI] <u>Hoy</u>, ¿cómo es su salud general? Por favor indique su respuesta en la siguiente escala.

[CATI] <u>Today</u>, how is your overall health? REPEAT THE BELOW SCALE INSTRUCTIONS IF NECESSARY
[CATI] <u>Hoy</u>, ¿cómo es su salud general? Por favor dígame su respuesta según la misma escala. REPEAT THE BELOW SCALE INSTRUCTIONS IF NECESSARY

0 is where you are extremely anxious or depressed, you are confined to bed, unable to wash or dress yourself, unable to perform your usual activities, and you have extreme pain or discomfort.
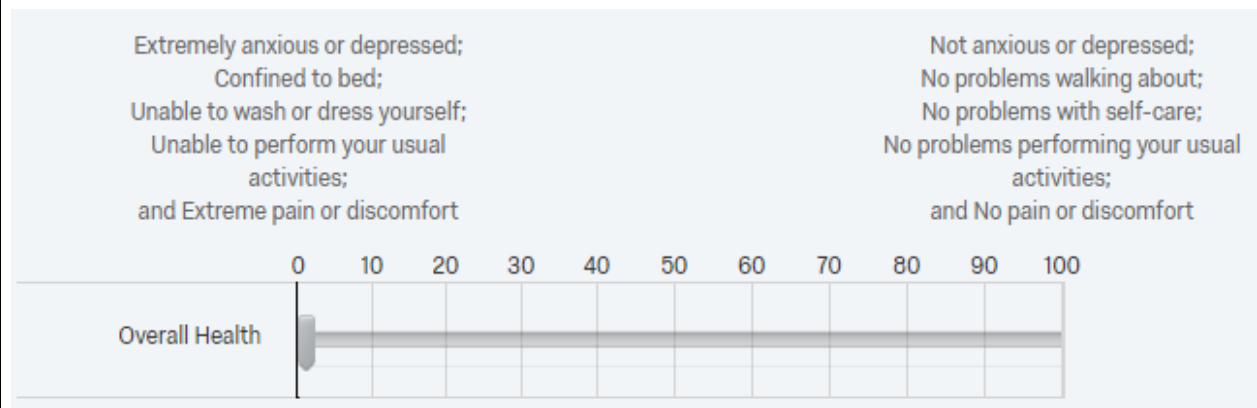0 es si usted está muy ansioso/a o deprimido/a, tiene que estar en la cama, es incapaz de lavarse o vestirse, es incapaz de realizar sus actividades cotidianas, y tiene mucho dolor o malestar.

100 is where you are not anxious or depressed, you have no problems walking about, no problems with self-care, no problems performing your usual activities, and no pain or discomfort.
100 es cuando usted no está ansioso/a o deprimido/a, no tiene problemas para caminar, no tiene problemas con el cuidado personal, no tiene problemas para realizar sus actividades cotidianas, y no tiene dolor ni malestar.

[CAWI] A 1 unit change at the lower end of the scale should be the same as a 1 unit change at the higher end of the scale.
[CAWI] Un cambio de 1 unidad en el extremo más bajo de la escala debería ser lo mismo que un cambio de 1 unidad en el extremo más alto de la escala.

Extremely anxious or depressed; Confined to bed; Unable to wash or dress yourself; Unable to perform your usual activities; and Extreme pain or discomfort

Not anxious or depressed; No problems walking about; No problems with self-care; No problems performing your usual activities; and No pain or discomfort

| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |

Overall Health

FOR TRANSLATION ONLY
Overall Health
Salud General

Extremely anxious or depressed; Confined to bed; Unable to wash or dress yourself; Unable to perform your usual activities; and Extreme pain or discomfort
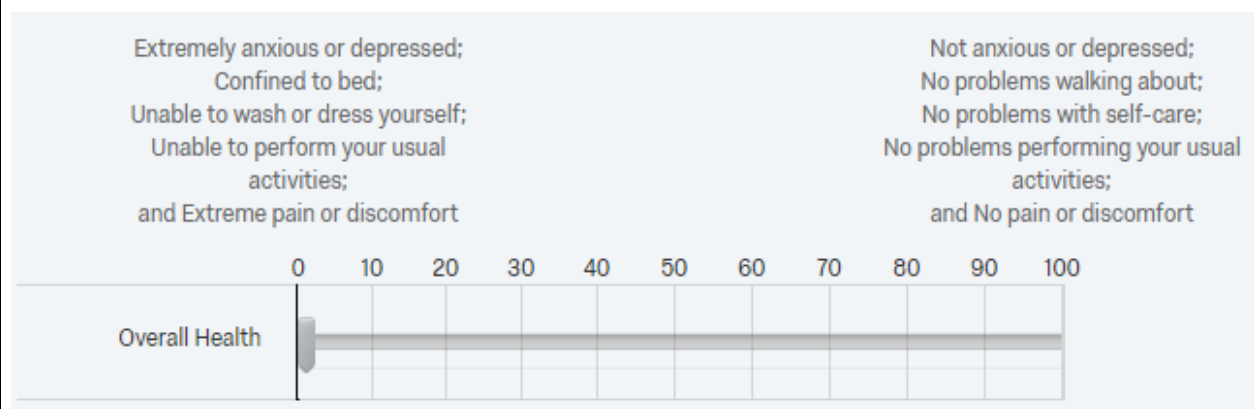Está muy ansioso/a o deprimido/a; Tiene que estar en la cama; Es incapaz de lavarse o vestirse; Es incapaz de realizar sus actividades cotidianas; y Tiene mucho dolor y malestar

Not anxious or depressed; No problems walking about; No problems with self-care; No problems performing your usual activities; and No pain or discomfort
No está ansioso/a o deprimido/a; No tiene problemas para caminar; No tiene problemas con el cuidado personal; No tiene problemas para realizar sus actividades cotidianas; y No tiene dolor ni malestar

[PROGRAMMING NOTE: THIS IS A HORIZONTAL SLIDING SCALE WITH 1 UNIT INCREMENTS]

show to all eligible teens, all eligible adults
 [SP]
DISPLAY – Q37
[CAWI] Under each heading, please click the ONE statement that best describes your health TODAY.
[CAWI] Bajo cada título, por favor haga clic en el enunciado que mejor describe su salud HOY.

[CATI] For each of the following phrases, please tell me the one statement that best describes your health today.
[CATI] Para cada una de las siguientes frases, por favor dígame el enunciado que describe mejor su salud hoy.

show to teens whose health is still affected, all adults
 [SP]
Q38.
Mobility [IF P_PARENT=1, INSERT: "<i>(walking about)</i>"]
Mobilidad [IF P_PARENT=1, INSERT: "<i>(desplazarse)</i>"]

    1.   I have <u>no</u> problems walking about
    2.   I have <u>some</u> problems walking about
    3.   I have <u>a lot</u> of problems walking about

    1.   <u>No</u> tengo problemas para caminar
    2.   Tengo <u>algunos</u> problemas para caminar
    3.   Tengo <u>muchos</u> problemas para caminar

[P_PARENT=1] CATI RESPONSE OPTIONS:
    1.   You have <u>no</u> problems walking about
    2.   You have <u>some</u> problems walking about
    3.   You have <u>a lot</u> of problems walking about

    1.   <u>No</u> tiene problemas para caminar
    2.   Tiene <u>algunos</u> problemas para caminar
    3.   Tiene <u>muchos</u> problemas para caminar

[P_PARENT=2] CAWI RESPONSE OPTIONS:
    1.   I have no problems walking about
    2.   I have some problems walking about
    3.   I am confined to bed

    1.   No tengo problemas para caminar
    2.   Tengo algunos problemas para caminar
    3.   Tengo que estar en la cama

[P_PARENT=2] CATI RESPONSE OPTIONS:
    1.   You have no problems walking about
    2.   You have some problems walking about
    3.   You are confined to bed

    1.   No tiene problemas para caminar
    2.   Tiene algunos problemas para caminar
    3.   Tiene que estar en la cama

---

show to all eligible teens, all eligible adults
 [SP]
 Q39.
[IF P_PARENT=1] Looking after myself
[IF P_PARENT=2] Self-care

[IF P_PARENT=1] Cuidado Personal
[IF P_PARENT=2] Cuidado Personal

[P_PARENT=1] CAWI RESPONSE OPTIONS:
1. I have <u>no</u> problems washing or dressing myself
2. I have <u>some</u> problems washing or dressing myself
3. I have <u>a lot</u> of problems washing or dressing myself
4. <u>No</u> tengo problemas para lavarme o vestirme
5. Tengo <u>algunos</u> problemas para lavarme o vestirme
6. Tengo <u>muchos</u> problemas para lavarme o vestirme

    CATI RESPONSE OPTIONS:
      1. You have <u>no</u> problems washing or dressing yourself
      2. You have <u>some</u> problems washing or dressing yourself
      3. You have <u>a lot</u> of problems washing or dressing yourself

      1. <u>No</u> tiene problemas para lavarse o vestirse
      2. Tiene <u>algunos</u> problemas para lavarse o vestirse
      3. Tiene <u>muchos</u> problemas para lavarse o vestirse

[P_PARENT=2] CAWI RESPONSE OPTIONS:
1. I have no problems with self-care
2. I have some problems washing or dressing myself
3. I am unable to wash or dress myself

1. No tengo problemas con el cuidado personal
2. Tengo algunos problemas para lavarme o vestirme
3. Soy incapaz de lavarme o vestirme

    CATI RESPONSE OPTIONS:
      1. You have no problems with self-care
      2. You have some problems washing or dressing yourself
      3. You are unable to wash or dress yourself

      1. No tiene problemas con el cuidado personal
      2. Tiene algunos problemas para lavarse o vestirse
      3. Es incapaz de lavarse o vestirse

show to all eligible teens, all eligible adults
[SHOW IF (P_PARENT=1 and Q17=4) or P_PARENT=2] [SP]
Q40.

[P_PARENT=1] Doing usual activities <i>(for example, going to school, hobbies, sports, playing, doing things with family or friends)</i>
[P_PARENT=2] Usual activities (e.g. work, study housework, family, or leisure activities)
[P_PARENT=1] Hacer actividades habituales <i>(por ejemplo, ir a la escuela, pasatiempos, deportes, jugar, hacer cosas con familiares y amigos)</i>
[P_PARENT=2] Actividades cotidianas (por. ej. trabajar, estudiar, hacer las tareas domésticas, actividades familiares, o actividades durante el tiempo libre)

[P_PARENT=1] CAWI RESPONSE OPTIONS:
1. I have <u>no</u> problems with performing my usual activities
2. I have <u>some</u> problems with performing my usual activities
3. I have <u>a lot</u> of problems doing my usual activities

1. <u>No</u> tengo problemas al hacer actividades habituales
2. Tengo <u>algunos</u> problemas al hacer mis actividades habituales
3. Tengo <u>muchos</u> problemas al hacer mis actividades habituales

CATI RESPONSE OPTIONS:
1. You have <u>no</u> problems with performing your usual activities
2. You have <u>some</u> problems with performing your usual activities
3. You have <u>a lot</u> of problems doing your usual activities

1. <u>No</u> tiene problemas al hacer actividades habituales
2. Tiene <u>algunos</u> problemas al hacer sus actividades habituales
3. Tiene <u>muchos</u> problemas al hacer sus actividades habituales

[P_PARENT=2] CAWI RESPONSE OPTIONS:
1. I have no problems with performing my usual activities
2. I have some problems with performing my usual activities
3. I am unable to perform my usual activities

1. No tengo problemas para realizar mis actividades cotidianas
2. Tengo algunos problemas para realizar mis actividades cotidianas
3. Soy incapaz de realizar mis actividades cotidianas

CATI RESPONSE OPTIONS:
1. You have no problems with performing your usual activities
2. You have some problems with performing your usual activities
3. You are unable to perform your usual activities

1. No tiene problemas para realizar sus actividades cotidianas
2. Tiene algunos problemas para realizar sus actividades cotidianas
3. Es incapaz de realizar sus actividades cotidianas

 [SP]
Q41.
[P_PARENT=1] Having pain or discomfort
[P_PARENT=2] Pain/Discomfort
[P_PARENT=1] Tener dolor o malestar
[P_PARENT=2] Dolor/Malestar

[P_PARENT=1] CAWI RESPONSE OPTIONS:
1.   I have <u>no</u> pain or discomfort
2.   I have <u>some</u> pain or discomfort
3.   I have <u>a lot</u> of pain or discomfort

1.   <u>No</u> tengo dolor ni me siento mal
2.   Tengo <u>un poco</u> de dolor o me siento mal
3.   Tengo <u>mucho</u> dolor o malestar

CATI RESPONSE OPTIONS:
1.   You have <u>no</u> pain or discomfort
2.   You have <u>some</u> pain or discomfort
3.   You have <u>a lot</u> of pain or discomfort

1.   <u>No</u> tiene dolor ni se siente mal
2.   Tiene <u>un poco</u> de dolor o se siente mal
3.   Tiene <u>mucho</u> dolor o malestar

[P_PARENT=2] CAWI RESPONSE OPTIONS:
1.   I have no pain or discomfort
2.   I have moderate pain or discomfort
3.   I have extreme pain or discomfort

1.   No tengo dolor ni malestar
2.   Tengo moderado dolor o malestar
3.   Tengo mucho dolor o malestar

CATI RESPONSE OPTIONS:

1. You have no pain or discomfort
2. You have moderate pain or discomfort
3. You have extreme pain or discomfort

1. No tiene dolor ni malestar
2. Tiene moderado dolor o malestar
3. Tiene mucho dolor o malestar

---

show to all eligible teens, all eligible adults
 [SP]
Q42.
[P_PARENT=1] Feeling worried, sad, or unhappy
[P_PARENT=2] Anxiety/Depression
[P_PARENT=1] Sentimiento de preocupación, tristeza, o infelicidad
[P_PARENT=2] Ansiedad/Depresión

[P_PARENT=1] CAWI RESPONSE OPTIONS:
1. I am <u>not</u> worried, sad, or unhappy
2. I am <u>a bit</u> worried, sad, or unhappy
3. I am <u>very</u> worried, sad, or unhappy

1. <u>No</u> estoy preocupado/a, triste o infeliz
2. Estoy <u>un poco</u> preocupado/a, triste o infeliz
3. Estoy <u>muy</u> preocupado/a, triste o infeliz

CATI RESPONSE OPTIONS:
1. You are <u>not</u> worried, sad, or unhappy
2. You are <u>a bit</u> worried, sad, or unhappy
3. You are <u>very</u> worried, sad, or unhappy

1. <u>No</u> está preocupado/a, triste o infeliz
2. Está <u>un poco</u> preocupado/a, triste o infeliz
3. Está <u>muy</u> preocupado/a, triste o infeliz

[P_PARENT=2] CAWI RESPONSE OPTIONS:

1. I am not anxious or depressed
2. I am moderately anxious or depressed
3. I am extremely anxious or depressed

1. No estoy ansioso/a o deprimido/a
2. Estoy moderadamente ansioso/a o deprimido/a
3. Estoy muy ansioso/a o deprimido/a

CATI RESPONSE OPTIONS:
1. You are not anxious or depressed
2. You are moderately anxious or depressed
3. You are extremely anxious or depressed

1. No está ansioso/a o deprimido/a
2. Está moderadamente ansioso/a o deprimido/a
3. Está muy ansioso/a o deprimido/a

[SHOW IF P_PARENT=2 and Q17=4]
DISPLAY – Q43
Now please imagine being able to trade off or give up years from the end of your life in order to be healed and relieved of all the health burdens you currently have.
Ahora por favor imagine que puede cambiar o renunciar a años al final de su vida para poder ser curado/a y aliviado/a de todas las cargas de salud que tiene ahora.

[SHOW IF P_PARENT=2 and Q17=4]

[SP]
Q44.
Think about your overall health, including how the suicide death affects your emotional, mental, and physical health <u>currently</u>. Imagine you will live until you are <u>[lifeexpect] years</u> old but you can live a shorter life that is at peace with the suicide death and totally free from all of your current emotional, mental, and physical health burdens.
Piense en su salud general, incluyendo cómo el suicidio afectó su salud emocional, mental y física <u>actual</u>. Imagine que usted vivirá hasta los <u>[lifeexpect] años</u> de edad pero usted puede vivir una vida más corta en paz con el suicidio y totalmente libre de todas sus actuales cargas emocionales, mentales y físicas de salud.

In this imaginary situation, would you trade off <u>[tradeoff1] years</u> from the end of your life so that <u>you</u> could be at peace and totally healed from <u>all of your current emotional, mental and, physical health burdens</u> even though this would not change the outcome of the suicide?
En dicha situación imaginaria, ¿cambiaría usted <u>[tradeoff1] años</u> del final de su vida para que <u>usted</u> pudiera estar en paz y totalmente sanado/a de <u>todas las cargas emocionales, mentales y físicas de salud actuales</u> aunque esto no cambie el resultado del suicidio?

CAWI RESPONSE OPTIONS:
1. Yes
2. No

1. Sí
2. No

CATI RESPONSE OPTIONS:
1. YES
2. NO

1. SÍ
2. NO

[SP]
Q45.
In this imaginary situation, would you trade off <u>[tradeoff2] years</u> from the end of your life so that you could be at peace and totally healed from <u>all of your current emotional, mental, and physical health burdens</u> even though this would not change the outcome of the suicide?
En dicha situación imaginaria, ¿cambiaría usted <u>[tradeoff2] años</u> del final de su vida para que usted pudiera estar en paz y totalmente sanado/a de <u>todas las cargas emocionales, mentales y físicas de salud actuales</u> aún esto no cambie el resultado del suicidio?

CAWI RESPONSE OPTIONS:
1. Yes
2. No

1. Sí
2. No

CATI RESPONSE OPTIONS:
1. YES
2. NO

1. SÍ
2. NO

Q46.
In this imaginary situation, would you trade off <u>[tradeoff3] years</u> from the end of your life so that you could be at peace and totally healed from <u>all of your current emotional, mental, and physical health burdens</u> even though this would not change the outcome of the suicide?
En dicha situación imaginaria, ¿cambiaría usted <u>[tradeoff3] años</u> del final de su vida para que usted pudiera estar en paz y totalmente sanado/a de <u>todas las cargas emocionales, mentales y físicas de salud actuales</u> aunque esto no cambie el resultado del suicidio?

CAWI RESPONSE OPTIONS:
1. Yes
2. No

1. Sí
2. No

CATI RESPONSE OPTIONS:
1. YES
2. NO

1. SÍ
2. NO

Q47.
[CAWI] In this imaginary situation, what is the <u>maximum number of years</u> you would be willing to trade off or give up from the end of your life so that you could be at peace and totally healed from all of your current emotional, mental, and physical health burdens even though this would not change the outcome of the suicide? If you are unwilling to trade-off any years, then put 0.
[CAWI] En esta situación imaginaria, ¿cuál es el <u>máximo número de años</u> que usted estaría dispuesto/a a cambiar del final de su vida para que usted pudiera estar en paz y totalmente sanado/a de todas las cargas emocionales, mentales y físicas de salud actuales aunque esto no cambie el resultado del suicidio? Si no está dispuesto/a a cambiar años, ponga 0.

[CATI] In this imaginary situation, what is the <u>maximum number of years</u> you would be willing to trade off or give up from the end of your life so that you could be at peace and totally healed from all of your current emotional, mental, and physical health burdens even though this would not change the outcome of the suicide? If you are unwilling to trade-off any years, then you can say that too.
[CATI] En esta situación imaginaria, ¿cuál es el <u>máximo número de años</u> que usted estaría dispuesto/a a cambiar del final de su vida para que usted pudiera estar en paz y totalmente sanado/a de todas las actuales cargas emocionales, mentales y físicas de salud aún esto no cambie el resultado del suicidio? Si no está dispuesto/a a cambiar años, entonces también puede decirlo.

[NUMBOX; ACCEPT NUMERIC RANGE 0 - (lifeexpect-age)]

[SP]
 Q48.
How confident are you in your response to the previous question?
¿Cuán seguro/a está usted de su respuesta a la pregunta previa?

RESPONSE OPTIONS:
1. Very confident
2. Moderately confident
3. A little confident
4. Not at all confident

1. Muy seguro/a
2. Moderadamente seguro/a
3. Un poco seguro/a
4. Nada seguro

[SP]
Q49.
What is the main reason why you are not willing to trade off any years?
¿Cuál es la principal razón por la que no está dispuesto/a a cambiar años?

CAWI RESPONSE OPTIONS:
1. I do not want my emotional, mental, and physical burdens to be taken away
2. I do not believe that it is possible for my emotional, mental, and physical burdens to be taken away
3. I am morally opposed to the idea of trading off years of my life
4. I am coping well enough with the emotional, mental, or physical burdens from the suicide that I would not trade off time from the end of my life
5. Other (please specify): [SMALL TEXTBOX]

1. No quiero que me quiten mis cargas emocionales, mentales y físicas
2. No creo que sea posible que me quiten mis cargas emocionales, mentales y físicas
3. Me opongo moralmente a la idea de cambiar años de mi vida
4. Estoy lidiando bastante bien con mis cargas emocionales, mentales y físicas del suicidio por lo que no cambiaría años del final de mi vida
5. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]

CATI RESPONSE OPTIONS:

1. You do not want your emotional, mental, and physical burdens to be taken away
2. You do not believe that it is possible for your emotional, mental, and physical burdens to be taken away
3. You are morally opposed to the idea of trading off years of your life
4. You are coping well enough with the emotional, mental, or physical burdens from the suicide that you would not trade off time from the end of your life
5. Other (please specify): [SMALL TEXTBOX]

1. Usted no quiere que me quiten mis cargas emocionales, mentales y físicas
2. Usted no cree que sea posible que le quiten sus cargas emocionales, mentales y físicas
3. Se opone moralmente a la idea de cambiar años de su vida
4. Usted está lidiando bastante bien con sus cargas emocionales, mentales y físicas del suicidio por lo que no cambiaría años del final de su vida
5. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]

[SHOW IF P_PARENT=2] [MP]
Q50.
Currently, what are the biggest barriers you face to talking with others about your feelings and experiences regarding the death?
Actualmente, ¿cuáles son las barreras más grandes que usted enfrente a la hora de hablar con otras personas sobre sus sentimientos y experiencias en relación a la muerte?

[CAWI] UNBOLD </B> <i> - *Please select all that apply.* </i>
[CATI] PLEASE SELECT ALL THAT APPLY.
[CAWI] UNBOLD </B> <i> - *Por favor seleccione todas las que apliquen.* </i>
[CATI] POR FAVOR SELECCIONE TODO LO QUE CORRESPONDA.

CAWI RESPONSE OPTIONS:

1. A sense of stigma or shame
2. Not wanting to burden others with my feelings and experiences
3. Believing that talking with others would not help me
4. Thinking that others do not want to talk with me about the suicide
5. Fear and uncertainty about how others might react
6. Wanting to grieve alone
7. Emotional pain talking about my feelings and experiences
8. Other (please specify): [SMALL TEXTBOX]
9. I do not have major barriers to talking with others about my feelings and experiences [SP]

1. Un sentido de estigma o vergüenza
2. No querer cargar a los demás con mis sentimientos y experiencias
3. Creer que hablar con los demás no va a ayudarme
4. Pensar que los demás no quieren hablar conmigo sobre el suicidio
5. Temor e incertidumbre sobre cómo los demás pudieran reaccionar
6. Querer hacer el duelo solo/a
7. Dolor emocional al hablar sobre mis sentimientos y experiencias
8. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]
9. No tengo grandes barreras al momento de hablar con otras personas sobre mis sentimientos y experiencias [SP]

CATI RESPONSE OPTIONS:

1. A sense of stigma or shame
2. Not wanting to burden others with your feelings and experiences
3. Believing that talking with others would not help you
4. Thinking that others do not want to talk with you about the suicide
5. Fear and uncertainty about how others might react
6. Wanting to grieve alone
7. Emotional pain talking about your feelings and experiences
8. Other (please specify): [SMALL TEXTBOX]
9. You do not have major barriers to talking with others about your feelings and experiences [SP]

1. Un sentido de estigma o vergüenza
2. No querer ser una carga para otros con sus sentimientos y experiencias
3. Creer que hablar con los demás no va a ayudarle a usted
4. Pensar que los demás no quieren hablar con usted sobre el suicidio
5. Temor e incertidumbre sobre cómo los demás pudieran reaccionar
6. Querer hacer el duelo solo/a
7. Dolor emocional al hablar sobre sus sentimientos y experiencias
8. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]
9. No tiene grandes barreras al momento de hablar con otras personas sobre sus sentimientos y experiencias [SP]

[SHOW IF P_PARENT=2] [MP]
Q51.
What have been the biggest barriers to seeking professional bereavement or grief support after the death?
¿Cuáles han sido las barreras más grandes a la hora de buscar ayuda profesional o apoyo para su dolor luego de la muerte?

[CAWI] UNBOLD </B> <i> - *Please select all that apply.* </i>
[CATI] PLEASE SELECT ALL THAT APPLY.
[CAWI] UNBOLD </B> <i> - *Por favor seleccione todas las que apliquen.* </i>
[CATI] POR FAVOR SELECCIONE TODO LO QUE CORRESPONDA.

CAWI RESPONSE OPTIONS:

1. Feeling like I do not want, need, or deserve professional help
2. Not knowing what support was available
3. Feeling like the mental healthcare system has failed to help me in times past
4. A sense of stigma or shame in talking about the suicide or getting help
5. It costs too much
6. Services are too far away or too hard to get to
7. My family does not think I need help
8. Other (please specify): [SMALL TEXTBOX]
9. I have not experienced major barriers to seeking professional help [SP]

1. Sentir que no quiero, necesito o merezco ayuda profesional
2. No saber que tipo de ayuda estaba disponible
3. Sentir que el sistema de salud mental ha fallado al ayudarme anteriormente
4. Una sensación de estigma o vergüenza al hablar sobre el suicidio o recibir ayuda
5. Cuesta demasiado
6. Los servicios están demasiado lejos o es muy difícil acceder a ellos
7. Mi familia no cree que yo necesite ayuda
8. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]
9. No he experimentado mayores barreras a la hora de buscar ayuda profesional [SP]

CATI RESPONSE OPTIONS:
1. Feeling like you do not want, need, or deserve professional help
2. Not knowing what support was available
3. Feeling like the mental healthcare system has failed to help you in times past
4. A sense of stigma or shame in talking about the suicide or getting help
5. It costs too much
6. Services are too far away or too hard to get to
7. Your family does not think you need help
8. Other (please specify): [SMALL TEXTBOX]
9. You have not experienced major barriers to seeking professional help [SP]

1. Sentir que usted no quiere, necesita, o merece ayuda profesional
2. No saber que tipo de ayuda estaba disponible
3. Sentir que el sistema de salud mental ha fallado al ayudarle a usted anteriormente
4. Una sensación de estigma o vergüenza al hablar sobre el suicidio o recibir ayuda
5. Cuesta demasiado
6. Los servicios están demasiado lejos o es muy difícil acceder a ellos
7. Su familia no cree que usted necesite ayuda
8. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]
9. No ha experimentado usted mayores barreras a la hora de buscar ayuda profesional [SP]

Q52.

Have you used online social networks or online support groups to share your feelings or get support regarding the suicide?

¿Ha utilizado usted redes sociales en línea o grupos de apoyo en línea para compartir sus sentimientos o recibir ayuda en relación al suicidio?

CAWI RESPONSE OPTIONS:
1. Yes
2. No

1. Sí
2. No

CATI RESPONSE OPTIONS:
1. YES
2. NO

1. SÍ
2. NO

Q53.

What online social networks or online support groups have you used to share your feelings or get support?

¿Qué redes sociales en línea o grupo de apoyo ha utilizado para compartir sus sentimientos o recibir ayuda?

[CAWI] UNBOLD </B> <i> - *Please select all that apply.* </i>
[CATI] PLEASE SELECT ALL THAT APPLY.
[CAWI] UNBOLD </B> <i> - *Por favor seleccione todas las que apliquen.* </i>
[CATI] POR FAVOR SELECCIONE TODO LO QUE CORRESPONDA.

RESPONSE OPTIONS:

1. A suicide-related online support group
2. Another grief-related online support group
3. Facebook
4. Twitter
5. Snapchat
6. Instagram
7. Other (please specify): [SMALL TEXTBOX]

1. Un grupo de apoyo en línea relacionado al suicidio
2. Otro grupo de apoyo en línea relacionado al duelo
3. Facebook
4. Twitter
5. Snapchat
6. Instagram
7. Otro (por favor, especifíquelo:) [SMALL TEXTBOX]

[SHOW ALL] [SP]
Q54.
Would you participate in an online social network or online support group specifically for those that know someone who [IF Q2=1, insert: attempted suicide,] died by suicide, or that care about suicide prevention?
¿Participaría usted en una red social o grupo de apoyo en línea específicamente para aquellas personas que han conocen a alguien que [IF Q2=1, insert: intentó suicidarse,] se suicidó, o que se preocupe por la prevención del suicidio?

CAWI RESPONSE OPTIONS:
1. Yes
2. No

1. Sí
2. No

CATI RESPONSE OPTIONS:
1. YES
2. NO

1. SÍ
2. NO

[SHOW IF Q54=1]
[MP]
Q55.

For what purposes would you use the online social network or support group?
¿Con qué fin utilizaría una red social en línea o grupo de apoyo?

[CAWI] UNBOLD </B> <i> - *Please select all that apply.* </i>
[CATI] PLEASE SELECT ALL THAT APPLY.
[CAWI] UNBOLD </B> <i> - *Por favor seleccione todas las que apliquen.* </i>
[CATI] POR FAVOR SELECCIONE TODO LO QUE CORRESPONDA.

1. Communicate with others about their and your experiences
2. Organize efforts to encourage suicide prevention
3. Communicate with people who are worried about someone dying by suicide
4. Personally track your mood
5. Learn about and share support resources or information
6. Learn about or organize local group meetings or activities
7. Other suggestions (please specify): [SMALL TEXTBOX]

1. Para comunicarse con otros sobre sus experiencias
2. Para organizar esfuerzos para alentar la prevención del suicidio
3. Para comunicarse con personas que están preocupadas por alguien que se suicidó
4. Personalmente registrar su estado de ánimo
5. Conocer y compartir recursos de ayuda e información
6. Conocer u organizar encuentros o actividades de grupos locales
7. Otras sugerencias (por favor especifique): [SMALL TEXTBOX]

[SHOW IF P_PARENT=2 and Q54=1]
[SP]
Q56.
How frequently would you use or visit such a platform?
¿Con qué frecuencia usaría usted o visitaría dicha plataforma?

RESPONSE OPTIONS:

1. Multiple times a day
2. About once a day
3. A few times each week
4. About once a week
5. A couple times each month
6. About once a month or less

1. Múltiples veces por día
2. Una vez al día
3. Varias veces por semana
4. Alrededor de una vez por semana
5. Un par de veces al mes
6. Una vez por mes o menos

Q57.

[CAWI] Finally, please tell us a little more about yourself.
[CATI] Finally, please tell me a little more about yourself.
[CAWI] Finalmente, cuéntenos un poco más sobre usted.
[CATI] Finalmente, cuénteme un poco más sobre usted.

Do you consider yourself to be:
Usted se considera:

RESPONSE OPTIONS:
1. Heterosexual/straight
2. Gay/lesbian/homosexual
3. Bisexual
77. Not sure
90. Decline to state

1. Heterosexual
2. Gay/lesbiana/homosexual
3. Bisexual
77. No estoy seguro
90. Se niega a contestar

Q58.
What is your gender?
¿Cuál es su género?

[CAWI] UNBOLD </B> <i> - *Please select all that apply.* </i>

[CATI] PLEASE SELECT ALL THAT APPLY.

[CAWI] UNBOLD </B> <i> - *Por favor seleccione todas las que apliquen.* </i>

[CATI] POR FAVOR SELECCIONE TODO LO QUE CORRESPONDA.

RESPONSE OPTIONS:

1. Male
2. Female
3. Transgender, Male-to-Female (MTF)
4. Transgender, Female-to-Male (FTM)
5. Transgender, do not identify as male or female
77. Not sure [SP]
90. Decline to state [SP]

1. Masculino
2. Femenino
3. Transexual, Masculino -a-Femenino (MTF)
4. Transexual, Femenino-a-Masculino) (FTM)
5. Transexual, no me identifico como masculino ni femenino
77. No estoy seguro [SP]
90. Se niega a contestar [SP]

[IF P_PARENT=1; SP]

[CUSTOM PROMPT

Information about any possible Hispanic ethnicity is very important. We greatly appreciate your response to this question.]

Información sobre cualquier posible etnia hispana es muy importante. Realmente apreciamos su respuesta a esta pregunta.

QS9A.

This is about Hispanic ethnicity. Are you of Spanish, Hispanic, or Latino descent?

Esto se trata de etnia hispana. ¿Es usted de ascendencia española, hispana o latina?

    No, I am not ...1
    Yes, Mexican, Mexican-American
     Chicano ...2
    Yes, Puerto Rican ...3
    Yes, Cuban, Cuban American ...4
    Yes, Central or South American ...5
    Yes, Other Spanish/Hispanic/Latino [specify] ...8 [SMALL TEXTBOX]
    No, no soy ...1
    Sí, Mexicano, Mexicano-Americano
    Chicano ...2

Sí, Puertorriqueño ...3
Sí, Cubano/a, Cubano-Americano ...4
Sí, de América Central y América del Sur ...5
Sí, Otro Español/Hispano/Latino [especifique] ...8 [SMALL TEXTBOX]

[IF P_PARENT=1; DISPLAY]
RACEINTRO.
[CAWI] Please tell us what you consider your racial background to be. These race categories may not fully describe you, but they do match those used by the U.S. government.

[CAWI] Por favor díganos cuál considera que es su origen racial. Estas categorías raciales quizá no le describan a usted completamente, pero coinciden con las utilizadas por el gobierno de los Estados Unidos.

[CATI] Please tell me what you consider your racial background to be. These race categories may not fully describe you, but they do match those used by the U.S. government.

[CATI] Por favor dígame a qué origen étnico usted considera pertenecer. Estas categorías raciales quizá no le describan a usted completamente, pero coinciden con las utilizadas por el gobierno de los Estados Unidos.

[IF P_PARENT=1] [MP]
[PROMPT UP TO 2 TIMES]
Information about your racial background is very important to us. We greatly appreciate your response and will keep it strictly confidential.
La información sobre su origen racial es muy importante para nosotros. Estamos muy agradecidos por su respuesta y la mantendremos estrictamente confidencial.

QS10.
[CAWI] Please check one or more categories below to indicate what race(s) you consider yourself to be.
[CAWI] Por favor marque una o más de las siguientes categorías para indicar a qué raza(s) usted considera que pertenece.

[CATI] Please tell me what race or races you consider yourself to be.
[CATI] Por favor dígame a qué raza o razas usted considera que pertenece.
[CATI] DO NOT READ RESPONSE LIST, WAIT FOR R'S ANSWER AND CODE APPROPRIATELY

1. White
2. Black or African American
3. American Indian or Alaska Native – [CAWI]*Type in name of enrolled or principal tribe* [TEXT BOX]
[CATI] TYPE IN NAME OF ENROLLED OR PRINCIPAL TRIBE [TEXT BOX]

[SPACE]
4. Asian Indian
5. Chinese
6. Filipino
7. Japanese
8. Korean
9. Vietnamese
10. Other Asian – [CAWI] *Type in race* [TEXT BOX]
[CATI] TYPE IN RACE [TEXT BOX]
[SPACE]
11. Native Hawaiian
12. Guamanian or Chamorro
13. Samoan
14. Other Pacific Islander – [CAWI] *Type in race* [TEXT BOX]
[CATI] TYPE IN RACE [TEXT BOX]
[SPACE]
15. Some other race – [CAWI] *Type in race* [TEXT BOX]
[CATI] TYPE IN RACE [TEXT BOX]

1. Blanco/a
2. Negro/a o Afroamericano/a
3. Indígena americano/a o Nativo/a de Alaska – [CAWI]*Escriba el nombre inscrito o de la tribu principal.* [TEXT BOX]
[CATI] TYPE IN NAME OF ENROLLED OR PRINCIPAL TRIBE [TEXT BOX]
[SPACE]
4. Indio Asiático
5. Chino
6. Filipino
7. Japonés
8. Coreano
9. Vietnamita
10. Otra asiática – [CAWI] *Escriba la raza* [TEXT BOX]
[CATI] TYPE IN NAME OF ENROLLED OR PRINCIPAL TRIBE [TEXT BOX]
[SPACE]
11. Nativo de Hawái
12. Guameña o Chamoarro
13. Samoano
14. Otra isla del Pacífico – [CAWI] *Escriba la raza* [TEXT BOX]
[CATI] TYPE IN NAME OF ENROLLED OR PRINCIPAL TRIBE [TEXT BOX]
[SPACE]
15. Alguna otra raza – [CAWI] *Tipo en raza* [TEXT BOX]
[CATI] TYPE IN NAME OF ENROLLED OR PRINCIPAL TRIBE [TEXT BOX]

DISPLAY – Q62
[IF P_PARENT=1] If you are sad or burdened by the suicide attempt or death of someone you know, you are not alone. There are many resources that you can access to help you. We encourage you to seek

help and support. One place to receive direction and support is the website yourlifeyourvoice.org. This is a special website for teens that are going through struggles in life. You can also learn about other resources from the American Foundation for Suicide Prevention website: afsp.org/find-support/ive-lost-someone.

[IF P_PARENT=1] Si usted está triste y abrumado por el intento de suicidio o muerte de una persona a la cual conocía, usted no está solo/a. Hay muchos recursos a los cuales usted puede acceder a ayuda. Le alentamos a usted a buscar apoyo y ayuda. Un lugar para recibir orientación y apoyo es el sitio web yourlifeyourvoice.org. Este es un sitio web especial para adolescentes que están atravesando una batalla en sus vidas. También puede conocer sobre otros recursos en el sitio web de la Fundación Estadounidense de Prevención del Suicidio: afsp.org/find-support/ive-lost-someone.

[IF P_PARENT=2] If you grieve and are burdened by the suicide of someone you know, you are not alone. There are many resources that you can access to help you in your bereavement. We encourage you to seek help and support. One place to receive direction and support is the American Foundation for Suicide Prevention: afsp.org/find-support/ive-lost-someone. Another group that offers an online support for those who have lost a loved one to suicide is the Alliance of Hope: allianceofhope.org.
[IF P_PARENT=2] Si usted está sufriendo y está abrumado/a por el suicidio de alguien a quien conoció, usted no está solo/a. Hay muchos recursos a los que usted puede acceder para ayudarle con su pérdida. Le alentamos a usted a buscar apoyo y ayuda. Un lugar para recibir dirección y apoyo es la Fundación Estadounidense de Prevención del Suicidio: afsp.org/find-support/ive-lost-someone. Otro grupo que ofrece ayuda en línea para aquellas personas que han perdido a un ser querido por suicidio es la Alianza de Esperanza (Alliance of Hope): allianceofhope.org.

If you are struggling with any thoughts of suicide yourself, please go to suicidepreventionlifeline.org or call the national suicide prevention lifeline at 1-800-273-8255 or 1-800-273-TALK.
Si usted está teniendo pensamientos suicidas, por favor ingrese a suicidepreventionlifeline.org o llame a la línea nacional de prevención del suicidio al 1-888-628-9454.

Thank you for your participation in this survey!
Gracias por su participación en esta encuesta!

RE-COMPUTE   QUAL=1 "COMPLETE"

SET CO_DATE, CO_TIME, CO_TIMER VALUES HERE

CREATE MODE_END
1=CATI
2=CAWI

SCRIPTING NOTES: PUT QFINAL1, QFINAL2, QFINAL3 in the same screen.
[SINGLE CHOICE]
[IF P_PARENT = 2]
QFINAL1.

Thank you for your time today. To help us improve the experience of AmeriSpeak members like yourself, please give us feedback on this survey.
Gracias por su tiempo hoy. Para ayudarnos a mejorar la experiencia de los miembros de AmeriSpeak como usted, por favor envíenos sus comentarios sobre esta encuesta.

[RED TEXT – CAWI ONLY] If you do not have any feedback for us today, please click "Continue" through to the end of the survey so we can make sure your opinions are counted and for you to receive your AmeriPoints reward.
[RED TEXT – CAWI ONLY] Si usted no tiene ningún comentario para nosotros hoy, por favor haga clic en "Continuar" hasta el final de la encuesta para que podamos hacer que sus opiniones sean contadas y para que usted pueda recibir su recompensa de AmeriPoints.

Please rate this survey overall from 1 to 7 where 1 is Poor and 7 is Excellent.
Por favor califique esta encuesta en términos generales del 1 al 7, siendo 1 Pobre y 7 Excelente.

Poor						Excellent
1	2	3	4	5	6	7

Pobre						Excelente
1	2	3	4	5	6	7

[SINGLE CHOICE – CAWI ONLY]
QFINAL2.
Did you experience any technical issues in completing this survey?
Yes – please tell us more in the next question
No
¿Experimentó algún inconveniente técnico al completar esta encuesta?
Sí - por favor, cuéntenos más en la próxima pregunta
No

[TEXT BOX] [CATI version needs "no" option]
QFINAL3.
Do you have any general comments or feedback on this survey you would like to share? If you would like a response from us, please email support@AmeriSpeak.org or call (888) 326-9424.
¿Tiene algún comentario general o comentarios sobre esta encuesta que le gustaría compartir con nosotros? Si desea recibir una respuesta de nosotros, por favor envíe un correo electrónico a ayuda@AmeriSpeak.org o llámenos al (888) 326-9424.

[IF P_PARENT = 2]
[DISPLAY]
END.
[CATI version]
Those are all the questions we have. You have earned a reward of [INCENTWCOMMA] AmeriPoints for completing the survey. If you have any questions at all for us, you can email us at support@AmeriSpeak.org or call us toll-free at **888-326-942**4. Let me repeat that again: email us at

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support@AmeriSpeak.org or call us at **888-326-9424**. Thank you for participating in our new AmeriSpeak survey!

Esas fueron todas las preguntas. Usted ha ganado una recompensa de [INCENTWCOMMA] Ameripoints por completar esta encuesta. Si tiene alguna pregunta para nosotros, puede mandarnos un correo electrónico a ayuda@AmeriSpeak.org o llámenos gratis al **888-326-9424**. Permítame repetirlo nuevamente: envíenos un correo electrónico a ayuda@AmeriSpeak.org o llámenos al **888-326-9424**. ¡Gracias por participar en nuestra nueva encuesta AmeriSpeak!

[CAWI version]

Those are all the questions we have. You have earned a reward of [INCENTWCOMMA] AmeriPoints for completing the survey. If you have any questions at all for us, you can email us at support@AmeriSpeak.org or call us toll-free at **888-326-9424**. Thank you for participating in our new AmeriSpeak survey!

Esas fueron todas las preguntas. Usted ha ganado una recompensa de [INCENTWCOMMA] Ameripoints por completar esta encuesta. Si tiene alguna pregunta para nosotros, puede mandarnos un correo electrónico a ayuda@AmeriSpeak.org o llámenos gratis al **888-326-9424**. ¡Gracias por participar en nuestra nueva encuesta AmeriSpeak!

You can close your browser window now if you wish or click Continue below to be redirected to the AmeriSpeak member website.

Ya puede cerrar la ventana de su explorador si lo desea o puede hacer clic en Continuar para ser redireccionado al sitio web de usuario de AmeriSpeak.

Below is the field report that was provided by NORC:

LONG-TERM BURDEN OF SUICIDE

UNIVERSITY OF MICHIGAN

AMERISPEAK FIELD REPORT

March 6, 2018

Client Contact: John Richardson

NORC Account Manager: Stefan Subias | Subias-Stefan@norc.org

NORC Project Manager: Stephanie Jwo | Jwo-Stephanie@norc.org

Study Introduction

NORC conducted the Long-term Burden of Suicide Study on behalf of John Richardson at University of Michigan using NORC's AmeriSpeak® Panel for the sample source. The main focus of the research was to target and survey teens age 15-17 and adults age 18+ on their experience with suicide and the effect on one's emotional and mental health. In addition, NORC estimated weighted prevalence rates for the teens and young adults. Among teens, 43.6% of teens reported knowing a person who died by suicide, and another 17.4% reported knowing a person who attempted suicide. Among adults, 58.1% reported knowing a person who died by suicide.

This study was offered in English and Spanish via phone and web.

This AmeriSpeak Field Report supplements the information provided in the *NORC Card*, which provides an in-depth profile of sample quality metrics for the adult sample for this study, the data collection field period, interview sample size, response rate statistics, the design effect, and sampling margins of error, among other statistics. Please refer to the NORC Card for information useful for compliance with the AAPOR Transparency Initiative, in addition to information provided in this AmeriSpeak Field Report.

For more detailed information on the AmeriSpeak panel recruitment and management methodology, please see the Technical Overview at the end of this AmeriSpeak Field Report**.**

Study-specific Details

Sampling

A general population sample of U.S. adults age 18 and older was selected from NORC's AmeriSpeak Panel for this study to reach 425 interviews. A second sample of adults with a child age 15-17 living in the same household was selected to reach 150 teen interviews.

Adult respondents were screened to identify eligible adults who knew a person who died by suicide.

The second sample of adults were screened to identify parents of children age 15-17, then pass the survey to their teen. Teen respondents who know a person who attempted suicide or a person who died by suicide were eligible for the study.

The sample for a specific study is selected from the AmeriSpeak Panel using sampling strata based on age, race/Hispanic ethnicity, education, and gender (48 sampling strata in total). The size of the selected sample per sampling stratum is determined by the population distribution for each stratum. In addition, sample selection takes into account expected differential survey completion rates by demographic groups so that the set of panel members with a completed interview for a study is a representative sample of the target population. If panel household has one more than one active adult panel member, only one adult in the household is eligible for selection (random within-household sampling). Panelists selected for an AmeriSpeak study earlier in the business week are not eligible for sample selection until the following business week.

For technical information about the AmeriSpeak Panel, including recruitment process and panel management policies, please see the Technical Overview.

Field

A sub-sample AmeriSpeak web-mode panelists were invited to the survey on January 9 in a soft-launch. The initial data from the soft-launch was reviewed and the remainder of sampled AmeriSpeak panelists were invited to the survey on January 12.

In total NORC collected 846 interviews, 180 teens and 666 adults.

Please see NORC Card for field period, sample sizes, and the AAPOR response rate documentation of the adult respondent.

Survey Completion Rates

The screening and main interview stages of data collection were conducted during a single survey session for the respondents. There was a screening stage to identify qualified and eligible panelists. These are the eligible respondents qualified to participate in the second stage, which is the main study interview.

Teen respondents were brought to the survey interview by adult AmeriSpeak parent. The parent respondents reconfirmed their parent status and were asked to provide consent for their teen to participate. All parents with an identified teen age 15-17 were asked if their teen knew someone who died or attempted suicide.

Among parents, 41% reported that their teen knew someone who died or attempted suicide. Parents who did not provide consent were given more information about the types of questions their teen would answer in the survey, however no parents changed their answer to provide consent for their teen to participate.

Teen respondents, after their parent provided consent, who answered the screener questions about knowing a person who died by suicide or knowing a person who attempted suicide, are considered a screener complete.

Adult respondents who answered the screener question about knowing a person who died by suicide, regardless of eligibility, are considered a screener complete.

Respondents who were determined to be eligible for the study, based on the screener, then completed the survey are considered a survey complete. The summary statistics on sample performance are shown below.

Sample Performance Summary

Table C-1. Sample Response and Completion Rates

	Sampled/ Invited Panelists	No. Screening Interviews Completed	Screener Completion Rate	No. Panelists Eligible for Interview	Incidence/ Eligibility Rate	No. Survey Interviews Completed	Interview Completion Rate
Adults	5,270	1,294	24.6%	785	60.6%	666	84.8%
Teens	2,858	336	11.8%	198	58.9%	180	90.9%

Please see NORC Card for the AAPOR response rate documentation of the adult respondents.

Gaining Cooperation of AmeriSpeak Panelists for the Study

To encourage study cooperation, NORC sent email reminders to sampled web-mode panelists on the following dates:

January 9 – Soft-launch

January 12 – reminder to soft-launch sample, invite for remainder of sample

January 15 – reminder for all

To administer the phone-survey, NORC dialed the sampled phone-mode panelists on January 23 to encourage participation if they had not already participated via the web.

Adult respondents were offered the cash equivalent of $3 for completing the survey. Teen respondents were offered a $5 Amazon gift card for completing the survey.

Data Processing

NORC prepared a fully labeled data file of adult and teen respondent survey data and demographic data.

NORC prepared a second fully labeled data file of all screened adults demographic data and screener question data.

Statistical Weighting

Statistical weights for the study eligible respondents were calculated using *panel base sampling weights* to start.

Panel base sampling weights for all sampled housing units are computed as the inverse of probability of selection from the NORC National Frame (the sampling frame that is used to sample housing units for AmeriSpeak) or address-based sample. The sample design and recruitment protocol for the AmeriSpeak Panel involves subsampling of initial non-respondent housing units. These subsampled non-respondent housing units are selected for an in-person follow-up. The subsample of housing units that are selected for the nonresponse follow-up (NRFU) have their panel base sampling weights inflated by the inverse of the subsampling rate.

The base sampling weights are further adjusted to account for unknown eligibility and nonresponse among eligible housing units. The household-level nonresponse adjusted weights are then post-stratified to external counts for number of households obtained from the Current Population Survey. Then, these household-level post-stratified weights are assigned to each eligible adult in every recruited household. Furthermore, a person-level nonresponse adjustment accounts for nonresponding adults within a recruited household.

Finally, panel weights are raked to external population totals associated with age, sex, education, race/Hispanic ethnicity, housing tenure, telephone status, and Census Division. The

external population totals are obtained from the Current Population Survey. The weights adjusted to the external population totals are the *final panel weights*.

Study-specific base sampling weights are derived using a combination of the final panel weight and the probability of selection associated with the sampled panel member. Since not all sampled panel members respond to the screener interview, an adjustment is needed to account for and adjust for screener non-respondents. This adjustment decreases potential nonresponse bias associated with sampled panel members who did not complete the screener interview for the study.

Furthermore, among eligible sampled panel members (as identified via the survey screener questions), not all complete the survey interview for the study. Thus, the *screener nonresponse adjusted weights for the study* are adjusted via a raking ratio method to age 15 and older general population totals associated with the following socio-demographic characteristics: age, sex, education (for adults), race/Hispanic ethnicity, and Census Division. The weights adjusted to the external population totals are the *final study weights*.

At the final stage of weighting, any extreme weights were trimmed based on a criterion of minimizing the mean squared error associated with key survey estimates, and then, weights re-raked to the same population totals.

Raking and re-raking is done during the weighting process such that the weighted demographic distribution of the survey completes resemble the demographic distribution in the target population. The assumption is that the key survey items are related to the demographics. Therefore, by aligning the survey respondent demographics with the target population, the key survey items should also be in closer alignment with the target population.

Deliverables

The following files were created as part of the study deliverables:

- Survey interview data file in SPSS formats

- Codebook in Excel format

- Final programming questionnaire in Word document

- Field report documenting study procedures

- NORC Card

Technical Overview of the AmeriSpeak® Panel NORC's Probability-Based Research Panel

Updated August 28, 2017

Prepared by J. Michael Dennis, Ph.D.

Detailed methodological information about AmeriSpeak is located on the "Research"

page of AmeriSpeak.norc.org.

Overview

Funded and operated by NORC at the University of Chicago, AmeriSpeak® is a

probability-based panel designed to be representative of the US household population. Randomly

selected US households are sampled with a known, non-zero probability of selection from the

NORC National Frame, and then contacted by US mail, telephone interviewers, overnight

express mailers, and field interviewers (face to face). AmeriSpeak panelists participate in NORC

studies or studies conducted by NORC on behalf of NORC's clients.

In 2016, the AmeriSpeak Panel expanded to 20,000 households, with a large oversample

of young African- American, Hispanic, and Asian adults (age 18 to 30). AmeriSpeak will expand

to 23,000 households in 2017 by creating new panels specific to Latino and teen research.

Sample Frame

In order to provide a nationally representative sample, AmeriSpeak leverages the NORC

National Sample Frame, constructed by NORC to cover over 97 percent of U.S. households. The

2010 National Frame used a two-stage probability sample design to select a representative

sample of households in the United States. The first stage—the sampling unit—is a National

Frame Area (NFA), which is either an entire metropolitan area (made up of one or more

counties) or a county (some counties were combined so that each NFA contains a population of at least 10,000). The largest NFAs with a population of at least 1,543,728 (0.5 percent of the 2010 Census U.S. population) were selected with certainty; these areas have a high-population density, and are dominated by tracts with street-style addresses. These areas contain 56 percent of the population within 8 percent of the geographic area of the United States. The remaining areas were stratified into areas where street-style addresses predominate, and the remaining areas, which are less likely to have street -style addresses. The latter stratum ("rural" areas) comprises 81 percent of the geographic area, but only 14 percent of the population.

Within the selected NFAs, the second stage sampling unit is a segment, defined either in terms of Census tracts or block groups, containing at least 300 housing units according to the 2010 Census. A stratified probability sample of 1,514 segments was selected with probability proportional to size. For most of the 1,514 segments, the USPS DSF provided over 90 percent coverage of the segment in terms of city-style addresses that are geo-codeable. For the 123 segments where the DSF provided insufficient coverage, we enhanced the DSF address list with in-person listing. The National Sample Frame contains almost 3 million households, including over 80,000 rural households added through the in-person listing.

The National Frame involves addresses in almost every state. For the remaining states, AmeriSpeak added some address-based sampling (ABS) addresses in 2016 and 2017 from the USPS DSF to assure AmeriSpeak sample representation for all US States. In 2017, a targeted address-based sample was added to AmeriSpeak recruitment in order to develop a new Latino Panel with adequate representation of Spanish-dominant Hispanics. Census tracts with high incidence (at least 30%) of Spanish-dominant Hispanics were targeted for this recruitment. Furthermore, within these Census tracts, households that were flagged as Hispanic based on

consumer vendor data were oversampled. This Latino Panel has 5,500 panelists with around 23% of those panelists being Spanish-dominant. As of July 2017, 13% of AmeriSpeak Panel (including the Latino Panel) recruited adults were sourced from the ABS (87% from the National Frame). Proper weights allow the full use of the combined sample.

Sample Selection for Panel Recruitment

The 2014-2017 AmeriSpeak Panel sample consists of nationally representative housing units drawn from the 2010 NORC National Sample Frame and 14% from address-based sampling. The 2010 NORC National Sample Frame is stratified based on segment (Census tract or Census block group) characteristics such as age and race/Hispanic ethnicity composition of the segment, and then, a stratified simple random sample of housing units is selected. Specifically, based on Census tract-level data, segments were classified as having a higher concentration of 18-24 year old adults or not, and a higher concentration of Hispanics, non-Hispanic African Americans, and other. Based on these strata definitions, 6 strata (2 based on age times 3 based on race/ethnicity) were used to oversample housing units in segments higher in young adults and/or Hispanics and non-Hispanic African-Americans. This is referred to as the initial sample or first stage of panel recruitment.

In the second stage of panel recruitment, initially sampled but nonresponding housing units are subsampled for a nonresponse follow-up (NRFU). At this stage, consumer vendor data are matched to housing units, and housing units that are flagged (based on consumer vendor data) as having a young adult or minority (Hispanic and non-Hispanic African American) are oversampled for the nonresponse follow-up. Overall, approximately one in five initially nonresponding housing units are subsampled for NRFU. However, as mentioned previously, selection of housing units for NRFU is a stratified simple random sample based on consumer

vendor data. Due to NRFU, these initially nonresponding housing units have a much higher selection probability compared to the housing units that were recruited during the first stage of panel recruitment.

Note that a small fraction of initially nonresponding housing units are not eligible for NRFU due to these housing units being classified as "hard refusals" or having an appointment for a call back from NORC.

In summary, there are two reasons why the sampling design for AmeriSpeak Panel recruitment deviates from EPSEM sampling: (a) oversampling of housing units in segments with a higher concentration of young adults and minorities results in the sample selection probabilities being higher for housing units in these segments; and (b) the nonresponse follow-up effort results in initially nonresponding housing units having a much higher selection probability. Furthermore, oversampling associated with NRFU results in higher selection probabilities for initially nonresponding housing units that are flagged (based on consumer vendor data) as having a young adult or minority.

AmeriSpeak Panel Recruitment Procedures

Recruitment is a two-stage process: initial recruitment using less expensive methods and then non-response follow-up using personal interviewers. For the initial recruitment, sample units are invited to join AmeriSpeak online by visiting the panel website AmeriSpeak.org or by telephone (in-bound/outbound supported). English and Spanish language are supported for both online and telephone recruitment. Study invitations are communicated via an over-sized pre-notification postcard, a USPS recruitment package in a 9"x12" envelope (containing a cover letter, a summary of the privacy policy, FAQs, and a study brochure), two follow-up post cards, and also follow-up by NORC's telephone research center for matched sample units.

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The second-stage non-response follow-up targets a stratified random sub-sample of the non-responders from the initial recruitment. Stratification is based on consumer vendor data and stratification variables from the initial recruitment stage in order to increase sample representation of young adults, non-Hispanic African Americans, and Hispanics. Units sampled for the non-response follow-up are sent by Federal Express a new recruitment package with an enhanced incentive offer. NORC field interviewers then make personal, face-to- face visits to the respondents' homes to encourage participation. NORC field interviewers administer the recruitment survey in-person using CAPI or else encourage the respondents to register at AmeriSpeak.org or call the toll-free AmeriSpeak telephone number to register.

Recruiting Non-Internet and "Net Averse" Households.

Under certain conditions, AmeriSpeak gives respondents a choice regarding their preferred mode for future participation in AmeriSpeak surveys. For the 2014-2017 recruitment, 82% of panelists were enrolled in AmeriSpeak to receive online surveys, while 18% of panelists agreed to participate in AmeriSpeak telephone mode surveys. For the 2016 and 2017 recruitment, respondents provided an option of online or telephone modes include: persons without internet access, persons whose only internet access is via a smartphone, and persons with internet access but unwilling to share an email address. A recruited household can consist of both web-mode and phone-mode panelists residing in the same household.

Impact of Non-Response Follow-up

The non-response follow-up improves the representativeness of the AmeriSpeak sample with respect to certain demographic segments, including but not limited to rural and/or lower income households, cell- phone only households, persons age 18 to 34, African Americans,

Hispanics, and persons without a high school degree on have only a high school degree (no college). Compared to panelists recruited in the initial stage, panelists recruited via the non-response follow-up campaign are more politically conservative, are less knowledgeable about science, report less interest in current events and topics in the news (such as climate change), and are less likely to read a print newspaper.

AmeriSpeak Panel Recruitment Response Rate and Other Sample Metrics

Between October 2014 and July 2017, 25,657 households were recruited to the AmeriSpeak Panel. The AAPOR RR3 (response rate) for the panel recruitment during this time frame is 33.5% (weighted to take into account selection probabilities).[1] The estimated cumulative AAPOR RR3 for client surveys is 10% to 20% (varying according to study parameters and taking into account all sources of non-response including panel recruitment, panel household attrition, and survey participation).[2] NORC documented the AAPOR response rate calculation methodology for 2014-2015 recruitment.[3]

Key statistics with respect to the 2014-2017 recruited households are as follows: 52% recruited via the non- response follow-up recruitment using overnight Federal Express mailers and face-to-face methodology (with NORC field staff visiting households); 19% indicated a preference for the telephone mode of data collection for participating in AmeriSpeak studies;

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[1] The response rate calculation incorporates the selection probabilities of the samples for the initial recruitment and non-response follow-up stages, as calculated by the US Bureau of the Census for the American Community Survey.

[2] A properly calculated AAPOR response rate for panel-based research takes into account all sources of non-response at each stage of the panel recruitment, management, and survey administration process. A common misapplication of the term "response rate" in online panel surveys is representing the survey-specific cooperation rate as the "survey response rate."

[3] See "Response Rate Calculation Methodology for Recruitment of a Two-Phase Probability-Based Panel: The Case of AmeriSpeak" authored by Robert Montgomery, J. Michael Dennis, Nada Ganesh. The paper is available at amerispeak.norc.org on the "research" page.

23% of the recruited households are non-Internet; 79% are cell- phone only or cell-phone mostly; 17% are non-Hispanic African-American and 24% Hispanic; and 36% have household income below $30,000 (compared to CPS benchmark of 27%).

Mixed-Mode Data Collection

Panelists may participate in 2 to 3 AmeriSpeak Panel studies per month via online (computer, tablet, or smartphones) or by CATI phone. CATI phone mode respondents represent a population currently under- represented in web panels that exclude non-internet households or "net averse" persons. NORC's telephone interviewers administer the phone mode of survey questionnaires using a data collection system supporting both the CATI phone and web modes of data collection, providing an integrated sample management and data collection platform. For panelists using smartphones for web-mode AmeriSpeak surveys, the NORC survey system renders an optimized presentation of the survey questions for these mobile users. For general population client studies, approximately 20% of the completed interviews are completed by the telephone mode.

Panel Management Policies

NORC maintains strict rules to limit respondent burden and reduce the risk of panel fatigue. On average, AmeriSpeak panel members typically participate in AmeriSpeak web-based or phone-based studies two to three times a month.

Because the risk of panel attrition increases with the fielding of poorly constructed survey questionnaires, the AmeriSpeak team works with NORC clients to create surveys that provide an appropriate user experience for AmeriSpeak panelists. AmeriSpeak will not field surveys that in

our professional opinion will result in a poor user experience for our panelists and in panel attrition.

About NORC at the University of Chicago

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APPENDIX D: Characteristics of Suicide Decedents Known to Adult Survey Respondents

The characteristics of the suicide decedents were only identified among the adult survey respondents. The results are provided below.

Table D-1. Characteristics of the Suicide Decedent and Relationship Between the Respondent and the Decedent

Characteristics	n	Weighted Estimate
Decedent's sexual orientation and gender identity		
Heterosexual male	376	55%
Heterosexual female	139	22%
Homosexual, bisexual, or transgender	53	6%
Not sure or declined	98	18%
Decedent's age		
<18	88	13%
18-24	171	28%
25-44	253	36%
45-64	122	18%
65+	27	4%
Not sure or missing	5	1%
Decedent's mental illness or drug use problems that were known to the respondent		
Depression	353	54%
Anxiety	135	21%
PTSD	48	7%
Bipolar disorder	53	8%
Schizophrenia	17	4%
Alcohol use problems	181	27%
Opioid use problems	66	13%
Other drug use problems	126	21%
None that were known	184	27%
Relationship to the respondent		
Nuclear family	38	7%
Extended family	135	22%
Friend	322	48%
Peer, colleague, co-worker, or client	96	13%
Neighbor	21	2%
Celebrity	6	1%
Student or patient	10	1%
Other	38	6%
Level of connectedness the year before the suicide (1 to 7)		
1 - Low connectedness	187	28%

Characteristics	n	Weighted Estimate
2	133	19%
3	71	9%
4	88	11%
5	79	13%
6	62	12%
7 - High connectedness	44	9%
Missing response	2	0%
Stressfulness of relationship the year before the suicide		
Extremely stressful	10	2%
Really stressful	19	2%
Moderately Stressful	40	7%
A little stressful	101	17%
Not at all stressful	495	72%
Missing response	1	0%

Notes: Estimates were weighted to adjust for non-response and be nationally representative.

APPENDIX E: Barriers to Seeking Support and Desire for Online Support Tools

Table E-1. Preferences for Online Social Network or Support Group, Among Adolescents

Preferences	n	Weighted Estimate
Would you participate in an online social network or support group for those that know someone who attempted suicide, died by suicide, or that care about suicide prevention?		
Yes	66	38%
No	112	61%
Missing	2	1%
Among those that would participate in an online social network or support group (n=66)		
For what purposes would you use the online social network or support group?		
Communicate with others about their and your experiences	39	58%
Organize efforts to encourage suicide prevention	33	43%
Communicate with people who are worried about someone dying by suicide	39	51%
Personally track your mood	10	22%
Learn about and share support resources or information	25	45%
Learn about or organize local group meetings or activities	12	16%

Note: Estimates were weighted to adjust for non-response and be nationally representative.

Table E-2. The Biggest Barriers Faced in Talking with Others About Feelings and Experiences Regarding the Death

Barriers	Overall (n=666)		"Definitely" or "Probably" a Survivor of Suicide Loss (n= 241)		Not "Definitely" or "Probably" a Survivor of Suicide Loss (n= 422)		P-Value by Survivor Status
	n	Weighted Estimate	n	Weighted Estimate	n	Weighted Estimate	
A sense of stigma or shame	68	11%	25	16%	43	8%	0.003
Not wanting to burden others with your feelings and experiences	178	26%	82	34%	96	22%	0.001
Believing that talking with others would not help you	78	13%	31	16%	47	12%	0.118
Thinking that others do not want to talk with you about the suicide	90	15%	44	20%	46	13%	0.016
Fear and uncertainty about how others might react	90	14%	37	18%	52	11%	0.006
Wanting to grieve alone	87	11%	42	13%	43	10%	0.229
Emotional pain talking about you feelings and experiences	83	14%	48	25%	34	7%	<0.001
Other	22	3%	10	4%	12	2%	0.260
You do not have major barriers to talking with others about my feelings and experiences	354	55%	100	42%	254	62%	<0.001

Notes: Estimates were weighted to adjust for non-response and be nationally representative. P-values were calculated using a weighted Chi-square test.

Table E-3. The Biggest Barriers to Seeking Professional Bereavement or Grief Support After the Death

Barriers	Overall (n=666)		"Definitely" or "Probably" a Survivor of Suicide Loss (n= 241)		Not "Definitely" or "Probably" a Survivor of Suicide Loss (n= 422)		P-Value by Survivor Status
	n	Weighted Estimate	n	Weighted Estimate	n	Weighted Estimate	
Feeling like you do not want, need, or deserve professional help	113	18%	48	20%	65	17%	0.242
Not knowing what support was available	55	10%	26	16%	28	6%	<0.001
Feeling like the mental healthcare system has failed to help you in times past	65	9%	31	14%	34	6%	0.000
A sense of stigma or shame in talking about the suicide or getting help	33	8%	21	14%	12	4%	<0.001
It costs too much	92	15%	44	20%	47	12%	0.004
Services are too far away or too hard to get to	31	6%	14	8%	17	5%	0.104
Your family does not think you need help	19	5%	10	9%	9	2%	<0.001
Other	15	3%	5	2%	10	3%	0.244
You have not experienced major barriers to seeking professional help	402	60%	122	53%	280	65%	0.003

Notes: Estimates were weighted to adjust for non-response and be nationally representative. P-values were calculated using a weighted Chi-square test.

Table E-4. Use of Online Social Networks or Online Support Groups for Suicide Bereavement

Utilization Questions	n	Weighted Estimate
Have you used online social networks or online support groups to share your feelings or get support regarding the suicide?		
Yes	73	11%
No	588	88%
Missing response	5	1%
What online social networks or online support groups have you used to share feelings or get support?		
A suicide-related online support group	25	6%
Another grief-related online support group	15	2%
Facebook	42	7%
Twitter	4	0%
Snapchat	2	2%
Instagram	13	3%
Other	4	1%

Notes: Estimates were weighted to adjust for non-response and be nationally representative.

Table E-5. Preferences Regarding an Online Social Network or Support Group for Suicide Bereavement and Suicide Prevention

Preferences	n	Weighted Estimate
Would you participate in an online social network or support group for those that know someone who attempted suicide, died by suicide, or that care about suicide prevention?		
Yes	179	27%
No	484	72%
Missing response	3	0%
Among those that would participate in an online social network or support group (n=179)		
For what purposes would you use the online social network or support group?		
Communicate with others about their and your experiences	116	66%
Organize efforts to encourage suicide prevention	81	48%
Communicate with people who are worried about someone dying by suicide	87	51%
Personally track your mood	43	28%
Learn about and share support resources or information	84	51%
Learn about or organize local group meetings or activities	42	34%
Other	3	4%
How frequently would you use or visit such a platform?		
Multiple times a day	14	10%
About once a day	23	13%
A few time each week	42	21%
About once a week	33	16%
A couple times each month	26	15%
About once a month or less	39	22%
Missing response	2	3%

Notes: Estimates were weighted to adjust for non-response and be nationally representative.

Table E-6. Characteristics of Those Who Would Participate Compared to Those Who Would Not Participate in an Online Social Network or Support Group for Suicide Bereavement and Suicide Prevention

Characteristics	Would Participate (n=179)		Would not Participate (n=484)		P-Value
	n	Weighted Estimate	n	Weighted Estimate	
Sexual orientation and gender identity					
Heterosexual male	64	42%	204	43%	0.208
Heterosexual female	88	46%	230	46%	
Homosexual, bisexual, transgender, not sure	25	12%	40	8%	
Declined	2	0%	10	2%	
Age					
18-29	44	28%	83	20%	0.030
30-44	65	27%	142	22%	
45-59	41	23%	135	28%	
60+	29	22%	124	30%	
Race and ethnicity					
White, non-Hispanic	108	58%	356	70%	<0.001
Black, non-Hispanic	26	15%	27	5%	
Other, non-Hispanic	18	8%	44	7%	
Hispanic	27	18%	57	17%	
Region					
Northeast	25	19%	78	18%	0.804
Midwest	54	25%	150	24%	
South	58	31%	140	35%	
West	42	25%	116	23%	
Marital status					
Married	52	31%	221	49%	<0.001
Widowed	4	1%	18	4%	
Divorced or separated	36	22%	85	18%	
Never married	64	36%	114	19%	
Living with partner	23	10%	46	10%	
Education					
No high school diploma	10	10%	16	10%	0.246
High school graduate or equivalent	34	33%	91	28%	
Some college	77	24%	218	32%	
BA or above	58	33%	159	30%	
Household income					
Less than $50,000	100	54%	217	46%	0.031
$50,000 to $99,999	51	31%	161	30%	
$100,000 or more	28	15%	106	24%	
Household size	179	2.7	484	2.6	0.785
Mental illness or drug use problems prior to the suicide					
Depression	57	32%	110	27%	0.178
Anxiety	48	24%	79	17%	0.047
PTSD	8	3%	21	6%	0.124
Bipolar or schizophrenia	14	7%	13	5%	0.566
Alcohol use problems	14	12%	38	12%	0.877
Opioid or other drug use problems	11	5%	28	10%	0.078

Characteristics	Would Participate (n=179)		Would not Participate (n=484)		P-Value
	n	Weighted Estimate	n	Weighted Estimate	
No mental illness or drug use problems	99	55%	320	62%	0.105

Note: Estimates were weighted to adjust for non-response and be nationally representative. There were three individuals that did not respond to the question about preferences for online social networks or support groups. P-values were calculated using a weighted Chi-square test.

APPENDIX F: Exploration of the Relationships Between Measures of Health Utility

Among the Bereaved

Below are additional relationships and comparisons between the VAS and the TTO and EQ-5D.

Figure F-1. Comparison of Health Utility Measured by the Time Trade-Off (TTO) Question and the Rescaled Visual Analogue Scale Score
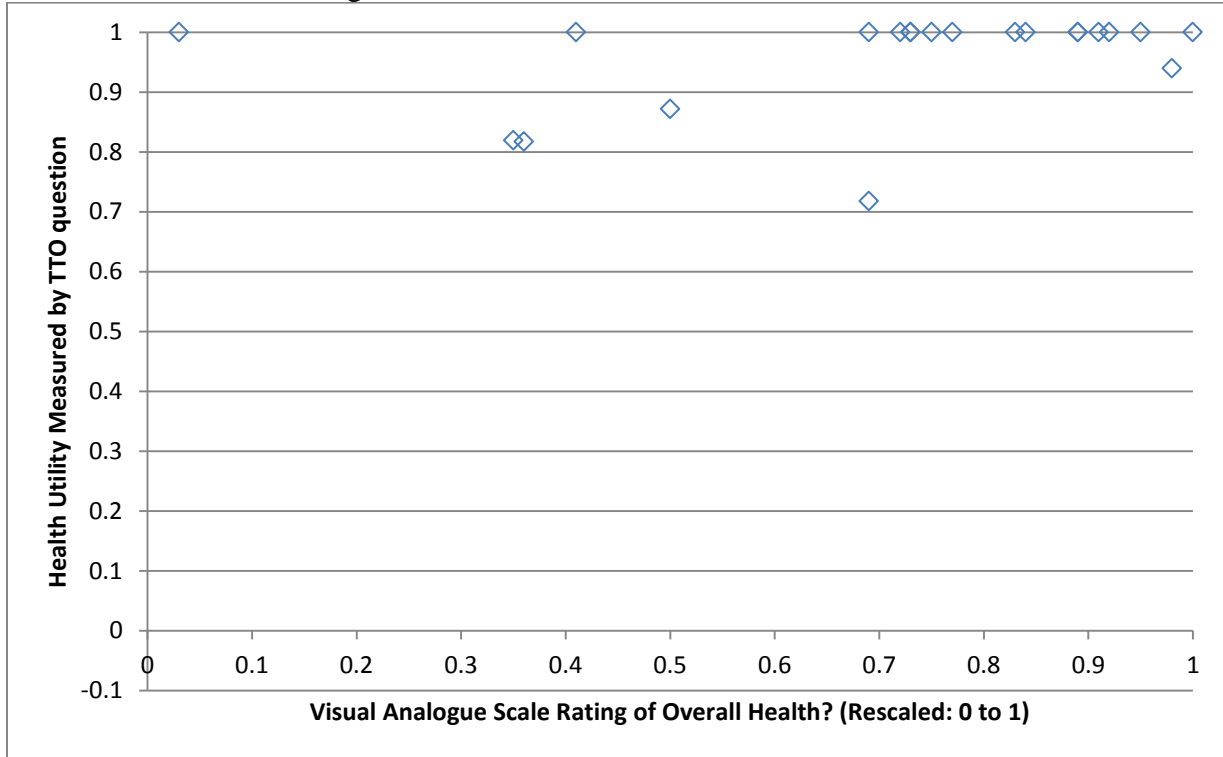
Note: There were 21 observations that reported that they currently experienced health effects from the grief, were non-refusers to the TTO question, and provided an estimate of the visual analogue scale.

Figure F-2. Linear and Quadratic Predictions of Health Utility from the Visual Analogue Scale
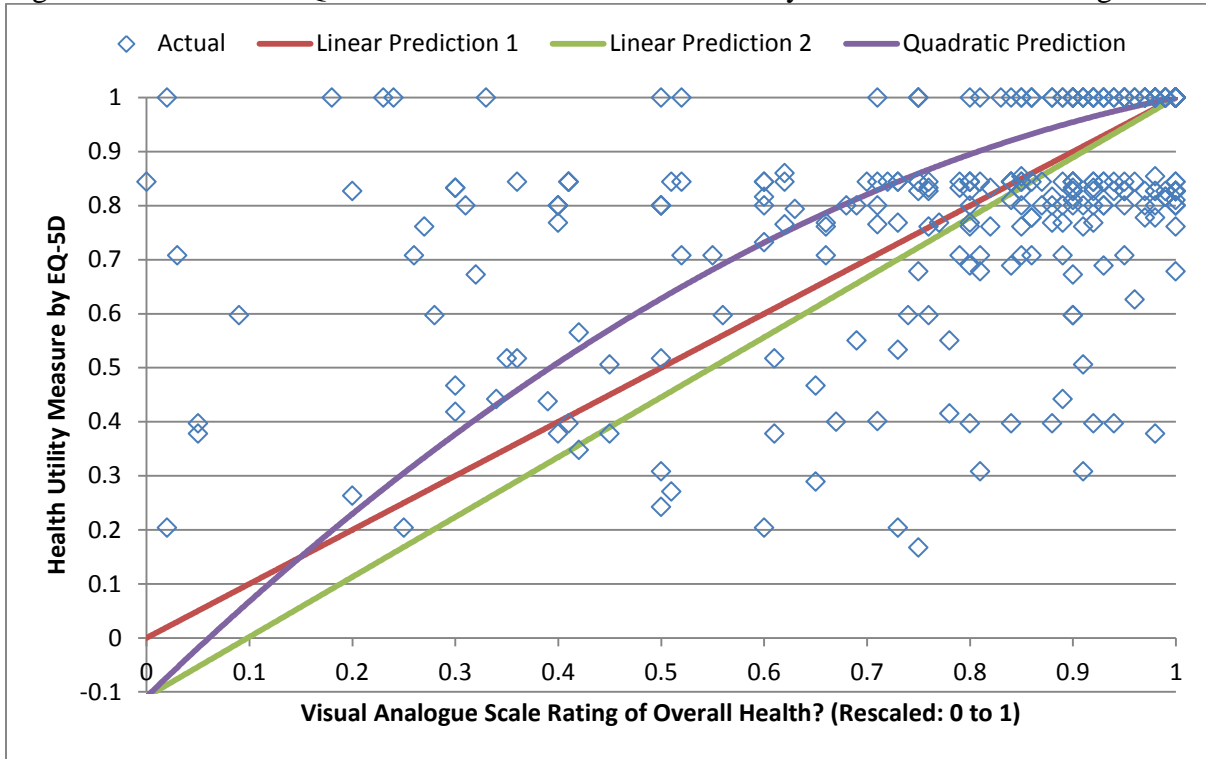
Note: Linear prediction 1 had a root mean squared error (RMSE) of 0.247 is the function U=V; where U is the health utility measured by the EQ-5D and V is the rescaled visual analogue scale. The linear prediction 2 had a RMSE or 0.272 and is the function U=1.109*V – 0.109. The quadratic prediction had a RMSE of 0.251 and is the function U=1.839*V – 0.730*V – 0.109. Predictions were based on weighted outcomes.

APPENDIX G: Number of People Age 18 and Older Who Are Aware of Each Suicide

Death

In the 1970's, Dr. Alfred Shneidman suggested that with each suicide death there are six people who become "survivor-victims."[183] Even though this number has often been restated, there have been several studies that found more than just six people affected by each suicide. In 2011, one study surveyed survivors of suicide loss and estimated 59 people were directly and intimately affected by each suicide.[184] This was based on respondents' reports of the number of people who had been affected by the same suicide death. A very recent study estimated that 135 people were exposed to each suicide.[185] This estimate includes people who were aware of the suicide death but may not have been intimately affected by the suicide. Its estimates were also based on a survey in Kentucky that was then generalized to the US population. One study that used a nationally representative sample to determine exposure to suicide in the past year estimated that 425 adults were exposed for every suicide that occurred.[66] This estimate was similar to the 453 adults exposed per suicide as determined in the present study.

All of these estimates align to some extent with the average social network sizes proposed and identified based on the social brain hypothesis.[186] This theory suggests and that due to the cognitive limits of our brains, humans maintain an average active network size of about 150 people. This has been validated in other studies.[187,188] Additional studies have found hierarchical layers within the network of 150 people. These include a "support clique" of about 5 people, a "sympathy group" of about 15 people, and an "affinity group" of about 50 people.[189,190] Beyond the active network of about 150 people, there are two additional layers that are the

acquaintances (500 people) and the number of faces one can put to names (1500 people).[191] The original value of six people affected by each suicide is comparable to the size of the support clique network. The estimate of 60 individuals in the 2011 study is similar to the size of the affinity group network. From the estimates in the present study, it appears that the number of people exposed to a suicide is similar to the number of people in the acquaintances group.

The tables below include the various assumptions I have made to estimate the number of people exposed to each suicide death. The final estimate only pertains to those 18 and older who were exposed to each suicide over the past 10 years.

Table G-1. Inputs with Random Variability Pertaining to the Prevalence of Knowing Someone Who Died by Suicide

Input Description	Estimate	Low	High	Distribution	Source
Prevalence of knowing someone who died by suicide in the past 10 years	57%	53%	60%	Beta	Multiplication of two categories below
Prevalence of knowing someone who died by suicide at any time	58%	55%	61%	--	Bereavement Survey
If exposed, prevalence of knowing someone who died in the past 10 years	97%	96%	98%	--	Bereavement Survey
Percentage of people knowing 1 person who died by suicide in the past 10 years	84%	100%	67%	Uniform[a]	Bereavement Survey, Author judgment
Percentage of people knowing 2 people who died by suicide in the past 10 years	12%	0%	24%	Uniform[a]	Bereavement Survey, Author judgment
Percentage of people knowing 3 people who died by suicide in the past 10 years	3%	0%	6%	Uniform[a]	Bereavement Survey, Author judgment
Percentage of people knowing 4+ people who died by suicide in the past 10 years	1%	0%	3%	Uniform[a]	Bereavement Survey, Author judgment
Percentage of those 18+ who know someone who died by suicide in the past year	7%	6%	8%	Beta	Crosby and Sacks (2002)

[a]This was taken from a set of distributions with equal probability of being used that ranged between the high and low estimates. The high estimate is the proportion reported in the bereavement survey. The low estimate assumes that over the 10 years even if they knew more than 1 person they are only impacted once. To establish the set of distributions, I started at the high distribution and shifted the distribution incrementally closer to the low distribution. Each distribution shifts 1% point that is taken proportionally from the distribution of respondents knowing 2, 3, or 4+ suicides and adds it to the percentage knowing only 1 suicide. The average was used as the point estimate.

Table G-2. Fixed Inputs Regarding Suicide Decedents, Population Size, and Deaths Each Year from 2007 to 2015

Input Description	Estimate	Source
Total suicide deaths over 10 years (2007-2016)	399,157	WISQARS, CDC
Number of people 18+ who died in 2007	2,377,750	WISQARS, CDC
Number of people 18+ who died in 2008	2,428,011	WISQARS, CDC
Number of people 18+ who died in 2009	2,395,523	WISQARS, CDC
Number of people 18+ who died in 2010	2,429,527	WISQARS, CDC
Number of people 18+ who died in 2011	2,477,265	WISQARS, CDC
Number of people 18+ who died in 2012	2,505,846	WISQARS, CDC
Number of people 18+ who died in 2013	2,559,906	WISQARS, CDC
Number of people 18+ who died in 2014	2,589,866	WISQARS, CDC
Number of people 18+ who died in 2015	2,675,256	WISQARS, CDC
Number of people 18+ living in 2016	249,485,228	WISQARS, CDC

Note: The people who die each year could have been aware of suicide deaths that occurred between 2007 and 2015 prior to their own death.

Table G-3. Assumptions Regarding the Percentage of Those Who Died Each Year and Were Exposed to Suicide Prior to Their Death, Each Year from 2007 to 2015

Suicide exposure among those who die each year	Estimate
Percentage of those who died in 2007 that were aware of a suicide in the past year[a]	7%
Percentage of those who died in 2008 that were aware of a suicide in the past 2 years	13%
Percentage of those who died in 2009 that were aware of a suicide in the past 3 years	18%
Percentage of those who died in 2010 that were aware of a suicide in the past 4 years	24%
Percentage of those who died in 2011 that were aware of a suicide in the past 5 years	29%
Percentage of those who died in 2012 that were aware of a suicide in the past 6 years	35%
Percentage of those who died in 2013 that were aware of a suicide in the past 7 years	40%
Percentage of those who died in 2014 that were aware of a suicide in the past 8 years	46%
Percentage of those who died in 2015 that were aware of a suicide in the past 9 years	51%
Exposed to suicides over the 10 years from 2007-2016[b]	57%

[a]This estimate is based on the input in table 1 from Crosby and Sacks (2002). [b]A linear interpolation was used to estimate the exposure for each additional year until it reached the 57% of knowing anyone who died by suicide in the past 10 years, as reported in table 1.

Table G-4. Estimates for the Number of People Aware of Suicide Deaths Overall and on Average from 2007-2016

Outcome	Point Estimate
Number of instances where people ages 18 and older alive in 2016 were aware of suicide deaths in 2007-2016[a]	172,747,447
Number of instances where people ages 18 and older who died between 2007 to 2015 were aware of suicide deaths in 2007-2015[b]	8,114,630
Total number of instances where people ages 18 and older were aware of suicide decedents in 2007-2016	180,862,077
Average number of people 18 and older who are aware of each suicide death	453

[a]This was calculated as follows: (number of people living)*(percentage exposed)*[1*(percentage exposed to 1) + 2*(percentage exposed to 2) +3*(percentage exposed to 3) + 4*(percentage exposed to 4+)]. [b]This was calculated similar to the first note; however, the numbers of deaths each year reported in Table G-2 were multiplied by the percentage exposed assumed in Table G-3.

APPENDIX H: Additional Outputs for the QALY and Productivity Losses Among the

Bereaved

Figure H-1. Approximate Health Utility Before and After the Suicide Among Those Who Reported that Their Overall Health Was Affected for Less Than 6 months
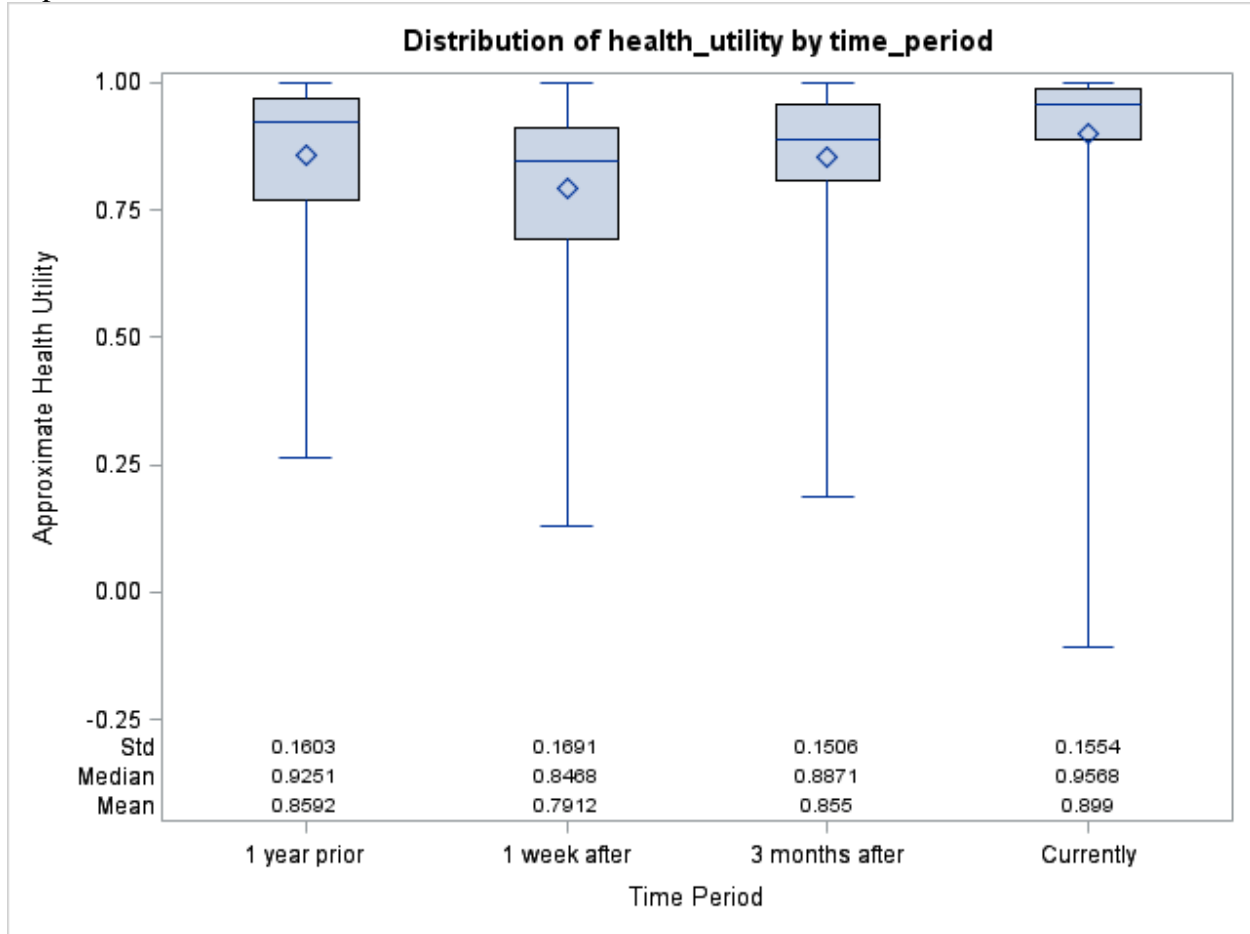
Abbreviations: Std, standard deviation. Note: Health utility was approximated using the transformed VAS score as described in Chapter IV. The length of the box is from the 25th to 75th percentile and the whiskers extend to the maximum and minimum values. The diamond in each box is the mean, and the line in each box is the median.

Figure H-2. Approximate Health Utility Before and After the Suicide Among Those Who Reported that Their Overall Health Was Affected for 6 Months to a Year
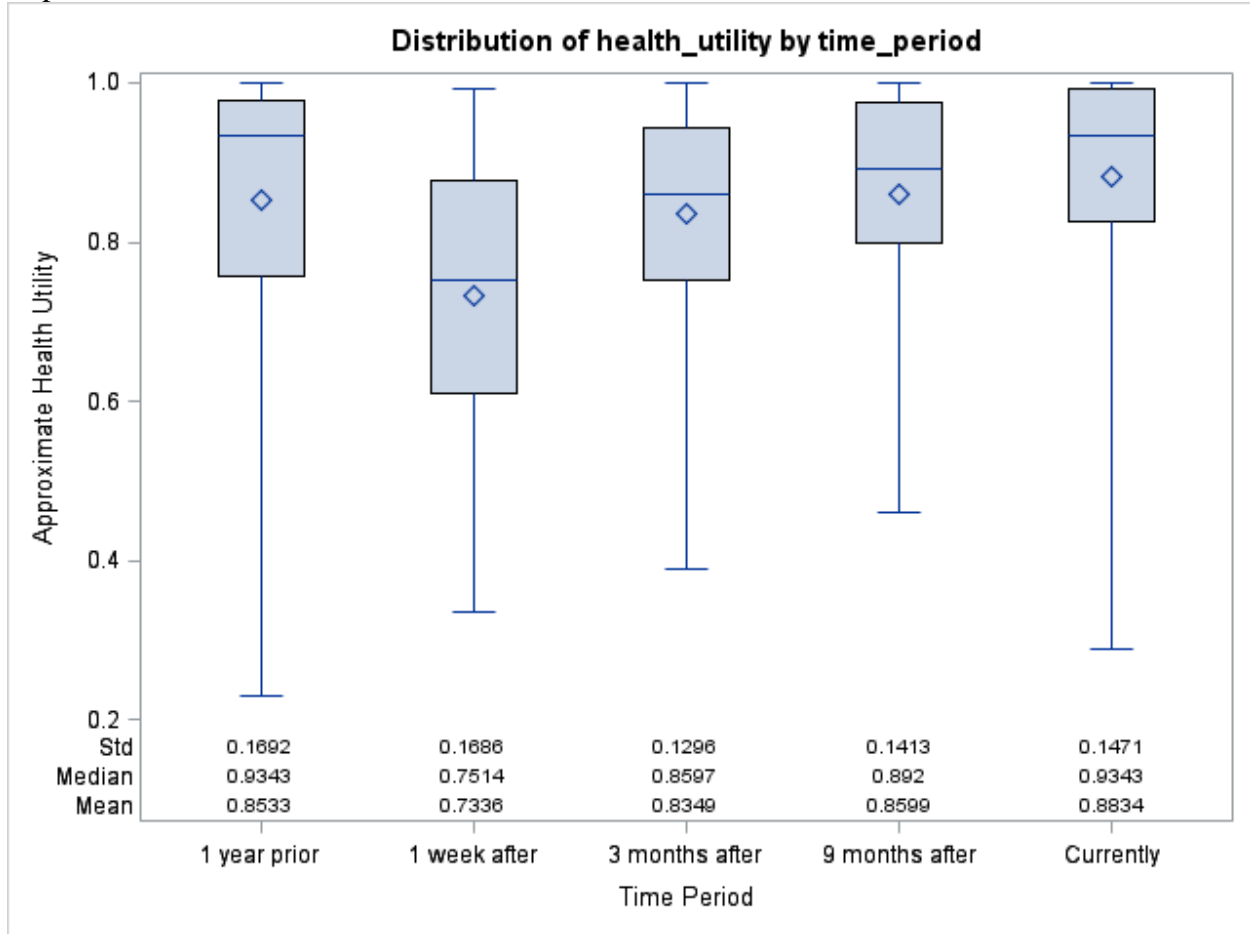
Abbreviations: Std, standard deviation. Note: Health utility was approximated using the transformed VAS score as described in Chapter IV. The length of the box is from the 25th to 75th percentile and the whiskers extend to the maximum and minimum values. The diamond in each box is the mean, and the line in each box is the median.

Figure H-3. Approximate Health Utility Before and After the Suicide Among Those Who Reported that Their Overall Health Was Affected for More Than a Year
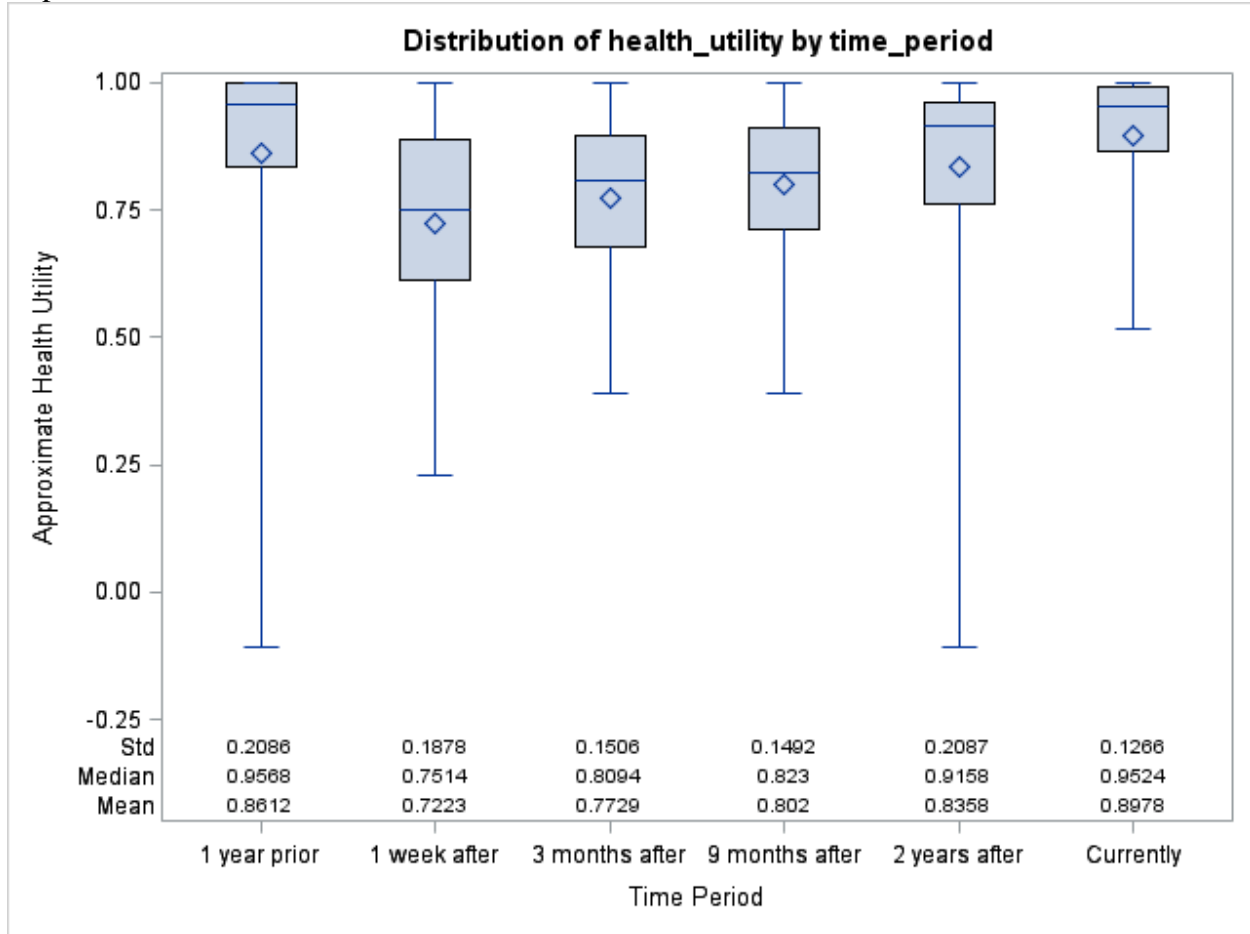
Distribution of health_utility by time_period

	1 year prior	1 week after	3 months after	9 months after	2 years after	Currently
Std	0.2086	0.1878	0.1506	0.1492	0.2087	0.1266
Median	0.9568	0.7514	0.8094	0.823	0.9158	0.9524
Mean	0.8612	0.7223	0.7729	0.802	0.8358	0.8978

Abbreviations: Std, standard deviation. Note: Health utility was approximated using the transformed VAS score as described in Chapter IV. The length of the box is from the 25th to 75th percentile and the whiskers extend to the maximum and minimum values. The diamond in each box is the mean, and the line in each box is the median.

Table H-1. The Level of Effect Among Those Who Were Less Than 18 When They Knew Someone Who Died by Suicide

Level of Effect	n	Weighted Estimate	95% Lower Confidence Limit	95% Upper Confidence Limit
No effect	6	7%	1%	12%
Little effect	25	33%	23%	44%
Moderate effect	25	34%	24%	45%
Large effect	13	22%	13%	31%
Extreme effect	3	4%	0%	8%

Note: Estimates were weighted to be nationally representative. Three people provided missing responses and were excluded from the analysis. The average time since the suicide happened was 19.5 years.

Table H-2. Assumed Monthly Earnings by Age Group

Age Group	Average Monthly Earnings 2018
< 25	$1,471.58
25 to 34	$3,572.33
35 to 44	$4,848.08
45 to 54	$5,051.17
55 to 64	$4,623.92
65 to 74	$3,631.58
75+	$2,606.58

Note: Annual earnings were taken from the Current Population Survey 2016 estimate[171] as suggested in the book *Cost-Effectiveness in Health and Medicine, Second Edition.*[135]

Figure H-4. Probability of Outcomes for QALYs Lost Given the Uncertainty of Inputs
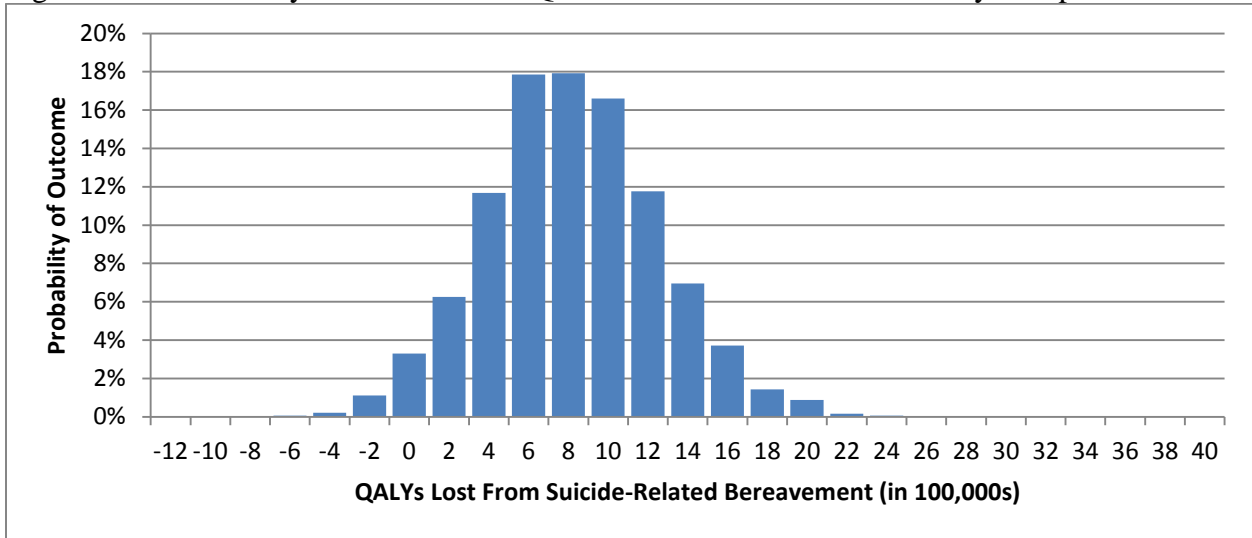
Note: This distribution was developed using 5,000 Monte Carlo simulations. Negative values mean that the health utility of individuals improved after the death, compared to the year before the death.

Figure H-5. Probability of Outcomes for Absenteeism Costs Given the Uncertainty of Inputs
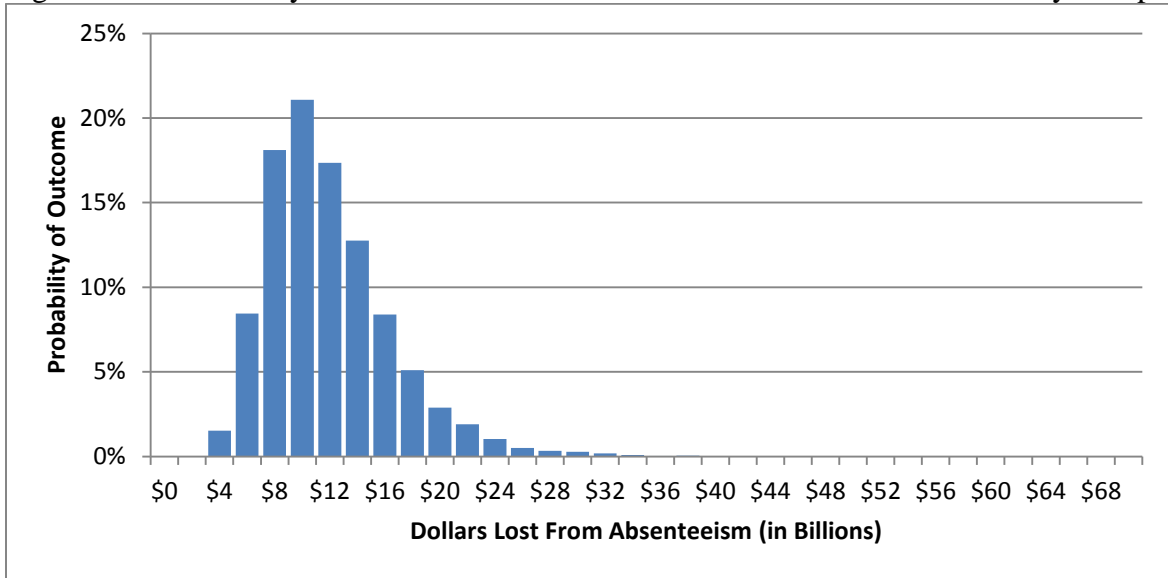
Note: This distribution was developed using 5,000 Monte Carlo simulations.

Figure H-6. Probability of Outcomes for Absenteeism Costs Given the Uncertainty of Inputs
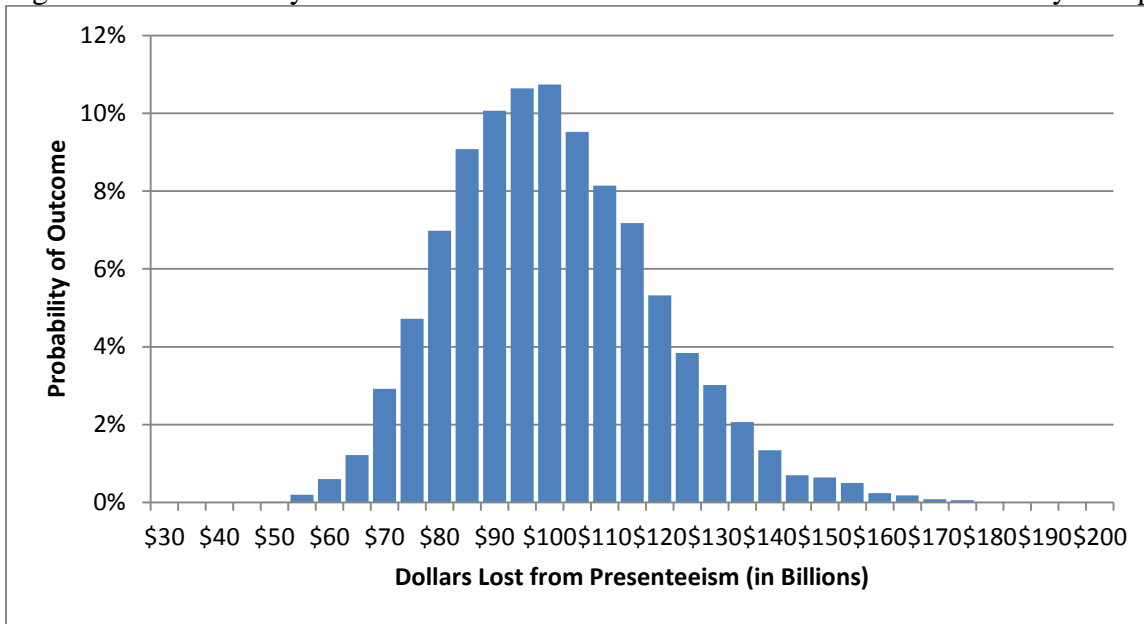
Note: This distribution was developed using 5,000 Monte Carlo simulations.

Figure H-7. Total and Average Undiscounted QALYs Lost from Suicide Decedents and the Bereaved in 2016

Outcome	Estimate	95% Lower Credible Limit	95% Upper Credible Limit
Total QALYs lost from suicide decedents in 2016	1,130,601	--	--
Average QALYs lost from suicide decedents in 2016	25.144	--	--
Total QALYS lost from bereavement	1,226,951	-650,217	3,314,628
Average QALYS lost from bereavement per suicide death	27.287	-14.461	73.716

Note: In the main text QALYS were discounted by 0.247% monthly which is equivalent to 3% annually; however, in this analysis QALYs were not discounted.

APPENDIX I: Inputs for QALY and Productivity Losses Among Suicide Decedents

Table I-1. Inputs for Calculating QALY and Productivity Losses Among Suicide Decedents by Age and Sex

Age	Percentage of Suicide Deaths Among Males[a]	Percentage of Suicide Deaths Among Females[a]	Probability of Surviving One Year for Males[b]	Probability of Surviving One Year for Females[b]	Health Utility for Males with "Good" Health[c]	Health Utility for Females with "Good" Health[c]	Health Utility for Males with "Fair" Health[c]	Health Utility for Females with "Fair" Health[c]	Net Productivity for Males[d]	Net Productivity for Females[d]
10	0.0%	0.0%	0.999907	0.999916	0.810	0.779	0.717	0.686	$2,620	-$1,793
11	0.1%	0.1%	0.999899	0.999913	0.810	0.779	0.717	0.686	$2,620	-$1,793
12	0.1%	0.3%	0.999864	0.9999	0.810	0.779	0.717	0.686	$2,620	-$1,793
13	0.2%	0.5%	0.999795	0.999876	0.810	0.779	0.717	0.686	$2,620	-$1,793
14	0.3%	0.8%	0.999701	0.999843	0.810	0.779	0.717	0.686	$2,620	-$1,793
15	0.6%	0.9%	0.999599	0.999806	0.810	0.779	0.717	0.686	$2,620	-$1,793
16	0.7%	1.2%	0.999495	0.999768	0.810	0.779	0.717	0.686	$2,620	-$1,793
17	0.9%	1.1%	0.99938	0.999731	0.810	0.779	0.717	0.686	$2,620	-$1,793
18	1.1%	0.9%	0.999253	0.999696	0.810	0.779	0.717	0.686	$2,620	-$1,793
19	1.3%	1.0%	0.999121	0.999662	0.809	0.778	0.716	0.685	$2,620	-$1,793
20	1.4%	1.1%	0.998981	0.999627	0.808	0.777	0.715	0.684	$2,620	-$1,793
21	1.8%	1.3%	0.998849	0.999591	0.808	0.776	0.714	0.683	$2,620	-$1,793
22	1.7%	1.2%	0.998748	0.999558	0.807	0.775	0.714	0.682	$2,620	-$1,793
23	1.9%	1.4%	0.998691	0.999529	0.806	0.774	0.713	0.681	$2,620	-$1,793
24	1.8%	1.2%	0.998665	0.999503	0.805	0.773	0.712	0.680	$2,620	-$1,793
25	1.9%	1.2%	0.998651	0.999476	0.804	0.772	0.711	0.679	$29,760	$16,354
26	1.8%	1.4%	0.998631	0.999447	0.803	0.772	0.710	0.679	$29,760	$16,354
27	1.8%	1.3%	0.998609	0.999418	0.802	0.771	0.709	0.678	$29,760	$16,354
28	1.8%	1.4%	0.998578	0.999389	0.801	0.770	0.708	0.677	$29,760	$16,354
29	1.7%	1.4%	0.998541	0.999359	0.801	0.769	0.707	0.676	$29,760	$16,354
30	1.6%	1.4%	0.998502	0.999327	0.800	0.768	0.707	0.675	$29,760	$16,354
31	1.6%	1.7%	0.998464	0.99929	0.799	0.767	0.706	0.674	$29,760	$16,354
32	1.6%	1.6%	0.998424	0.999247	0.798	0.766	0.705	0.673	$29,760	$16,354
33	1.6%	1.4%	0.998384	0.999195	0.797	0.765	0.704	0.672	$29,760	$16,354
34	1.6%	1.5%	0.998339	0.999136	0.796	0.765	0.703	0.672	$29,760	$16,354
35	1.6%	1.7%	0.998284	0.999068	0.795	0.764	0.702	0.671	$51,539	$25,060
36	1.7%	1.7%	0.998218	0.998995	0.794	0.763	0.701	0.670	$51,539	$25,060
37	1.6%	1.7%	0.998146	0.998918	0.794	0.762	0.700	0.669	$51,539	$25,060
38	1.5%	1.8%	0.998069	0.99884	0.793	0.761	0.700	0.668	$51,539	$25,060

Age	Percentage of Suicide Deaths Among Males[a]	Percentage of Suicide Deaths Among Females[a]	Probability of Surviving One Year for Males[b]	Probability of Surviving One Year for Females[b]	Health Utility for Males with "Good" Health[c]	Health Utility for Females with "Good" Health[c]	Health Utility for Males with "Fair" Health[c]	Health Utility for Females with "Fair" Health[c]	Net Productivity for Males[d]	Net Productivity for Females[d]
39	1.5%	1.5%	0.997982	0.998757	0.792	0.760	0.699	0.667	$51,539	$25,060
40	1.4%	1.7%	0.997877	0.998664	0.791	0.759	0.698	0.666	$51,539	$25,060
41	1.5%	1.6%	0.997748	0.998558	0.790	0.758	0.697	0.665	$51,539	$25,060
42	1.4%	1.7%	0.997587	0.998438	0.789	0.758	0.696	0.664	$51,539	$25,060
43	1.5%	1.7%	0.997389	0.998302	0.788	0.757	0.695	0.664	$51,539	$25,060
44	1.6%	1.8%	0.997155	0.998151	0.787	0.756	0.694	0.663	$51,539	$25,060
45	1.6%	1.8%	0.996891	0.997986	0.787	0.755	0.693	0.662	$49,589	$20,540
46	1.8%	2.2%	0.996598	0.997805	0.786	0.754	0.693	0.661	$49,589	$20,540
47	1.6%	2.0%	0.996264	0.997598	0.785	0.753	0.692	0.660	$49,589	$20,540
48	1.6%	1.9%	0.995886	0.997361	0.784	0.752	0.691	0.659	$49,589	$20,540
49	1.6%	1.9%	0.995467	0.997097	0.783	0.751	0.690	0.658	$49,589	$20,540
50	1.7%	2.0%	0.995013	0.996811	0.782	0.751	0.689	0.657	$49,589	$20,540
51	1.8%	2.2%	0.994527	0.996512	0.781	0.750	0.688	0.657	$49,589	$20,540
52	2.1%	2.7%	0.994003	0.996205	0.780	0.749	0.687	0.656	$49,589	$20,540
53	2.0%	2.7%	0.99344	0.995895	0.779	0.748	0.686	0.655	$49,589	$20,540
54	2.1%	2.5%	0.992841	0.995577	0.779	0.747	0.686	0.654	$49,589	$20,540
55	2.0%	2.3%	0.992197	0.995225	0.778	0.746	0.685	0.653	$40,343	$15,488
56	1.9%	2.5%	0.99152	0.994847	0.777	0.745	0.684	0.652	$40,343	$15,488
57	2.0%	2.2%	0.99083	0.994472	0.776	0.744	0.683	0.651	$40,343	$15,488
58	1.7%	2.2%	0.990137	0.994107	0.775	0.744	0.682	0.650	$40,343	$15,488
59	1.7%	1.9%	0.989428	0.993734	0.774	0.743	0.681	0.650	$40,343	$15,488
60	1.7%	2.1%	0.988646	0.993312	0.773	0.742	0.680	0.649	$40,343	$15,488
61	1.6%	1.7%	0.987798	0.992824	0.772	0.741	0.679	0.648	$40,343	$15,488
62	1.4%	1.8%	0.986939	0.992276	0.772	0.740	0.678	0.647	$40,343	$15,488
63	1.2%	1.4%	0.98608	0.991661	0.771	0.739	0.678	0.646	$40,343	$15,488
64	1.2%	1.6%	0.985181	0.990966	0.770	0.738	0.677	0.645	$40,343	$15,488
65	1.3%	1.2%	0.984174	0.990168	0.769	0.737	0.676	0.644	$28,525	$3,437
66	1.2%	1.2%	0.983014	0.98926	0.768	0.737	0.675	0.643	$28,525	$3,437
67	1.0%	1.1%	0.981705	0.988246	0.767	0.736	0.674	0.643	$28,525	$3,437
68	1.1%	1.1%	0.980224	0.987119	0.766	0.735	0.673	0.642	$28,525	$3,437

Age	Percentage of Suicide Deaths Among Males[a]	Percentage of Suicide Deaths Among Females[a]	Probability of Surviving One Year for Males[b]	Probability of Surviving One Year for Females[b]	Health Utility for Males with "Good" Health[c]	Health Utility for Females with "Good" Health[c]	Health Utility for Males with "Fair" Health[c]	Health Utility for Females with "Fair" Health[c]	Net Productivity for Males[d]	Net Productivity for Females[d]
69	1.1%	1.1%	0.978552	0.985859	0.765	0.734	0.672	0.641	$28,525	$3,437
70	0.9%	0.7%	0.97662	0.984388	0.765	0.733	0.671	0.640	$28,525	$3,437
71	0.8%	0.9%	0.974451	0.982725	0.764	0.732	0.671	0.639	$28,525	$3,437
72	0.9%	0.6%	0.972115	0.980953	0.763	0.731	0.670	0.638	$28,525	$3,437
73	1.0%	0.7%	0.969626	0.979091	0.762	0.730	0.669	0.637	$28,525	$3,437
74	0.7%	0.7%	0.966901	0.977061	0.761	0.729	0.668	0.636	$28,525	$3,437
75	0.8%	0.4%	0.963746	0.974703	0.760	0.729	0.667	0.636	$16,426	$126
76	0.7%	0.4%	0.960118	0.971955	0.759	0.728	0.666	0.635	$16,426	$126
77	0.7%	0.6%	0.956121	0.968869	0.758	0.727	0.665	0.634	$16,426	$126
78	0.7%	0.3%	0.951744	0.965418	0.758	0.726	0.664	0.633	$16,426	$126
79	0.8%	0.4%	0.946877	0.961533	0.757	0.725	0.664	0.632	$16,426	$126
80	0.6%	0.4%	0.941289	0.956992	0.756	0.724	0.663	0.631	$16,426	$126
81	0.7%	0.4%	0.934919	0.951825	0.755	0.723	0.662	0.630	$16,426	$126
82	0.5%	0.2%	0.927861	0.946228	0.754	0.722	0.661	0.629	$16,426	$126
83	0.5%	0.4%	0.920088	0.94023	0.753	0.722	0.660	0.628	$16,426	$126
84	0.5%	0.3%	0.911471	0.933633	0.752	0.721	0.659	0.628	$16,426	$126
85+	3.1%	1.4%	0.901852	0.926172	0.751	0.720	0.658	0.627	$16,426	$126

[a]Distribution of suicide by age was calculated based on suicide deaths in 2016 in the US as reported by the Centers for Disease Control and Prevention Web-based Injury Statistics Query and Reporting System (WISQARS). [b]Probability of one-year survival was calculated as one minus the probability of death provided in the Social Security Administration's 2014 Period Life Table (https://www.ssa.gov/oact/STATS/table4c6.html). Probabilities all the way to age 119 were used in the simulation even though this table only shows estimates to age 85. Survival up to a given index year was calculated as the product of each of the one-year survival probabilities from the year the suicide was averted to the index year. [c]These were calculated by Dr. Janel Hanmer at the University of Pittsburgh using the Medical Expenditures Panel Survey and the National Health Interview Survey. The estimates of health utility by age and sex are made publicly available at http://janelhanmer.pitt.edu/QALE.html. For calculating QALYs lost, I assumed that those less than 18 had the same health utility values of those who were 18. [d]These were calculated as the difference between the average annual earnings for males and females in 2016, reported in the Current Population Survey, and the overall average annual expenditures in 2016, reported in the Consumer Expenditure Survey (expenditures by age and sex were not available).[171,173] The

expenditures were adjusted using the same methodology reported in the book *Cost-Effectiveness in Health and Medicine, Second Edition,* where the consumer unit expenditures was divided by the number of people in each consumer unit.[135]

APPENDIX J: Infographic of Dissertation

Figure J-1. First Page of Dissertation Infographic

Changes in Medical Expenditures the Year After a Family Member Died by Any Cause in a US Hospital:

$496*

$225

$238

Adults Whose Spouse Died

Adults Whose Child Died

Child Whose Parent Died

Child Whose Sibling Died

-$334*

*Significantly different from $0.

$130 for physical health outpatient visits

$186 for inpatient or emergency room visits

2/3 — Bereaved individuals had a disruption in health insurance and were excluded from the study

THE ECONOMIC AND QUALITY OF LIFE IMPACTS OF

GRIEF AND SUICIDE

Exposure to Suicide: Among Adults Ages 18+

31%
58%
11%

☐ Exposed to death
☐ Exposed to attempt
☐ Not Exposed

7% currently experiencing complicated grief

Among Teens Ages 15-17

39%
44%
17%

☐ Exposed to death
☐ Exposed to attempt
☐ Not Exposed

7% whose emotional, mental, or physical health is currently affected by an attempt or death

Duration of Life Changes Among Exposed Adults After Most Impactful Suicide Death And Exposed Teens After Most Impactful Death or Attempt

Mental Focus
Permanent: 7% Teens, 10% Adults
For a Time: 55% Teens, 35% Adults

Physically
Permanent: 14% Teens, 10% Adults
For a Time: 18% Teens, 17% Adults

12% of adults and teens changed in every domain

Emotionally
Permanent: 17% Teens, 16% Adults
For a Time: 60% Teens, 50% Adults

Sleep
Permanent: 9% Teens, 7% Adults
For a Time: 41% Teens, 29% Adults

Socially
Permanent: 6% Teens, 10% Adults
For a Time: 43% Teens, 27% Adults

Spirituality
Permanent: 17% Teens, 16% Adults
For a Time: 21% Teens, 22% Adults

Life Goals
Permanent: 17% Teens, 16% Adults
For a Time: 20% Teens, 20% Adults

Productivity
Permanent: 9% Teens, 7% Adults
For a Time: 31% Teens, 20% Adults

Figure J-2. Second Page of Dissertation Infographic

Health Utility and Time Trade-Off Responses Among Adults Exposed to Suicide:

1.000 ◆ 1.000 Perfect health

0.900
0.800 ◆ 0.832 Exposed to suicide*
       ◆ 0.787 Survivor of suicide loss*
0.700
0.600 ◆ 0.666 Health is currently affected by suicide*
0.500
0.400   Similar health utility as someone
0.300   with PTSD (0.630 to 0.682) or both
0.200   diabetes and heart failure (0.677)
0.100
0.000 ◆ 0.000 Death

*Measured using the EQ-5D

■ Willing to trade off time ■ Skipped the question □ Unwilling to trade off time

| 6% | 24% | 70% |

| 8% | 19% | 23% | 44% | 6% |

■ Not wanting burdens to be removed
■ Not believing it is possible to trade off time
■ Morally opposed to trading off time
□ Coping well enough
□ Other

THE ECONOMIC AND QUALITY OF LIFE IMPACTS OF
GRIEF AND SUICIDE

Quality Adjusted Life Year (QALY) and Productivity Losses from Suicide:

44,965 suicides in 2016 and over 20 million instances where people were aware of the death

5% Extreme Effect

16% Large Effect

38% Moderate Effect

For every suicide **453 people** are exposed

33% Little Effect

8% No Effect

Suicide deaths in 2016 resulted in **$134 billion** in productivity losses from the deceased and the bereaved

14.3   16.4

□ QALYs lost per suicide from the bereaved
■ QALYs lost per suicide from the decedent

31 QALYs lost per suicide or 1.4 million QALYs lost from suicides in 2016

SAMHSA and NIH spent **$145 million** on suicide research and prevention in 2016

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