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Estimating the Population of Survivors of Suicide: Seeking an Evidence Base

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Shneidman (1973) derived an estimate of six survivors for every suicide that, in the ensuing years, has become an assumed fact underlying public health messaging campaigns in support of suicide prevention and postvention programs worldwide, in spite of it lacking either empirical testing or validation. This report offers a first test designed to derive estimates of suicide survivors and raises an array of empirical questions needing further study to reasonably address the impact of suicide on others.

Shneidman (1973) wrote that "it is rather accurately documented that … for each committed suicide there are an estimated half-dozen survivor-victims whose lives are thereafter benighted by that event" (p. 22). Ignoring his oxymoronic phrasing regarding an "accurately documented … estimate," no census of survivors of suicide has ever been conducted, and no documentation of the average number of survivors per suicide can be found in the literature.

When asked how he derived his guesstimate, Shneidman referred to "received wisdom" or common sense as to how many immediate family members should be owed a judgment in the case of a compensable death (Linn-Gust, 2004). Indeed, the law typically assumes that blood relatives are compensable victims. For example, the 911 Victims Compensation Fund considered and paid claims based primarily on economic losses suffered by family members of 2,897 victim-decedents (Dixon & Stern, 2004). This number, commonly translated as "six survivors for every suicide," has become embedded in national suicide prevention strategies (cf. U.S. Public Health Service, 2001) and public health messaging campaigns promoting suicide prevention and postvention world-wide (Andriessen, 2009), yet remains lacking in both empirical testing and validation.[1] This brief research report offers results from an epidemiologic pilot test of a few alternative ways of defining and estimating the prevalence of suicide survivors per each death by suicide.

The first issue to be addressed in establishing the prevalence of survivorship is that of defining who is a survivor. There exists no clear or consensual definition of

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1. Crosby and Sacks (2002) reported results of a 1994 random telephone survey of U.S. households and found that approximately 7% of the U.S. population had been "exposed" to a death by suicide of "someone that you have known personally" in the last year. They extrapolated that there were 425 people exposed to each suicide. It should be emphasized that "exposure" is not synonymous with any currently used definition of "survivor of suicide."

who might reasonably be considered a suicide survivor. Commonly offered definitions involve varying degrees of kinship, as in those in the immediate family (e.g., blood relatives, see above), and some quality of relationship such that one is impacted by the death. For example, Andriessen (2009) suggested that "a survivor is usually regarded as a person who has lost a significant other (or a loved one) by suicide, and *whose life is changed because of the loss*" (p. 43; emphasis added). By relying on the term *significant other*, this definition incorporates notions of kinship or psychological closeness to the decedent. (Andriessen acknowledges that those who die by suicide are not always considered "loved ones" by close others.) This definition, however, is muddled by the relative difficulty in defining "life changing impact." Jordan and McIntosh (2011), follow somewhat the same path in defining a suicide survivor as "someone who experiences a high level of self-perceived psychological, physical, and/or social distress for a considerable length of time after exposure to the suicide of another person" (p. 7). This definition is complicated by its inference to symptomatic sequelae as definitional criteria and its lack of operational definition as to what constitutes a "high level" of distress and a "considerable length of time." Furthermore, there remain definitional ambiguities in whether one needs to be negatively *impacted* versus *affected* by the death, or merely *exposed* to the death of someone to be defined as a suicide survivor (see footnote 1). In this regard, it remains unclear whether being negatively impacted (and thus a survivor) is established through self-definition or by other, external-to-self criteria or persons.

For the purposes of the present study, survivors of suicide were defined as those believed to be *intimately and directly affected* by a suicide; that is, those who would self-define as survivors after the suicide of another person. Two primary hypotheses were proposed in this study:

Hypothesis 1: Estimates of the number of survivors intimately and directly affected would vary according to relationship type; for example, immediate family members, friends, and so forth.

Hypothesis 2: Estimates of the number of survivors intimately and directly affected would vary according to the age of the decedent and the frequency of contact had with the decedent.

METHOD

Participants

Brief surveys were mailed to U.S.-based members of the Survivor Division of the American Association of Suicidology (AAS; $n = 187$) and to group leaders of clearly titled survivor support groups ($n = 66$) based in 33 U.S. states and listed in a directory of these services housed on the AAS's web site (http://www.suicidology.org). Membership in the AAS Survivor Division does not require that one be a survivor of suicide; however, all Survivor Division members who responded to the survey self-identified as survivors of a suicide. Survivor support group leaders were asked to disseminate survey forms to group members who expressed a willingness to respond to the survey.

Survivor respondents were asked to complete and return the survey with reference to only one decedent per survey. The survey asked no identifying question of the respondent other than that intuited by their response regarding the relationship (and gender) of the person who died by suicide to the respondent. Response categories included: spouse/partner (male or female), parent (mother or father), child (son or daughter), sibling (brother or sister), friend (male or female), and other (e.g., grandfather, grandmother, etc.). This was followed by three other questions addressing: (1) the age of the decedent at the time of death; (2) estimates of the number of persons directly affected by the suicide death by category: immediate family members, extended family members, friends, and coworkers/classmates; and (3) estimates of the number of these aforementioned directly affected persons

who had daily, weekly, or less frequent contact with the decedent.

RESULTS

Within 6 weeks of mailing, completed surveys were returned from 146 respondents, 145 of which were usable. There was no way of knowing the population of survivor support group members who may have been given survey forms to be able to calculate a response rate; however, 90 surveys (62% of all respondents) were returned by members of AAS's survivor division, a response rate of 48%.

All results were calculated as medians since a few reported estimates were sufficiently extreme to bias use of means to assess and report overall central tendencies.

As shown in Table 1, in order of frequency, suicide decedents referred to by respondents were children (n = 57, 75% sons), partners (n = 22, 77% males), siblings (n = 20, 70% brothers), parents (n = 18, 56% fathers), friends (n = 14, 57% males), and miscellaneous others (n = 13, 92% males). Overall, 72% of suicide decedents referred to were males, only slightly underrepresenting the proportion comprised by males found annually in U.S. mortality figures.

The median of estimated immediate family members intimately and directly affected by the referenced suicides ranged across relationship types from 4.5 to 7.5. An overall median of slightly more than five immediate family members survived the referenced suicide (Table 2). The estimated number of extended family member survivors averaged 14.5, ranging across types of relationship from 6.5 to 18, yet larger numbers of friends and coworkers or classmates, with overall medians each of about 20, were estimated to have been significantly affected by these suicides (see Table 2).

The data by age range of decedent shown in Table 2 clearly reflects decreased numbers of estimated friends and peer survivors with increasing age of decedent. However, there is general consistency across ages especially for adult decedents for estimates of immediate family member survivors (slightly more than 5) and extended family members (between 10 and 12). Decedents under age 25 were estimated to have slightly smaller immediate families (median n = 4.13), yet larger numbers of extended family member survivors (median n = 19.5).

The data reported in Table 3 extends that of Table 2 using 2006 national data (the latest year for which national data is available) for suicides by age group to provide estimates for the total number of estimated survivors by relationship type. In sum, an estimate of more than 1.7 million new survivors were created in 2006, comprised of almost 175,000 immediate family members, more than 400,000 extended family members, almost 600,000 directly affected friends, and more than 500,000 co-workers or classmates.

Median estimates for survivors who were essentially in daily or weekly contact with decedents also are reported in Tables 1–3. Using frequency of contact as another measure of those affected by these suicides, child suicides and partner suicides affected the most individuals who had daily contact with the decedent (i.e., between 15 and 17 persons each). Parent, sibling, friend, and other decedents were estimated to affect considerably fewer others, with medians ranging only from 4 to 10 persons in daily contact. Overall, a median of seven persons were considered to be in daily contact with decedents (see Table 2). Estimated survivors in weekly contact with decedents ranged from 8 to 19.5 persons (see Table 1), with the overall average being 10.5 persons (see Table 2). Young decedents again had the highest number of estimated daily and weekly contacts; older decedents had considerably lower estimated numbers of survivors with these frequencies of contact.

DISCUSSION

As hypothesized, the results indicate considerable variation in estimates of the

TABLE 1
Median Estimated Number of Persons Intimately and Directly Affected by the Death of a Loved One by Relationship Type (N = 145)

	Child			Partner			Parent			Sibling			Friend			Other[a]		
	Son	Daughter	Total	Male	Female	Total	Father	Mother	Total	Brother	Sister	Total	Male	Female	Total	Male	Female	Total
Decedents	43	14	57	17	5	22	10	8	18	14	6	20	8	6	14	12	1	14[b]
Age of decedents	23.0	19.5	22.33	43.0	56.0	49.5	50.5	52	51.25	42.0	33.5	41.0	24.5	35.0	31.5	–	–	43.5
Family survivors	4.33	7.00	4.50	7.0	–	7.5	4.5	–	5.0	6.0	–	5.5	–	–	4.0	–	–	4.5
Extended family survivors	15.17	15.5	15.33	15.0	–	18.0	19.75	–	9.83	10.25	–	10.25	–	–	6.5	–	–	14.0
Friend survivorss	30.5	29.0	30.10	20.0	–	15.0	10.5	–	10.0	20.17	–	15.0	–	–	25.0	–	–	10.0
Coworker/classmate survivors	31.25	–	32.0	25.0	–	20.0	–	–	–	10.17	–	15.0	–	–	15.25	–	–	17.5
Daily contact	15.0	21.5	15.5	4.0	–	17.0		–	5.1	4.0	–	4.0	–	–	6.0	–	–	10.0
Weekly contact	24.0	11.0	19.5	10.42	–	11.5	–	–	9.0	10.0	–	10.17	–	–	11.5	–	–	8.0

Within cell medians based on $n < 10$ not shown.
[a]Grandparent, cousin, uncle, nephew, brother-in-law, client, etc.
[b]Gender of one decedent not given.

TABLE 2
Median Estimated Number of Persons Intimately and Directly Affected by the Death of a Loved One by Age of Decedent

Age range of decedent	10–24 (n = 43)	25–44 (n = 56)	45+ (n = 43)	Total (n = 142)
Survivor type				
Family	4.13	5.5	5.33	5.13
Extended family	19.5	10.28	12.0	14.5
Friends	20.42	19.56	15.0	19.85
Coworker or classmate	30.0	19.7	10.0	19.67
Daily	19.5	6.25	4.0	7.0
Weekly	26.0	10.17	10.34	10.5

TABLE 3
Estimated Number of Survivors per U.S. Mortality Data, 2006

Age range of decedent	10–24	25–44	45+
Decedents	4,405	11,576	17,308
Survivor type			
Family	18,192	63,668	92,252
Extended family	85,898	119,001	207,696
Friends	89,950	226,427	259,620
Coworker or classmate	132,150	228,047	173,080
All survivor types	336,170	637,143	732,648
Daily	85,898 (26%)	72,350 (11.4%)	69,232 (9.4%)
Weekly	114,530 (34%)	117,728 (18.5%)	178,965 (24.4%)

number of individuals intimately and directly affected by suicides depending on relationship to the decedent, age of decedent, and frequency of contact with the decedent. Parents of children who had died by suicide estimated that more than 80 individuals, ranging from immediate family members to classmates, would meet this definition of being a survivor. The total number of survivors estimated to have been directly and intimately affected by the suicide death of a partner or spouse is about 60; for siblings and friends the estimated number of survivors is in the range of 45 to 50. It may be reasonable to hypothesize that there is a strong association between the degree one is impacted by a suicide and the estimates one makes as to the number of others similarly impacted (parents arguably being the most impacted, spouses next most impacted, etc.). This hypothesis is worthy of further study.

Using daily contact as one possible criterion for being intimately and directly affected, however, results in considerably lower estimates, ranging between 4 and 17 survivors; whereas including those also in weekly contact extends these estimates to between 14 and 30. Frequency of contact, by itself, would appear to be an insufficient criterion to measure impact given that, for example, parents of college students away at school or in the military would be expected to have less frequent contact with their children, but still have a considerable emotional tie to them.

If we were to limit the estimates of survivors to only members of the nuclear family, Shneidman's (1973) original estimate of six survivors per suicide appears to be reasonably close to the estimate of 5.13 derived in this study. However, this limitation appears overly strict as some proportion of, if

not all, extended family members, friends, and others clearly would consider themselves to be significantly impacted by each suicide. Using daily contact as a definition of a survivor raises the median estimate to seven per suicide, but, as noted in Table 3, younger aged suicides would be expected to have considerably greater familial and societal reach than those of older ages.

These findings need to be interpreted in light of a number of study limitations. Survivor-respondents to this mailed survey were either members of the AAS or of a survivor support group; thus, they were self-identified as survivors (this, of course, is one possible definition of a survivor, i.e., if you consider yourself to be a survivor, then you are one). However, we have no way of knowing the representativeness of this sample as, it may be argued, these respondents may be more likely to affiliate, seek support, learn about suicide and suicide prevention, or wish to help others than the typical survivor. Andriessen (2009), for example, reported that only a minority of survivors (approximately 25%) found their way into support groups where available. Further, the current sample is relatively small and comprised of volunteer respondents from convenience populations. This sample of survivor-respondents would not include reference to those who die by suicide homeless or otherwise isolated and alone, for whom there may be no identified survivor to respond to survey questions. That some suicides of this type occur would mean that the estimated numbers of survivors defined by the current sample would, in reality, be lowered overall.

This sampling of estimates is just that; that is, conjectures that may have little to do with reality. Each respondent was left up to his or her interpretation of who would have been *intimately and directly affected* by the suicide of the referenced decedent. These words were chosen to imply some level of emotional connection, and thus a loss caused by the death. They do not, however, convey anything about the mutuality in the relationship with the decedent. An infant, for example, who loses his or her grandparent to suicide would have no actual direct and intimate relationship with that grandparent (other than genetically), yet they might consider themselves to be a survivor later on in their life. Memory bias (we did not ask how long ago the referenced suicide occurred) and a halo effect could well play into these estimations and lead to exaggerated counts of survivors, especially those more distal (i.e., classmates and coworkers). As one responding survivor wrote on her response sheet, "more than 500 attended the funeral." Of course, that one attended a funeral would not suffice to describe being impacted by the death, as one does not have to be emotionally distressed by the death to attend a funeral; moreover, funeral attendance may be motivated by a range of considerations including a more intimate and direct connection to the decedent's survivors, rather than to the decedent him- or herself.

The categories of survivors offered to respondents did not include others who could, theoretically and at varying levels, be affected by the suicide (e.g., fellow members of a religious congregation or club, therapists and teachers, etc.). Further, no analysis was conducted to explore ethnic, racial, or age differences in these estimates.

What is demonstrated in these results is the need for a clear and consensual definition of those we refer to as *survivors of suicide*. Exposure to a suicide, unto itself, does not imply significant negative emotional impact. Significant negative impact may be immediate and acute or of considerable duration and the temporality of the impact is rarely if ever considered in definitions of who is a survivor. Nor is quality of relationship, which reasonably may be presumed to be correlated in some way to depth of loss, ever considered in the definition. Each of these aforementioned variables, in one form or another, will lead to variations in acceptable definitions of who is to be counted as a survivor of suicide. Moreover, it is surely open to question whether any one person could reasonably know or even estimate the sphere of others who knew and were directly and intimately impacted by the death of their loved one. Jack Jordan

(personal communication, October 14, 2009) has suggested that perhaps what is needed to truly address the question of who—and how many—are survivors of suicide is a longitudinal study that examines in depth the social networks of suicides, through a series of interviews beginning with immediate family members, then with others the family nominates, then others this next rung of interviewees nominates, and so on.

What is clear from these data is that there is no specific number of survivors for any one suicide, as there is considerable variation in estimates of survivors across the variables of interest in this study: type of relationship to decedent, age of decedent, and frequency of contact with the decedent. For purposes of public health messaging and postvention programming, achieving greater specificity and sensitivity in the terminology used to denote survivors of suicide is both a desirable and yet-to-be-achieved goal. This study is neither definitive nor even adequate to answer the questions needing to be addressed. Finding a reasonable way to measure the level of impact that a death by suicide has on others, sufficient for research purposes to define the population of survivors, in no way should diminish our empathic concern for the impact of a suicidal death on others and on society as a whole.

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