

Is there a relationship between suicidal intent and lethality in deliberate self-poisoning?

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Abstract

Background

The relationship between suicidal intent (SI) and lethality of deliberate self-poisoning (DSP) episodes and their associations with suicide have yielded contradictory findings. The aims of this study were to investigate the association between patients' SI and independently rated lethality of DSP episodes, and whether the association changes over time.

Methods

Eighty-nine DSP patients were investigated longitudinally. Self-reported suicidal intent, including perceived likelihood of dying, wish to die and whether or not the DSP was considered a suicide attempt, was measured at the time of the index episode (t1), three (t2) and twelve months (t3) later. Lethality was assessed independently by three clinical toxicologists.

Results

Lethality was significantly associated with patients' reported wish to die ($p = 0.01$) and perceived likelihood of dying ($p = 0.04$) at t1, but not at t2 and t3. No association was found between whether the episode was considered a suicide attempt or not and lethality at t1, t2 or t3.

Conclusion

Lethality and suicidal intent should be considered as largely separate dimensions of self-harm. Clinicians should bear this in mind during clinical assessment, especially regarding historical information.

Key words: deliberate self-poisoning, medical lethality, suicidal intent, follow-up, risk factors, depression

Introduction

Deliberate self-harm (DSH) includes both intentional self-poisoning and self-injury and refers to a heterogeneous group of acts in terms of underlying intention and medical severity (De Leo, 2011; Haw, Hawton, Houston, & Townsend, 2003). Two important dimensions of episodes of DSH are lethality (i.e., the physical danger of the act; Rivlin, Fazel, Marzano, & Hawton, 2012; Sapyta et al., 2012) and suicidal intent (i.e., denoting the degree to which the purpose of the act was to die; Brown, Henriques, Sosdjan, & Beck, 2004; Maris, Berman, & Silverman, 2000; O'Carroll et al., 1996). However, studies of the relationship between lethality and suicidal intent and their association with subsequent suicide have yielded contradictory findings. In keeping with a widespread clinical assumption that patients with a strong wish to die engage in medically serious episodes of self-harm (Sapyta, et al., 2012), several studies have shown a positive relationship between SI and lethality for patients engaging in DSH (Goldney, 1981; Haw, Hawton, Houston, & Townsend, 2003; Power, Cooke, & Brooks, 1985; Rivlin, et al., 2012; Horesh, Levi, & Apter, 2012). Moreover, near-lethal episodes are increasingly used as a proxy for studying suicide (Hawton, 2002; Ikeda et al., 2002; Rivlin, et al., 2012), corroborating the assumed link between intent and lethality. Yet other studies have not supported such an association (Brown, et al., 2004; Eaton & Reynolds, 1985; Kessel, 1965a; Nordentoft & Branner, 2008; Plutchik, Vanpraag, Picard, Conte, & Korn, 1989; Sapyta, et al., 2012, Vlad et al., 2011), including studies showing a disconnection between highly lethal methods (e.g., pesticide ingestion) and suicidal intent in young women with no pre-existing psychiatric history, commonly found in low and middle income countries such as China (Eddleston & Phillips, 2004; Phillips et al., 2002) and Sri Lanka (Konradsen, van der Hoek, & Peiris, 2006). Moreover, many suicidal individuals, including those having survived near-lethal episodes, report a will to live (Joiner et al., 2007), indicating that the lethality-intent association is not straightforward.

Interpretation of the mixed findings are complicated by low correlations as well as poor factorial validity and subscale performance for the most frequently used measure of suicidal intent, the Suicidal Intent Scale (Beck et al., 1974), particularly items pertaining to circumstances of the DSH episode (e.g., timing of episode to prevent being found; Antretter et al., 2008; Freedenthal, 2008). Notably, in several investigations, aspects of SI often overlap with, and in some studies are included in, the measure of lethality, increasing the likelihood of multicollinearity between the variables in question and thereby potentially deflating their independent predictive power. For instance, the Risk Rescue Rating Scale (Misson et al., 2010), a 10-item scale of which five items pertain to probability of being rescued (e.g., person initiating rescue, probability of discovery, accessibility to rescue), contain factors which are included in measurement of suicidal intent. Similarly, aspects of SI to do with objective circumstances (e.g., timing of episode to prevent being found) are potentially confounded with factors related to lethality. Consequently studies are needed that apply measures of SI not confounded with lethality.

Some studies indicate that investigating specific aspects of suicidal intent may have merit. For instance, Brown et al. (2004) found that whereas overall suicidal intent and lethality were poorly related per se, high suicidal intent predicted more lethal episodes when patients had an accurate perception of the medical danger of their self-harm. Because lifetime worst-point intent and lethality of previous DSH episodes have been shown to be better predictors of repeat DSH episodes than intent and lethality of the most recent DSH episode, even when taking into account number of past DSH episodes and methods used (Sapyta et al., 2012), it is of interest to explore whether over time patients' perception of lethality become more aligned with clinicians' assessment. However, most studies investigating the relationship between patients' suicidal intent and medical danger of the act have been cross-sectional (e.g., Brown et al., 2004).

Consequently, studies that investigate both the accuracy of self-reported estimation of danger of DSH and the temporal stability of the association between intent and danger over time as well as the impact of those on suicide are warranted.

The aims of the current study were to investigate 1) the association between patients' suicidal intent and toxicological risk assessment of potential lethality of an episode of deliberate self-poisoning (DSP) at the time of the episode; 2) the temporal stability in patients' perceived likelihood of dying from an episode of DSP compared with lethality of the index episode; and 3) whether lethality predicts suicide. In this study we focussed specifically on DSP on the basis that the majority of patients who present to hospital with DSH have self-poisoned (Hawton et al., 2007).

Methods

Design

Associations between toxicological risk assessment and suicidal intent within an index episode of deliberate self-poisoning (i.e., the episode that included them in the study) and between lethality and re-appraised suicidal intent were investigated in a longitudinal design. Questionnaires were administered at three time points: at the time of the index DSP episode (t1), and three (t2) and twelve months (t3) after the index episode.

Study Population

Participants. The patients included in the study were individuals aged 18 years or older who had engaged in DSP and had presented to Ulleval University Hospital, Oslo, between January 2006 and March 2007. DSP was defined as the intentional self-administration of more than the prescribed or recommended dose of any medication and with evidence that the act was intended to harm the patient though not necessarily to result in

death (National Institute for Health and Clinical Excellence, 2011; Hawton et al., 2003).

Thus, patients were included irrespective of their degree of suicidal intent (including those in which it was absent). Both patients for whom the index episode constituted a repeat episode and those for whom it was the first-ever episode of DSP were included. Patients who were intellectually or developmentally disabled, suffering from psychosis, or non-Norwegian speaking were excluded, as were patients admitted for accidental medication overdoses.

Procedures. The medical staff at the hospital recruited the DSP patients to participate in the study. Each patient completed a questionnaire (see below), with the majority completing this within the day following hospital presentation. If necessary trained health personnel who were not involved in patients' clinical care assisted the patients in completing the questionnaire (e.g., patient did not have glasses).

Assessment

Questionnaire data.

Suicidal intent. Suicidal intent was measured by use of three single item variables from the Suicide Intent Scale (SIS; Beck, Schuyler & Herman, 1974), adjusted so as to be amenable to self-report. The dependent variable of interest was the patients' self-reported suicidal intent at the time of DSP and how they appraised their suicidal intent for this index episode at follow-up. Self-reported suicidal intent was used rather than the objective circumstances of the episode (e.g., place the act took place), as it is likely that the former is more subject to bias than the latter. Patients' subjective experience of suicidal intent was measured by the following three items from the section of the SIS to do with their feelings and thoughts: 1) **perceived likelihood of dying** (ranging from 1 'Not at all likely' to 5 'Very likely'), 2) **wish to die** (6 response options ranging from 'Did not wish to at all' to 'Wished to very strongly'), and 3) **whether or not the episode was considered a suicide attempt**

‘yes’ or ‘no’). These items were assessed at the time of the episode and retrospectively at three and twelve months. They were treated as discrete outcomes and analysed as three separate outcomes.

Depression. Depression was assessed using the Beck Depression Inventory Short Form (BDI-SF), which is a 13-item measure of level of depression, items ranging from 1 to 4 with 4 being the most severe (Furlanetto, Mendlowicz, & Romildo Bueno, 2005). This questionnaire was used t1, t2 and t3. For each subject we calculated their mean depression level at all three time points.

Hospital data.

Lethality. Lethality of the index DSP episode was rated by three experienced clinical toxicologists who evaluated it using a 4-point scale of estimated untreated consequences of the act (death, death probable, death unlikely, certain to survive; Haw et al., 2003; Kessel, 1965b). This evaluation was based partly on clinical judgment, medical notes (including information about patients’ weight) and information from the patients and partly on laboratory findings (i.e., blood analyses) where necessary. This information was obtained following the standardised structure used in the hospital for medical notes. All medical information was made systematically available to the raters. In making judgements the clinicians took account not only of the amount of drug ingested but also any alcohol consumed in the episode, age as well as physical health (including any chronic physical conditions). The clinical toxicologists were not involved in the clinical care of the patients and were blind to patients’ self-reported suicidal intent as well as to psychiatric status and psychiatric medical records. As the nature of clinical judgements about risk of physical outcome may vary, we deliberately chose to have three experienced clinician assessors rather than two, thereby enabling us to establish a median which has the chance of more accurately reflecting the likely outcome. Inter-rater reliability between the three toxicologists assessing

lethality was assessed using a two-way agreement intra-class correlation (Hallgren, 2012) to assess the degree that the experts provided consistency in their ratings of lethality across subjects. We used the median of the toxicologists' ratings to create a combined expert rating for each individual which was used for analysis, similar to the method used by Haw and colleagues (2003) and Kessel (1965b).

Registry data

Cause of death. Information about cause of death for participants dying during the 12 month follow-up was obtained from the Cause of Death Registry by matching personal ID number with registered deaths. The registry, operated by the Division for Health Statistics in Statistics Norway, provides underlying and contributing causes of deaths for all individuals who at the time of death were listed in the National Population Register of Norway, i.e., independently of whether the person died in Norway or abroad. Causes of death are classified according to the International Statistical Classification of Diseases and Related Health Problems coding system, tenth revision (ICD-10). The causes of death are determined on the basis of medical death certificates sent to Statistics Norway by public health officers as well as data from a wide range of other registries (e.g., The Cancer Registry of Norway, Statistics Norway, statistics on road traffic accidents and the results of autopsies from hospitals and forensic laboratories).

Statistical analyses

The association between subjective experience of suicidal intent and lethality involved testing the independence of two categorical variables. The usual chi-squared test of independence between categorical variables was not valid because there were too many cells with expected values less than 5. Therefore p-values were computed using Monte Carlo simulation (Hammersley & Handscomb, 1975). Under the null hypothesis of independence

100,000 simulated data sets were produced for each table and their corresponding Pearson's statistics were calculated. Missing values were excluded in the calculations of p-values. All analyses were carried out using R version 3.1.2 (R Core Team, 2013).

Ethics

The study was approved by the East Regional Ethics Committee, the Privacy Ombudsman for Research as well as the Data Inspectorate. Written informed consent was obtained from all participating patients before entry to the study.

Results

Sample population

Of the 117 potentially eligible patients, 89 patients agreed to participate, yielding a 76.1% recruitment rate. Nearly two-thirds ($n = 63$; 70.8%) were female. Baseline characteristics are given in Table 1.

Table 1 here

Lethality

Table 2 displays the distribution of ratings across the four levels of lethality for each rater. The intra-class correlation between the three toxicologists was 0.69, from which we can conclude that there was good agreement between them, based on the cut-offs for qualitative ratings of agreement by Cicchetti (1994).

Table 2 here.

Relationship between suicidal intent and lethality for the index episode

Table 3 depicts the three toxicologists' ratings of lethality relative to the patients' perceived likelihood of dying, patients' wish to die and whether they considered the index episode a suicide attempt, reported at t1, t2 and t3. The Table shows the number of subjects (i.e., counts) in each category of perceived likelihood of dying, split by the expert opinion on the lethality of the episode. For example, at the time of the index episode, 22 participants perceived their likelihood of dying as category 2 (i.e., 'somewhat unlikely') and the toxicologists rated these participants' index episodes as 'Death unlikely'. As shown in the p-values provided in the Table, the experts' ratings of lethality were significantly associated with the patients' ratings of likelihood of dying at t1, although not very strongly ($p = 0.04$), but not at t2 and t3. As shown in Table 3, there was no significant association between lethality as expressed by experts and perceived likelihood of dying at either t2 ($p = .23$) or t3 ($p = .40$).

Table 3 here.

The second section of Table 3 depicts the toxicologists' ratings of lethality of the index episode by patients' wish to die associated with the index episode reported at t1, t2 and t3. This section shows the number of subjects (i.e., counts) in each category of wish to die, compared to the expert opinion on the lethality of the episode. For example, at the time of the index episode, 19 participants reported their wish to die associated with the episode as category 2 (i.e., 'wished to somewhat') and the toxicologists rated these participants' index episodes as 'Death unlikely'. Moreover, as shown in the table, 15 of the 24 patients reporting a very strong wish to die at t1 engaged in medically non-serious DSP, whilst the episodes for the remaining 9 patients in this group were rated as medically serious or lethal by the toxicologists. Patients' wish to die and expert ratings of lethality of the index episode were

significantly associated at t1, but not at t2 and t3. There was no significant association between wish to die and expert ratings of lethality and wish to die at three and twelve months.

The third section of Table 3 depicts the toxicologists' ratings of lethality of the index episode by whether the patients considered the DSP to have been a suicide attempt. As this section shows, 42 of the 57 participants reported considering the episode a suicide attempt at t1, and the toxicologists rated these participants' index episode as either 'Certain to survive' (6) or 'Death Unlikely' (36). Lethality of the method as assessed by the toxicologists was not predictive of whether the patients perceived the episode as a suicide attempt or not at the time of the episode (t1), nor at t2 and t3.

The relationship between lethality and suicide

During the twelve month follow-up period, three patients died by suicide, of which two had provided data on suicidal intent associated with the episode. The lethality of their DSH episode was considered to be high by the three toxicologists, and for the two subjects with information, their own reports of the episode were in the higher categories of wish to die and likelihood of death, and they classified it as a suicide attempt (see Table 4).

Discussion

We have investigated the association between toxicologists' assessments of potential lethality of DSP episodes and patients' self-reported suicidal intent at the time of the episode and whether this association changes as patients re-appraise their suicidal intent associated with the index episode at three and twelve months follow up. This is important because it adds to our knowledge regarding how method of self-harm relates to patients' intentions and provides information relevant to clinicians' interpretations of patients' reports of their self-harm, both

at the time and historically. One previous study has indicated that high suicidal intent predicted medically more severe episodes when patients had an accurate expectation about the medical consequences of self-harm (Brown, et al., 2004). We were particularly interested in whether patients' perceived likelihood of dying from the episode was more strongly associated with lethality compared to other aspects of subjective experience of suicidal intent, i.e., wish to die and whether or not the aspect was considered a suicide attempt.

With the exception of a significant association between lethality of the DSP episode and both perceived likelihood of dying and wish to die at t1, our findings showed a disconnection between lethality of a DSP episode and suicidal intent across all time points. Lethality was not associated with whether or not patients considered the act to be a suicide attempt at t1, and was not associated with any of the three suicidal intent variables at three and twelve months following the index episode. Patients reporting a strong wish to die at t1 varied considerably in terms of lethality of their DSP episodes. In keeping with the findings of Vlad and colleagues (2011) there was a tendency for patients with a strong wish to die to engage in medically non-serious behaviour as well as for the majority of patients to overestimate the likelihood of dying from their acts, although neither finding was significant.

What could explain the discrepancy between the different ways in which the various suicidal intent variables relate to the lethality of the act? On the face of it, there is no obvious reason why one aspect of suicidal intent as reported at the time of the episode (i.e., wish to die or perceived likelihood of dying) would be more aligned with behavioural enactment (i.e., lethality) than other aspects of suicidal intent at t1 (i.e., whether the episode is considered a suicide attempt). Perceived likelihood of dying and wish to die may depend on a person's perceived capacity to act on these emotions and thus serve as a proxy for suicidal capability (Joiner, 2005). Whether or not the act was considered a suicide attempt might be more transient, and given what we know about the wide range of motives for acts of self-harm

(Hjelmeland et al., 2002) people might be more ambivalent about subscribing to having made a suicide attempt.

Why then does the association between lethality and wish to die and perceived likelihood of dying not remain significant over time? This is perhaps even more striking given that lethality and patients' perceived likelihood of dying could be seen as potentially overlapping. It is possible that subscribing to having engaged in behaviour one expected or wished to die from has a negative impact on patients' self-identity and emotional history to the extent that this is de-emphasised over time, and hence that the link with lethality becomes correspondingly weaker. There are several possible causes for the lack of association between suicidal intent and lethality, including recall bias and memory decay. In another paper, we have reported on the strong association between depressed mood at the time of looking back at previous episodes of self-poisoning (Gjelsvik, Heyerdahl, Holmes, Lunn & Hawton, submitted). This may in part explain why we found no agreement between ratings of lethality at t1 and patients' self-report at follow-up.

The disconnection between lethality and subjective experience of suicidal intent suggests that patients' intention at the time of the act has little bearing on the lethality of their DSP. Of course, these results are only based on episodes of DSP, and it is known that DSP patients often have little awareness of the relative toxicity of different methods of self-poisoning (Myers, Otto, Harris, Diaco, & Moreno, 1992). The association between intent and lethality may be more marked for more diverse methods of self-harm (Liotta, Mento, & Settineri, 2015; Rimkeviciene, O'Gorman, & De Leo, 2015). However, our findings question the intent-lethality association that is the cornerstone of some suicidological terminology as well as a widespread clinical notion. They also raise the question as to whether the difficulty, noted by a wide range of suicidologists (Beck, Beck, & Kovacs, 1975; Kessel, 1965b; O'Carroll, et al., 1996; Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007a, 2007b), in

establishing a consistent nosology of disparate self-harm categories may reflect not so much poor terminology as a group of behaviours that do not easily lend themselves to clear-cut categories. This supports the use of ‘deliberate self-harm’ as an overarching term for the behaviour within which various dimensions can be defined (e.g., subjective experience of suicidal intent, other motives/reasons, lethality) (National Institute for Health and Clinical Excellence, 2011; Hawton, Zahl, & Weatherall, 2003, Kapur, Cooper, O’Connor, & Hawton, 2013).

Because treatment and preventive interventions derive from identification of subgroup characteristics, the concept and classification of intent and lethality as well as understanding the association between them have significant implications for clinical practice. A wide range of studies have demonstrated that health professionals’ attitudes to patients engaging in DSH are often negative, particularly for medically non-serious episodes, whereas people engaging in medically severe episodes are treated more sympathetically (Saunders, Hawton, Fortune, & Farrell, 2012). The mixed findings regarding whether people experiencing high suicidal intent make medically serious episodes and vice versa as well as the fact that seemingly less lethal methods may still lead to death or serious injury (e.g., ingestion of paracetamol, i.e. acetaminophen) indicate that a dualistic view (i.e., high versus low intent) of the behaviour as a basis for risk assessments is simplistic and probably misleading.

The proportion of patients dying from suicide during the one year follow-up is in keeping with proportions reported in previous systematic reviews of fatal repetition of self-harm (Owens, Horrocks, & House, 2002; Carroll, Metcalfe, & Gunnell, 2014). While we found that higher lethality was associated with subsequent suicide, the number of patients involved was small and therefore this finding needs to be treated with considerable caution. What can explain the discrepancy between suicidal intent and medical severity of DSP? The gap is in keeping with the intention-behaviour gap found in health psychology in general

(O'Connor, 2011). It is not obvious why suicidal intent and associated DSP acts should operate differently than other intention-behaviour gaps observed in health psychology. Indeed, in his integrated motivational-volitional model for suicidal behaviour, O'Connor (2011) advocates a stronger focus on the factors (volitional moderators) increasing the likelihood that low mood (including suicidal intent) translates into subsequent DSH (O'Connor, 2011). The linear quality of the relationship between suicidal intent and DSH implied in parts of the literature as well as in current terminology implies that suicidal intent in itself gives rise to suicidal acts. Our findings do not support such a notion. An important clinical implication of our findings is that clinicians cannot derive lethality from suicidal intent and vice versa, and thus that lethality and suicidal intent should be considered as largely separate dimensions of self-harm.

Our findings highlight the need for research identifying volitional moderators and their role in translating intentions to acts. An increased understanding of volitional moderators could shed light on why individuals can ingest highly toxic substances whilst at the same time report low levels of suicidal intent, and vice versa, and emphasises the role of context in interpreting the wide differences globally in case-fatality from DSH behaviour. The degree to which the various aspects of suicidal intent are associated with each other and together serve as a meaningful proxy for psychological severity of the act awaits further scrutiny. Moreover, research is warranted to elucidate whether a history of repeat episodes of self-harm has a bearing on the perception of the likelihood of dying from the act, relative to individuals with no prior history of self-harm.

Limitations

It is possible that patients may have picked up cues about lethality at the hospital influencing their assessment of perceived likelihood of dying (e.g., the fact that they required certain

medical treatments, comments from health personnel). The current study was relatively small to investigate subsequent death by suicide. Finally, we were unable to include patients who did not present to hospital for DSP.

Conclusions

A strength of this study was that assessment of lethality and suicidal intent did not overlap and that lethality ratings were made blind to patients' suicidal intent, thereby avoiding the overlap between lethality and suicidal intent likely to have been a problem in interpreting results from several previous studies. Moreover, due to the longitudinal design, we were able to investigate temporal stability in the association between lethality of a DSH episode and patients' reappraised suicidal intent at follow-up. An important clinical implication of our findings is that clinicians cannot assume that suicidal intent reported for previous crises necessarily has any bearing on the lethality of past self-poisoning episodes. While patients' wish to die and perceived likelihood of dying may show some initial association with lethality of DSP this disappears over time. This is important, as lifetime worst-point intent and lethality of previous DSH episodes has been found to be better predictors of repeat DSH episodes than intent and lethality of the most recent DSH episode, even when taking number of past DSH episodes and methods used into account (Sapyta et al., 2012). Clinicians should bear the fact that lethality and suicidal intent are separate dimensions in mind during clinical assessment, especially regarding historical information.

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Table 1: Baseline Characteristics of Sample

	Mean (sd) or N (%)	Number with missing information
Age	36.5 (14.6)	0
Sex, male	26 (29)	0
Depression at t1	2.29 (0.59)	26
Depression at t2	2.01 (0.71)	21
Depression at t3	1.90 (0.67)	24
Index episode was first DSH	23 (26)	6
Marital status		3
- <i>married</i>	16	
- <i>not married</i>	53	
- <i>divorced/separated</i>	16	
- <i>widowed</i>	1	

Table 2: Distribution (% (n)) of lethality ratings across the 4 levels of lethality, by rater

<i>Lethality Rating</i>	<i>Rater I</i>	<i>Rater II</i>	<i>Rater III</i>
Certain to survive	15.7 (14)	27.0 (24)	11.2 (10)
Death unlikely	61.8 (55)	46.1 (41)	66.3 (59)
Death probable	14.6 (13)	20.2 (18)	14.6 (13)
Death certain	7.9 (7)	6.7 (6)	7.9 (7)

Table 3: Expert rating of lethality (1-4) at t1 compared to patients' perceived likelihood of dying (1-5) and wish to die (1-6) associated with the index episode, and whether the index episode was considered a suicide attempt, at times t1, t2 and t3

Patient's perceived likelihood of dying	Expert rating ¹											
	Index (t1)				Month 3 (t2)				Month 12 (t3)			
	1	2	3	4	1	2	3	4	1	2	3	4
Not at all likely	2	10	2	1	2	8	1	0	2	12	1	1
Unlikely	5	22	0	0	2	18	0	0	1	13	1	0
Somewhat likely	1	8	0	1	0	6	3	0	3	8	1	0
Likely	1	7	4	2	1	8	1	0	0	6	2	1
Very likely	0	10	6	2	3	12	5	2	2	10	6	1
NA	0	4	0	1	1	9	2	5	1	12	1	4
p-value for association	0.04				0.23				0.40			

Patient's wish to die	Expert Rating ¹											
	Index (t1)				Month 3 (t2)				Month 12 (t3)			
	1	2	3	4	1	2	3	4	1	2	3	4
Did not wish to die	0	5	0	1	2	10	1	1	2	11	0	1
Wished to somewhat	0	19	0	0	2	8	1	0	0	5	2	0
Wasn't bothered either way	3	7	2	0	0	5	0	0	1	4	0	0
Wished to quite strongly	4	8	0	1	1	5	1	0	2	11	0	0
Wished to strongly	1	6	4	1	0	9	0	0	1	4	2	0
Wished to very strongly	1	14	6	3	3	16	7	2	2	15	7	2
NA	0	2	0	1	1	8	2	4	1	11	1	4
p-value for association	0.01				0.69				0.50			

Suicide attempt	Expert rating ¹											
	Index (t1)				Month 3 (t2)				Month 12 (t3)			
	1	2	3	4	1	2	3	4	1	2	3	4
No	3	21	1	0	4	16	1	1	4	16	2	1
Yes	6	36	10	5	4	37	10	2	4	34	9	2
NA	0	4	1	2	1	8	1	4	1	11	1	4
p-value for association	0.12				0.29				0.56			

¹Expert rating: 1 = certain to survive; 2 = death unlikely; 3 = death probable; 4 = death certain

Table 4: Suicide during follow-up

Age	Gender	Likelihood of dying at t1	Wish to die at t1	Attempt at t1	Expert 1	Expert 2	Expert 3
57¹	female				2	2	3
81	male	4	5	yes	4	4	3
64	female	3	4	yes	4	4	4

¹ This participant only consented to registry follow-up, and self-reported likelihood of dying and wish to die at t1 are therefore missing