

A Pilot Investigation of the Operationalized Predicaments of Suicide (OPS) Framework

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Abstract

Background: Suicide may be conceptualized as an escape from intolerable predicaments, in particular, mental illness and environmental stressors. The operationalized predicaments of suicide (OPS) is a 4 category framework designed to assist in the classification of suicide. The objective was to examine whether this framework is potentially useful.

Method: 18 psychiatrists from 6 different countries examined 12 written coroners' reports of suicide and rated each report according to the OPS. 16 of these raters then also completed a qualitative questionnaire regarding the framework.

Results: In 89.8% of cases the raters were able to make a decision regarding the drivers which led to the suicides. The respondents displayed modest inter-rater correlation (Kappa = 0.42; $P < 0.0001$). In the qualitative section, respondents supported the face validity of OPS and considered it potentially useful. Feedback allowed improved wording of the OPS instructions.

Conclusion: The OPS has potential as a useful framework. The OPS instructions have been improved and further studies are justified.

Keywords: mental health, suicide, public health, social medicine

Introduction

Suicide accounts for 1.5% of all deaths and is the tenth leading cause of death worldwide (1), but remains incompletely understood. Suicide occurs more commonly in people with mental illness than people without mental illness, and the life-time risk of suicide for people with major depression is around 3%–4% (2). However, suicidality is distinct from depression (3) and adverse life events increase the suicide risk, independent of any mental illness (4,5).

Shiner et al. (6) recommended coroners' reports as a "reasonable basis" for research focused on understanding the social circumstances of suicide, and Scourfield et al. (7) concluded that they "offer an opportunity for suicide research". The duties and procedures of coroners differ, to some extent, from one jurisdiction to another. However, throughout Australia, reportable deaths are examined in a similar manner and with the

highest care and integrity. They have been used in quality suicide research (8,9).

In keeping with a diversity of perspectives in the literature, our group has published the view that suicide can be conceptualized as an escape from intolerable predicaments or stressors (10). We have identified the 2 main types of intolerable predicaments, 1 is untreated or unresponsive mental illness, and the other is environmental or non-mental illness stressors (11).

The operationalized predicaments of suicide (OPS) is a simple classification system devised by the authors to differentiate such concepts. It is based on observations in the literature that mental illness (12,13) and environmental stressors (4,5) may separately trigger suicide; it also allows those stressors to be combined (a common clinical observation).

The present study seeks to determine whether

the OPS may be a useful or safe framework for suicide research. The aims of the current pilot study: (1) to apply the OPS to the classification of actual coronial reports by an international sample of highly experienced psychiatrists, (2) to explore inter-rater consistency of ratings, (3) and to obtain qualitative comments on the application of the framework.

Subjects and Methods

Ethical approval

As a preliminary exploration of a clinical concept with clinicians, this pilot study was deemed a quality assurance exercise and did not require ethics committee approval. The cases were publicly available on the web.

OPS

OPS is an arrangement of 4 categories, which may assist in the conceptualization and classification of triggers or drivers of suicide. The full details are presented in Appendix 1, a summary appears below:

- Category A (Cat A) distinguishes situations in which mental illness is likely a key trigger.
- Category B (Cat B) identifies situations in which social or environmental factors are likely to be a key trigger.
- Category C combined (Cat C) distinguishes situations when both mental illness and social or environmental are the key factors.
- Category U unclassifiable (Cat U) identifies situations when none of the above triggers is evident, or the information is insufficient or contradictory.

Respondents

18 psychiatrists (12 male, 6 female; with an average of 18.1 years of clinical experience) from 6 countries (Brazil = 1, Nepal = 1, Israel = 1, New Zealand = 1, Malaysia = 5, Australia = 9; see Acknowledgements for details) were recruited from among the scholarly contacts of the first author. All were in current clinical practice, half with teaching or research duties. All respondents were purposively recruited by email through the contacts of the first author and self-selected. They were invited and agreed to give their time to the enterprise.

Materials: Coroner's reports

In recognition of confidentiality requirements pertaining to coroner's reports, this pilot study was based entirely on de-identified reports freely

available on the internet. 24 reports of completed suicide were identified, from Australian sources (limiting the sources to 1 country prevented international variation in reporting processes and formats). The first author reviewed all these reports and found that since coroners tend to publish findings that have relevance to the public interest, the sample disproportionately comprised suicides in custody. This study focused on whether experienced psychiatrists could agree on the main trigger or driver of a particular suicide. Accordingly, 12 reports were selected (South Australia = 5, Tasmania = 4, Queensland = 2, and Victoria = 1) which appeared (in the view of the first author) to involve a range of trigger or drivers; including mental disorder, social or environmental stressors, and some cases in which the trigger or drivers were ambiguous or unknown. (See Appendix 2 for web-addresses).

Procedure

All respondents were individually recruited and responded by email. They were provided with Appendix 1. This document advises responders to read the 12 coroner's reports of completed suicide and to rate each report using 1 of the 4 OPS categories listed above. It was not possible to train the participants face-to-face on how to use the OPS because of their different geographic locations.

The quantitative component of the study comprised of the categorization of the cases by the respondents. Each respondent returned their responses and were tabulated for analysis. The qualitative component of the study commenced when the completed OPS task was returned; each respondent was provided with a follow-up questionnaire regarding the nature and value of OPS. Each respondent was asked to address 9 questions about the framework. They registered a response to each question on a 4-option scale, and were also invited to make comments.

In brief, these follow-up questions touched on the usefulness of the OPS in the study of suicide, acceptability and appropriateness of concepts, and face validity of the framework. It also explored the suitability of coroner's reports in this task, including ambiguity, missing information, completeness of information, and suggestions for dealing with such information in future research. Qualitative analysis on the responses was undertaken independently by the authors to examine for recurring themes.

Each rater was codified by an assigned letter of the alphabet from A to R, and Minitab

15 statistical software (Minitab Inc., State College PA, USA) was used to calculate inter-rater (Fleiss' kappa) and percentage of overall agreement between the raters to ascertain trends and agreement in thought for each case and for all 12 cases.

Results

Quantitative

18 participants scored 12 cases (using coroners' reports and OPS) for a total of 216 decisions (Table 1). For the majority of decisions ($n = 194$, 89.8%), a classification could be made (Cat A, B, or C); and 22 decisions (10.2%) were that a classification could not be made (Cat U). Of the 194 ratings for the classifiable cases, just under half of the total ratings ($n = 87$, 44.8%) were attributed to a solely mental illness cause (Cat A), about one-third were an environmental cause (Cat B) ($n = 68$, 35.1%), and the remainder fifth fell into the combined mental illness and environmental causes category

(Cat C) ($n = 41$, 19.0%).

For 7 cases (cases 2, 5–8, 10–12; 66.7%), between 1 and 6 participants (8.3%–50.0%) could not classify each case; and 5 cases (1, 3, 4, 9; 33.3%) were found classifiable by all 15 (100%) participants.

The overall percent agreement was determined to be 59.3% and statistical analysis using the Fleiss' Kappa statistic for inter-rater reliability was calculated to be Kappa = 0.42 ($P < 0.0001$), 95% CI (0.39, 0.45). When looking at each category separately, Category B received the highest inter-rater reliability statistic with Kappa = 0.70 ($P < 0.0001$), 95% CI (0.65, 0.75). Category U had by far the lowest with Kappa = 0.08 ($P = 0.0002$), 95% CI (0.04, 0.13). Table 2 summarises the inter-rater reliability for each category.

Qualitative follow-up

After rating the cases, 15 of 18 respondents (83.3%) chose to answer a follow-up questionnaire. From this, it appeared that most of

Table 1: The rating of 12 cases by 18 psychiatrists (A to R). Cat A, mental illness only; Cat B, social or environmental stressors only; Cat C, both mental illness and social or environmental stressors; and Cat U, unclassifiable (any reason)

No.	Cat A	Cat B	Cat C	Cat D
1	C,D,E,J,L,Q,R		A,B,F,G,H,I,K,M,N, O,P	
2	B,D,E,G,H,K,O,Q		L,N,P	A,C,F,I,J,M,R
3	A,B,C,D,E,F,G,I,K, L,M,O,P,Q,R		H,J,N	
4	A,M,O,Q	C,J,L,R	B,D,E,F,G,H,I,K,N,P	
5	N	A,B,C,D,F,I,J,K,L, M,O,P,Q,R	E	G,H
6	A,B,D,E,F,G,I,L,M, N,O,P,Q,R			C,H,J,K
7		A,B,C,D,E,F,G,H, I,J,K,L,M,N,O,P,Q		R
8	A,B,C,D,E,F,G,I,K, L,M,N,O,P,R			H,J,Q
9	C,D,E,G,J,K,L,M, O,Q	N	A,B,F,H,I,P,R	
10	A,B,C,D,F,G,J,K,L, M,O,P,Q		E,H,I,R	N
11			N,O	J,L
12		A,B,C,D,E,F,G,I,K, L,M,N,O,P,Q,R		H,J

Abbreviations: Cat A = Category A, Cat B = Category B, Cat C = Category C, Cat D = Category D.

Table 2: Inter-rater reliability statistics across the 4 OPS categories

Category	Kappa score	95% C.I	P-value
Cat A	0.41	0.36–0.46	< 0.0001
Cat B	0.70	0.65–0.75	< 0.0001
Cat C	0.24	0.19–0.29	< 0.0001
Cat U	0.08	0.04–0.13	0.0002
Overall	0.42	0.39–0.45	< 0.0001

Abbreviations: Cat A = Category A, Cat B = Category B, Cat C = Category C, Cat D = Category D, OPS = operationalized predicaments of suicide.

the respondents (12 of 15) found the OPS useful in the study of suicide. Comments included that it was consistent with clinical practice, *“it reflects ‘categories’ seen in regular clinical practice”*, and assisted in conceptualising suicide other than as a consequence of psychopathology. The majority of respondents (14 of 15) found the concepts underpinning OPS as to be acceptable. Most (10 of 15) respondent psychiatrists noted that the 2 main descriptor types were sufficient for categorising the 12 pilot coronial case reports. Comments reflected that respondents had some questions over the diagnosis and severity or the extent of a mental disorder as described in the reports, and the effect this might have in identifying a descriptor. All respondents found the OPS had face validity, *“It definitely has conceptual face validity”*. The OPS was noted as consistent with psychiatrists’ clinical experience, *“I do agree as it does reflect (at least my) daily clinical practice experience”*.

When asked about ambiguity around concepts and classification in the OPS, responses were far less consistent. Despite finding the OPS useful in the categorisation of completed suicide reports, respondent psychiatrists clearly experienced some ambiguity in applying the framework to coronial reports. In their written responses, they noted that a concern was missing information, or a lack of detail on issues relevant to make professional judgements, *“Coroner’s reports are not limited in what they put in. It is what they leave out that makes the greatest difference of all”*. Questions 6 and 7 addressed the issue of potentially missing information from coronial reports of completed suicides. Nearly all respondents said that in instances where they perceived insufficient information they chose an “unclassifiable” category, *“I think it best not to make any assumptions about information”*. About half of the respondents indicated the potential value of rules or guidelines for dealing

with potentially missing information (6 ‘Yes’, 4 ‘Possibly’). Despite their reservations about missing information, nearly all respondents (13 of 15) expressed confidence in coroner’s reports as useful in the study of suicide, *“I think they’re ideal because they are thoughtfully written, by intelligent laypeople who are relatively untainted by psychobabble”*. The majority of respondents also saw the value in some relative rating of the comprehensiveness of information provided in the respective reports for this purpose (12 ‘Yes’, 3 ‘Possibly’). In summary, responses to the qualitative follow-up questionnaire supported the consistency in respondent ratings and validity of OPS.

Discussion

This pilot study of the application of the OPS framework was encouraging. It provided some indication of the benefit of clearly differentiating between social or contextual and mental illness aetiologies in understanding suicide, which is consistent with the literature and clinical experience of the respondents and authors. The OPS framework, therefore, suggests substantial validity as a tool to understand the etiology of suicide.

According to the guidelines (14), the inter-rater reliability was deemed moderate at Kappa = 0.42 with the best agreement observed in Cat B. However, this moderately-low reliability index is perhaps more dependent on the actual raters themselves rather than an intrinsic problem with the scale (15). This certainly indicates a degree of ambiguity of the task or categories in the OPS, which was also borne out in the qualitative follow-up responses. Cat B received the highest inter-rater agreement of the 4 categories, suggesting that the OPS scaffold was effective amongst the raters when it came to identification of environmental influences

on suicide cases. Conversely, Cat U received a poor level of agreement implying a high level of subjectivity and variability overall and for each case. This is also a mark of the significant interpretation differences for each case, despite the basic framework of OPS.

With the benefit of the qualitative feedback obtained during this study, slight adjustments have been made to the OPS Instructions and terms (and are reflected in Appendix 1). For example, 1 participant suggested that the term 'mental illness' be used in preference to 'mental disorder', noting that mental illness is generally regarded as having a tighter definition. It is anticipated that incorporation of suggestions and further refinement will increase the inter-rater reliability in future applications.

There was agreement that the absence of details about the mental health or environmental circumstances of the deceased in the reports led to some uncertainty (whether absent information should be taken as meaning no important information had been overlooked). Accordingly, the OPS instructions have been revised to the effect that absent information should not automatically be taken to indicate no such important information existed, but that when a report is generally comprehensive, the rater may judge it safe to interpret the absence of information as meaning no important information has been overlooked.

There was strong agreement that coroners' reports are potentially useful in the study of suicide, and that in addition to assessing the information available from coroners' reports, that there would be an advantage in participants rating each report with respect to quality (which could be the basis of further avenue of research). This was in agreement with the opinions of workers in the field from the previous studies by Shiner et al. (6) and Scourfield et al. (7).

The cases for examination were selected according to content rather than a random process. As stated, these were publicly available reports (obviating confidentiality concerns) and needed to be individually selected because their publication was designed to serve the public good, and a particular emphasis was placed on certain types of cases (such as the deaths of males in custody). Content selection was not seen as a concern, however, as this study is not focused on the proportions of cases meeting particular criteria. Instead, it is focused on OPS. Cases were selected by the first author to reflect various sets of circumstances: apparent mental disorder, apparent social or environmental

stressors, community and custody situated. What proportions of cases meet the various classification criteria is a matter for a random or complete sample study, which is in preparation.

Limitations of the pilot study include that face-to-face training in the OPS was not possible, due to the different geographic locations of the participants. On occasions, participants made comments which were at variance with the rating they made, indicating that in some instances, understanding of OPS was not complete. However, there was broad agreement in the classification of cases and qualitative feedback. Given that over half the participants had English as a second or third language and that face-to-face training was not possible, this broad agreement suggests the OPS has the advantages of simplicity and utility.

In this pilot study, the OPS has face validity and moderate inter-rater reliability, and highlights the notion that suicide can be triggered or driven by either both of mental illness and social or environmental stressors. Its potential usefulness in future studies of suicide is supported by the opinions of a cosmopolitan group of participants. The wording of the instructions for OPS has been improved, which is intended to improve reliability for future applications.

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Authors' Contribution

Conception and design, analysis and interpretation of the data, drafting of the article, critical revision of the article for important intellectual content,

final approval of the article, and provision of study materials or patients: SP

Analysis and interpretation of the data, critical revision of the article for important intellectual content, statistical expertise: PK

Final approval of the article, statistical expertise, and collection and assembly of data: AL

Conception and design, drafting of the article, and critical revision of the article for important intellectual content: SR

Conception and design, analysis and interpretation of the data, and drafting of the article: ZAM

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Appendix 1

Operationalized predicaments of suicide (OPS)

Instructions

OPS is an experimental method of classifying suicide. It is investigating the concept that suicide represents an escape from painful predicaments. 2 main predicaments have been described, (1) untreated or unresponsive mental illness, and (2) social or environmental stressors.

In this application of the OPS to 12 coroners' reports of completed suicides, we are asking you to assign each of the attached reports to one of the following categories. In many reports, some information you may desire will be absent. Absent information should not automatically be taken to indicate no such important information existed (that is, it may have existed but not been reported). However, given the nature of the coronial process, when the report is generally comprehensive, you may judge it safe to interpret the absence of information as meaning no important information has been overlooked.

Framework

Category A

A mental illness is clearly or probably present, and probably played a major role in triggering the suicide.

No environmental or social (non-mental illness) stressor played a major role.

Category B

An environmental or social (non-mental illness) stressors is clearly or probably present, which probably played a major role in triggering suicide.

No mental illness played a major role. For current purposes, terminal illness and intractable pain are considered as 'external' stressors.

Category C (combined)

Mental illness and environmental or social (non-mental illness) stressors are both present, and both probably played a role in triggering the suicide. In these circumstance it is difficult to decide which (if either) was the main trigger for the suicide. If the influence of one is clearly predominant and the other is clearly trivial, another category may be chosen.

Category U (unclassifiable)

There is insufficient or contradictory information. Also, if there is no evidence for either mental illness or environmental or social (non-mental illness) stressor, this is the appropriate designation. Category U can be used when dealing with uncertainty.

Appendix 2

Case access details

Case 1. Magistrates court of Tasmania record of investigation into death. http://www.magistratescourt.tas.gov.au/decisions/coronial_findings/i/2008_tascd_106_-_intentional_firearm [accessed on September 1, 2011].

Case 2. South Australia findings of inquest. http://www.courts.sa.gov.au/courts/coroner/findings/findings_2000/graetz.finding.htm [accessed on September 1, 2011].

Case 3. Queensland courts office of the state coroner findings of inquest. http://www.courts.qld.gov.au/__data/assets/pdf_file/0011/86591/cif-partridge-pb-20051222.pdf [accessed on September 1, 2011].

Case 4. Magistrates court of tasmania record of investigation into death. http://www.magistratescourt.tas.gov.au/decisions/coronial_findings/h/holloway,_maxine_frances_-_2011_tascd_125 [accessed on September 1, 2011].

Case 5. South Australia findings of inquest. http://www.courts.sa.gov.au/courts/coroner/findings/findings_2000/hutchinson.finding.htm [accessed on September 1, 2011].

Case 6. Coroners court of Victoria redacted, http://www.coronerscourt.vic.gov.au/wps/wcm/connect/justlib/Coroners+Court/resources/d/8/d8fe51804661da829e229ed6abcobba5/VH_225410.pdf [accessed on September 1, 2011].

Case 7. Queensland courts office of the state coroner findings of inquest. http://www.courts.qld.gov.au/__data/assets/pdf_file/0007/86794/cif-miller-mj-20091209.pdf [accessed on September 1, 2011].

Case 8. South Australia findings of inquest. http://www.courts.sa.gov.au/courts/coroner/findings/findings_2009/Hope_Maria_Kate.pdf [accessed on September 1, 2011].

Case 9. South Australia findings of inquest. http://www.courts.sa.gov.au/courts/coroner/findings/findings_2003/gillies.finding.htm [accessed on September 1, 2011].

Case 10. Magistrates court of Tasmania record of investigation into death. http://www.magistratescourt.tas.gov.au/decisions/coronial_findings/n/nichols,_timothy_david_-_2010_tascd_387 [accessed on September 1, 2011].

Case 11. South Australia findings of inquest. These findings deal with 2 people (1 male, the other female) who took their lives using the same method. Only material pertaining to the death of the male was used in this study. http://www.courts.sa.gov.au/courts/coroner/findings/findings_2011/Morris_Julia_Hisae_and_Jast_Raymond_Glen.pdf [accessed on September 1, 2011].

Case 12. Magistrates court of Tasmania record of investigation into death. http://www.magistratescourt.tas.gov.au/decisions/coronial_findings/i/intentional_overdose_-_2006_tascd_104 [accessed on September 1, 2011].