Qualitative/Quantitative Research

Thematic categorization of coroners’ reports of Indigenous and non-Indigenous suicide using the International Classification of Functioning, Disability and Health

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Abstract: This study sought to explore whether using the structure of the International Classification of Functioning Disability and Health (ICF) for the thematic coding of coroners’ reports would provide insights into the array and relative importance of different influential factors in Indigenous and non-Indigenous suicide. A total of 411 coroners’ reports from the Northern Territory, Australia, were thematically analyzed according to an adapted ICF structure, using a process established by consensus across authors. Categorized statements were tallied and represented graphically. The ICF structure provided a meaningful way of categorizing factors. Key factors associated with suicide across both Indigenous and non-Indigenous cases comprised the following in order of frequency of identification by coroners. Environmental Factors, namely (a) alcohol and drug abuse, categorized under Products and technology and (b) conflict and relationship breakdown, categorized under Support and relationships. The other major factors were within the category Body functions and structures, namely (c) mental illness and mental health concerns, categorized under Mental functions. Substantial differences were evident between factors for Indigenous and non-Indigenous cases. An array of factors was associated with completed suicide, with considerable variability across populations. There were indications of the relative importance of environmental factors. Implications are noted for suicide prevention and the utility of the ICF in psychiatry and the study of suicide.

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Suicide is a leading cause of death worldwide and a particularly concerning public health issue. In Indigenous communities in the Northern Territory (Australia) the suicide rate is more than double that of non-Indigenous communities, and four times the national average (Pridmore & Fujiyama, 2009). Numerous factors have been proposed as contributing to suicide including, social (Durkheim, 1951), medical (Dorpat & Ripley, 1960; Scocco, Marietta, Tonietto, Dello Buono, & De Leo, 2000), environmental (Foster, 2011), predicament-related (Pridmore, 2009), and other factors. Likewise, numerous methods have been applied to study of suicide. Beyond statistical and epidemiological studies; in research which seeks to explore cases, psychological autopsy has been an important approach (Bertolote, Fleischmann, De Leo, & Wasserman, 2004; Scocco et al., 2000). While this method provides rich data, it may also be subject to selection bias, the confounding influence of extraneous variables, and poor standardization of assessment instruments (De Leo & Evans, 2004; Pouliot & De Leo, 2006). More recently, concerns over validity and reliability of information have led to a call to abandon psychological autopsies in some settings (Hjelmeland, Dieserud, Dyregrov, Knizek, & Leenaars, 2012). Computer assisted lexical analysis of coronial reports has been trialed (Kuipers, Appleton, & Pridmore, 2013) and found to be useful, but somewhat limited for in-depth interpretation.

Approaches using thematic and sociological analyses of coronial reports and findings have also been used (Scourfield, Fincham, Langer, & Shiner, 2012; Valle, Gosney, & Sinclair, 2008; Ward, Shields, & Cramer, 2011). While these studies have led to important new insights, there are also acknowledged limitations in such analyses. In this as in all research, the methods, conceptual frameworks and even research questions can influence the nature of factors identified (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). In particular, using these approaches, the classification structure (themes) can substantially influence the nature of the findings (Sandelowski & Barroso, 2002). While in some qualitative settings, where themes emerge from the data, this may be desirable; it may also lead to unintentional bias, and a failure to let the data speak in cases where the themes are generated by the researcher.

In response we sought to conduct a thematic coding of coroner’s reports, but to do so by applying a formally accepted, and widely adopted classification system to structure our thematic coding. We noted that psychiatry classification systems such as the DSM-IV (APA, 2000) may be strongly medically oriented, and may not accommodate numerous social and other dimensions of suicide, and that conversely, measures of social well-being may lack appropriate psychiatric and psychological dimensions. We noted that a highly useful framework based on a broad bio-psycho-social conceptualization, that portrays inter-related constructs of health conditions, is the World Health Organization’s International Classification of Functioning, Disability and Health (ICF) (WHO, 2001). The ICF is part of the WHO “Family of International Classifications”, which includes the International Classification of Diseases (ICD).

The ICF is a classification system aimed at supporting standardized identification and description of health and health-related domains (Üstün, Chatterji, Bickenbach, Kontanjsek, & Schneider, 2003). The ICF is reported to have application across cultures, to be etiologically neutral and to be applicable with any health condition (WHO, 2001). It has been used for conceptualizing and targeting interventions for patients with complex health conditions (Allet et al., 2007), for informing professional practice, and for facilitating research (Cerniauskaite et al., 2011). While it has not been extensively used in psychiatry (Álvarez, 2012), the ICF focuses on human functioning, a domain which has attracted some interest from psychiatrists in the region (Mellisp et al., 2011). The ICF would appear to have potential application and utility in psychiatry (Ávila, Cieza, Anaya, & Ayuso-Mateos, 2012), and cross-cultural psychiatry (Kastrup, 2011; Sjolorud, Kastrup, Montgomery, & Persson, 2009) (Figure 1).

The full form of the ICF includes a comprehensive coding system that provides a standard language for describing human functioning, disability and health. It comprises and defines a number of components, namely Body Functions, Body Structures, Activities and Participation as well as Environmental Factors (such as the physical, social, and service environment), and consists of numerous subsidiary chapters or categories within each. It also notes, but does not categorize Personal Factors (such as personality, age, culture and coping strategies). In the model overview (Figure 1), the ICF depicts a comprehensive model of health and functioning that can be used to conceptualize a variety of medical, health and welfare issues (Cerniauskaite et al., 2011; Resnik & Allen, 2007). On this basis, we sought to address the following questions:

1. Is the ICF framework suitable for categorizing suicide related data; and is this suitability...
reflected in the array of factors that can be identified?

2. Does the categorization of coroners’ reports using the ICF framework permit meaningful identification and summary of influential factors in Indigenous and non-Indigenous suicide?

Figure 1: The ICF model

Method

The design for this study involved the application of qualitative data analysis software to perform a structured thematic coding as well as quantitative tallying and calculations of percentages of a large number of coroner’s reports, using the ICF as the coding structure. Coroners’ reports were drawn from the national internet based data storage and retrieval system for Australian coronial cases, the National Coroners Information System (NCIS). All cases from the Northern Territory were selected in which the coroner had determined that the cause of death was a result of intentional self harm and where an electronic record of the coroner’s findings was available. Reports of deaths over the period of a decade, between July 2000 and December 2010 were included. In total, 411 cases were available and consisted of 198 Aboriginal and/or Torres Strait Islander cases and 213 non-Indigenous cases.

Electronic copies of coroner’s findings were imported into QSR NVivo 8 software (QSR, 2008) for qualitative data coding. Using the software functions of assigning codes to text, any information pertaining to factors which may have been associated with each suicide was coded according to the ICF coding structure (Appendix). In particular, issues which were specifically identified by the coroner as leading up to the person taking his or her own life were identified and coded against the ICF categories.

The process of coding to this structure entailed one researcher (JA) reading each report in its entirety and then identifying all text relevant to ICF concepts at the component level (Body Functions and Structures, Activities and Participation, and Environmental Factors), and also at the chapter or category level. To ensure quality and consistency, and as a verification of the accuracy of coding, the other two experienced researchers were provided with (a) randomly selected coded sections from five of the chapters (to validate the content of the data within chapters) and (b) the coding from five randomly selected reports (to validate the accuracy of coding of text to chapters). Consensus was established through discussion of points of agreement and disagreement to determine consistent coding principles.

Where a section of text pertained to more than one component or chapter, it was coded accordingly. As reflected in the coding structure, given the topic of our research, the mental functions chapter was specifically itemized to permit identification of issues relevant to brain and mental disorders (Appendix). Thus the current adaptation of the ICF involved focusing on relevant categories, however the structure of the categorization was not altered. For example alcohol and drug abuse are categorized under Environmental Factors (and not Personal Factors as some may interpret them), and mental illness and mental health concerns are categorized under Body Functions and Structures (which implies a biological view on mental health). We sought to make our categorization consistent
with the existing structure of the ICF. To maximize consistency in coding over time, files were analyzed year by year but not in chronological order, and the order of coding was alternated between Indigenous and non-Indigenous cases.

Ethics approval was obtained in keeping with NCIS requirements (Victorian Department of Justice – Human Research Ethics Committee (CF/10/3519), which included an additional Indigenous ethical review procedure).

Results

The following results, while applied to the context of Indigenous and non-Indigenous suicide in the NT, provide an indication of the potential connection between the ICF and suicide-related issues.

Thematic Coding to Components of the ICF

Coding of coronial reports at the ICF component level is depicted in Figure 2. This illustrates mention of relevant concepts across all reports, and may be seen as an ICF related representation of issues described in this sample. Figure 2 reflects coding according to case rather than frequency (that is, multiple instances of coding against one component are recorded once per report, but one report may be coded against more than one component if relevant information is present in the content of the report).

Figure 2. Percentage of Indigenous and non-Indigenous cases which include reference to major ICF components

This figure illustrates that in a substantial number of Indigenous and non-Indigenous case reports (49% and 79% respectively) there was mention of body functions and structures. It also reflects that environmental factors were mentioned in the majority of cases (98% and 88%). The relevant sections (chapters) that comprise these components are detailed below.

Activities and participation were not often mentioned in coroners’ reports, which suggests they were not directly reflective of the concerns of coroners. The emphasis given to this category may reflect the historical roots and flavor of the ICF, focusing on activities of people with disabilities and their participation in daily life.

Thematic coding to chapters under Body Functions and Structures

At the chapter level (Appendix), coding to Mental functions and/or structures of the nervous system was more frequent than for all seven of the other chapters combined. Since there were few instances of coding to other chapters, these were combined and are depicted under Other chapters (Appendix and Figure 3). This includes an array of instances of physical illness and injuries which may or may not have been related to the suicide, serious illnesses and evidence of previous physical injuries. Coroners’ descriptions of injuries caused by the suicide itself were not included (Figure 3).

Thematic coding to chapters under Activities and Participation

As noted above, this ICF component pertains to the engagement of the person (particularly persons with disabilities) in activities of daily living and their participation in such activities), these
components did not have great relevance to the subject matter. This was borne out in the coding.

Figure 3. Percentage of Indigenous and non-Indigenous cases which include reference to chapters within the ICF Body Functions and Structures components.

Thematic coding to chapters under Environmental Factors

The relative percentages of reports in which various chapters under the ICF Environmental factors component were mentioned, are depicted in Figure 4.

Figure 4. Percentage of Indigenous and non-Indigenous cases which include reference to chapters within the ICF Environment component.

As reflected in Figure 4, a key environmental factor was Products and technology (which includes the use or presence of substances such as alcohol or cannabis in the blood, or the presence of illegal and prescription drugs). Similarly, Support and relationship issues, (which includes conflict, arguments with spouses, relatives and others, support or lack thereof, by parents and partners, or the death of a friend or relative), were frequently mentioned in reports.

No issues were coded relating to the chapter Natural environment and human made change to the environment. Service systems and policies were mentioned in approximately 11% of coroners reports, noting problems with the legal and housing systems (n=45), and Attitudes of others towards homosexuality were mentioned in 3 cases.

Discussion

With regard to the first research question, the ICF proved to be a useful tool for categorizing such data with some limitations. The use of the ICF provided informative indications of the relative proportions of factors across these coronial reports. Results obtained using these methods concur with the literature in confirming the broad array of factors that are influential in suicide. This methodology and the application of the ICF proved sensitive enough to indicate the relative frequency of categories implicated in suicide cases, and to show differences in these factors across Indigenous and non-Indigenous groups.

The bio-psycho-social underpinnings of the ICF allowed the relative importance of issues such as mental functions to be depicted alongside environmental and social factors. The ICF might provide a constructive starting point for developing a framework to assist in
conceptualizing suicide. To further elucidate specific factors implicated in individual suicide cases, the examination of key issues such as alcohol consumption or instances of conflict prior to suicide would be required through more in-depth coding of reports.

With reference to the second research question, the current thematic classification of coroners’ reports using the ICF framework resulted in a number of factors being identified as influential in cases of suicide. Figures 2 and 3 illustrate that across coroner’s reports of suicide in the Northern Territory, Body functions and structures were mentioned frequently, and that (unsurprisingly) the majority of these instances tended to relate to Mental functions and/or structures of the nervous system. This suggests that in keeping with recent international research (Manoranjitham et al., 2010; Phillips, 2010), mental health issues were an important, but not ubiquitous factor in coroners’ considerations. They were noted in well under half of the Indigenous suicides and just over half of the non-Indigenous suicides in our sample. As such these findings provide some support for the assertion there is a need for greater understanding of the role and prominence of mental illness in suicide (Manoranjitham et al., 2010; Phillips, 2010; Pridmore, 2009).

Further, it may be noted that the ICF chapter Mental functions and/or structures of the nervous system is very broad in scope. Coding to this chapter included mention of major depressive disorders, such as clinical depression and bi-polar disorders, psychiatric disorders such as schizophrenia and other disorders, for example post traumatic stress disorder, anxiety and anorexia nervosa. This category included cases where diagnosis and treatment by a medical practitioner was reported, and also cases where there were anecdotal reports from family or friends of low mood, depression or even just acting strangely. It also included a few cases in which epilepsy, prior brain damage or a brain tumor was mentioned. Despite our broad coding of this chapter, it is clear that coroners in our sample did not find mental disorders present in all cases. While this may to some extent reflect the capacity of coroners to identify mental health issues, we suggest that it may also reflect the complex array of factors beyond mental health concerns.

The pattern of fewer Indigenous cases with mental factors noted, is consistent with a recent Queensland study (De Leo, Sveticic, Milner, & McKay, 2011). These findings may reflect greater access to mental and other health services, or possibly that mental health issues do not feature as significantly in Indigenous cases of suicide as they do for non-Indigenous cases. Regardless, these data suggest that mental and physical issues were not mentioned in a substantial number of coroners’ examinations of this sample of Indigenous and non-Indigenous completed suicides.

Our findings from the Northern Territory indicate that factors such as substance abuse and relationship breakdown, which have also been noted in the literature (De Leo & Evans, 2004; Scourfield et al., 2012) are highly important. Indeed our study suggests that these factors, which are categorized within Environmental factors in the ICF, are even more important contributing factors than mental and physical factors. Environmental factors as noted in figures 2 and 4 generally show that reports of Indigenous cases of suicide mentioned environmental factors (particularly Products and technology and Support and relationships) more frequently than non-Indigenous reports.

From the current findings, it would appear that Environmental factors are the most prevalent factors associated with both Indigenous and non-Indigenous suicide cases. The Products and technology chapter includes substance abuse, in particular excessive alcohol consumption, which has been implicated in suicide indirectly through inducing psychiatric problems and stressful situations, as well as indirectly by influencing inhibition and impulsive behavior (De Leo & Evans, 2004). Clearly it also impacts on Support and relationships, reflected in incidents of interpersonal conflict and violence. Regardless of whether factors such as alcohol and drug use are regarded as Environmental factors (as in the ICF) or more integral to mental functions, their importance as factors in suicide is clear.

The observation in the current study that there are differences in Indigenous and non-Indigenous suicide is supported by the literature (Hunter & Milroy, 2006; Tatz, 2004). Political and cultural factors, the legacies of colonialism, chronic unemployment, alcohol and drug use, along with a range of other disadvantages have been presented as a unique constellation of factors (Tatz, 2004). While the ‘specialness’ of Australian Indigenous suicide has been challenged (Dudley, 2004), the myriad of cultural, social and economic difficulties remain (Hayman, 2008; Hunter & Milroy, 2006), and such differences are evident in the current sample of coroners’ reports.

To more adequately investigate these issues, analysis must go beyond aligning coding to ICF components and chapters. Such reports and cases will need to be studied more closely and individual issues examined to understand whether there are
differences between Indigenous and non-Indigenous groups which correspond with other factors.

While these findings elucidate some dimensions of suicide, a number of limitations of the method should be noted. First, bias arising from variations in coronial recording and reporting practices should be acknowledged (Williams, Doessel, Sveticic, & de Leo, 2010). The current study drew from a relatively small jurisdiction, so there was considerable consistency across coroners involved. However, potential bias in coroners’ reporting of details and causal factors across gender, Indigenous status, location, context and other factors may have substantially influenced reports, and consequently the raw data of the study.

Second, coroners’ reports are not clinical documents and they may lack the “clinical focus” of other methods of assessment. However, since they use rigorous procedures, and are informed by a range of expert witnesses, friends, relatives and other stakeholders, they are valid data sources and hold considerable potential for this area of research.

Further, thematic coding may be seen as subjective, lacking the criteria and rigor of formal tools. In this study we have sought to address this concern by coding to an objective international classification system, according to established criteria and by verifying the method across researchers.

With regard to the application of the ICF to suicide research, the fact that Personal Factors are not specified is a considerable limitation and will have influenced the current findings. Clearly issues such as race, gender, age and educational level have substantial relevance to mental health, and their classification would be meaningful. Likewise, the degree of specificity of Mental Functions in the ICF may not currently be adequate for this area. Future revisions of the ICF may categorize these factors more clearly, which will considerably broaden its applicability to psychiatry and suicidology.

The current study confirms the use of the ICF as having relevance to the study of suicide in context. It confirms, using this independent classification system, the relative importance of environmental, mental and physical factors in suicide across Indigenous and non-Indigenous cases. Specifically it underscores the importance of alcohol, legal, illegal and prescription drugs and of relationship breakdown in cases of suicide across Indigenous and non-Indigenous populations.

The current findings provide strong support for interventions and strategies which emphasize community-based (DoHA, 2007), and social/environmentally oriented (DoHA, 2009) approaches. Psychiatry and suicide prevention activities should balance mental health interventions with strategies which may address the implications and antecedents of alcohol and drug use and relationship breakdown. Further, these results suggest that acknowledging certain limitations, the ICF could be used as a foundation for specific suicide-related classification structure or as a basis to inform interventions and assessments at the behavioral, social and population levels (Üstün et al., 2003; WHO, 2001).

**Author notes**

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References


