Archives of Suicide Research

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/usui20

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To cite this article: Jessica Rassy , Diane Daneau , Caroline Larue , Elham Rahme , Nancy Low , Suzanne Lamarre , Gustavo Turecki , Jean-Pierre Bonin , Helene Racine , Suzanne Morin , Kaberi Dasgupta , Johanne Renaud & Alain Lesage (2020): Measuring Quality of Care Received by Suicide Attempters in the Emergency Department, Archives of Suicide Research, DOI: 10.1080/13811118.2020.1793043

To link to this article: https://doi.org/10.1080/13811118.2020.1793043

Published online: 26 Jul 2020.

ARCHIVES OF SUICIDE RESEARCH
https://doi.org/10.1080/13811118.2020.1793043

Routledge
Taylor & Francis Group

Measuring Quality of Care Received by Suicide Attempters in the Emergency Department

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ABSTRACT

Context: Audits conducted on medical records have been traditionally used in hospitals to assess and improve quality of medical care but have yet to be properly integrated and used for suicide prevention purposes. We aimed to (1) revise a quality of care grid and adapt it to an adult population of suicide attempters and (2) identify quality of care deficits in managing adult suicide attempters at the emergency department (ED) in two different Montreal university hospitals.

Methods: An existing checklist for quality of medical and social care in the ED was adapted. A systematic search and data extraction of all suicide attempters in two different Montreal university hospitals were then conducted. All identified individuals who attempted suicide were fully reviewed and quality of care was assessed.

Results: Eleven criteria were kept by the expert focus group in the revised grid that was then used to rate 369 individuals that attempted suicide. Suicide risk assessment was only present in 63% of attempters before discharge. Although family history was documented for 90% of attempters, in only 41% of the cases were interviews conducted with relatives. Most discharged patient lacked proper follow-up considering 11% of their relatives received written information on resources in case of need.

Discussion: Paper records may be used to systematically assess the quality of care for suicide attempters seen in ED. Results reiterate the need for better suicide prevention strategies for these individuals. The checklist proved to be an excellent assessment of best practices or identification of possible improvements.

KEYWORDS

Audit; emergency department; Quality of care; suicide; suicide attempt;

INTRODUCTION

Suicide is a major public health concern worldwide (Borges et al., 2010; WHO, 2018). In Quebec alone, it takes the lives of more than a thousand individuals per year and represents almost a third of all suicide deaths in Canada (Levesque, Gagné, Pelletier, & Perron, 2018). Even more alarming is the fact that 48.7% of individuals who died by suicide were seen in the Emergency Department (ED) for various reasons including suicide attempts in the year preceding their death (Vasiliadis, Ngamini-Ngui, & Lesage, 2015).

Suicide attempts are known to be a major risk factor of suicide death (Steele, Thrower, Noroian, & Saleh, 2018). Many suicide attempters present themselves to the ED making it therefore a plausible place to prevent reenactment of suicidal behavior and the startup point for secondary prevention (Larkin & Beautrais, 2010). Yet, there are no "gold standards" in the management of suicidal patients. A myriad of recommendations, referred to as guidelines, do exist but with no obligation of a follow-up by the medical team (CRESP, 2015; Knesper, 2010; Lane, Hébert, Bazinet, & Gagné, 2015; NICE, 2004). The application of these recommendations is left entirely to the clinician's judgment toward the situation at hand. This allows for inconsistencies not only between hospital facilities but also between wards and clinicians as well.

There are documented gaps in services for suicide attempters, all jeopardizing patients' survival (Renaud et al., 2014; Vasiliadis et al., 2015). Audits of suicide cases conducted in two Canadian provinces (Fortin et al., 2019; Lesage et al., 2008) and systematically in the UK through the National Confidential Enquiry on Suicides, have shown important deficits in coordination of medical and social care involving the ED for patients in crisis (While et al., 2012). Amongst these identified deficits, mental health and substance use disorders seem not to be addressed in ED settings leaving patients and relatives to return to their environment that led to the attempt in the first place without appropriate support (Lesage et al., 2008). To avoid the return of suicidal behavior, it is necessary to systematically identify these service gaps and develop appropriate measures to address them. The recommendations from the clinical audits of the UK National Confidential Enquiry on Suicide, the New Brunswick provincial audit, and the Montreal audits all point toward improving standard procedures in the ED for suicide attempters by developing and applying standards-based audits for the ED with regards to suicide attempts.

To our knowledge, there is no other specific standards-based checklist to assess quality of care for adult suicide attempters that could be performed from medical records. There is, however, a grid that was developed for adolescent attempters on quality of medical and social care in the ED by France's Agence nationale d'accréditation et d'évaluation en santé (ANAES). This grid was further tested in Quebec by Renaud, Lesage, and Boivin (2004) with a sample of adolescents. Results of the use of the ANAES grid with adolescents from Quebec were very similar to results found in France. Following this adolescent audit process in Quebec, Renaud et al. (2004) strongly recommended extending the use of this grid to other contexts and populations. For this reason, the current study aims to (1) revise and adapt a quality of care grid to an adult population of suicide attempters in the context of Montreal university hospitals and (2) identify quality of care deficits in two different Montreal university hospitals.

MATERIALS AND METHODS

The study procedure included a total of three steps: (1) Review and adaptation of the quality of care grid, (2) Systematic search and data extraction, which were

conducted concurrently and (3) Identification of quality of care deficits in participating hospitals.

Review and Adaptation of the Quality of Care Grid

The first part of this study consisted of reviewing and adapting a quality of care grid to an adult population of suicide attempters in the context of Montreal university hospitals. As previously mentioned, the grid developed in France by the ANAES (1998) was adapted to the Quebec context by Renaud et al. (2004).

For the current study, Renaud et al.'s (2004) grid criteria were reviewed by an expert focus group composed of six psychiatrists, four nurses and two epidemiologists. The backgrounds of the clinicians were either clinical, managerial and/or academic. Discussions included practice conditions and habits of trade, inclusion of worldwide recommendations and guidelines, and legal restraint concerning adult rights about disclosure to relatives. Each criterion was assessed with consideration to professional experiences as well as recommendations issued from different countries. Consensus was reached on wording of each item. Guidelines from the United States of America (AASSPRC) (Knesper, 2010), United Kingdom (NICE) (NICE, 2004), New Zealand (CRESP, 2015) and Quebec (Lane, Archambault, Collins-Poulette, & Camirand, 2010) served as the basis of discussion.

During the data extraction, the raters held monthly meetings with researchers. Each meeting between raters focused on three items of the grid and further discussions were oriented toward items of prior meetings in which raters would encounter difficulties or had questions regarding item ratings. Seven review sessions were needed to ensure applicability and feasibility in retrieving this information in a medical chart, either by manuscript or electronically. The review sessions were held at one-month intervals giving raters a sufficient time to learn and debrief on the new directives between each session. In the presence of discrepancies, they would be questioned on their reasoning behind their decisions during the monthly meeting. Their inputs were noted in order to be added to following discussions. Also, a vignette describing each litigious point was created to inform future training efforts for similar purposes. A total of five vignettes were produced. Finally, an instruction booklet was written through an iterative process. The booklet includes the list of all the criteria, a brief definition of each of them, where and how they are usually written in a medical chart in Quebec's both official languages, and, finally how to rate the findings. Ratings varied between 0 (absent), 1 (present but not well documented) and 2 (present without any doubt). The vignettes deriving from the litigious cases were inserted at the end of the booklet to serve as reference and practice exercises. The booklet remained open for any addition of newly encountered litigious case throughout the study.

Out of the 16 original items, 5 were dropped. These dropped items included criteria present or absent "de facto" in 100% of Canadian ED practices selected for our study; or collected in all cases to assess a third one, and part of the important "not applicable" situation in the Renaud et al. (2004) study, and could not be recovered. Also, some items would never appear in a medical chart ("interview taking place in a suitable room") or involved knowledge and judgment of the environment ("Admission took

place in a suitable ward/department"). The final 11 items of the quality of care grid can be found in Table 1.

Systematic Search, Data Extraction and Coding Manual Development

The second part of this study consisted of a systematic search and data extraction of all suicide attempters in two different Montreal university hospitals. All individuals who presented themselves to the hospital as a potential suicide attempt between January 2009 and April 2010 were identified by hospital medical records and ED triage file. The date range chosen for the charts to be reviewed respected the timeframe of the ethics approval and included a full calendar year to account for seasonality. In total, 369 individuals who attempted suicide were identified. Four raters who were three physician research assistants trained in medical records extraction and one psychiatric nurse, the same raters from Rahme et al.'s (2016) study, were responsible for this part of the study. The independent raters extracted socio-demographic and clinical variables for the 369 identified individuals that attempted suicide. These 369 individuals were identified from a total of 5746 reviewed charts. The details of this process is thoroughly described in Rahme et al. (2016).

Identification of Quality of Care Deficits in Participating Hospitals

The third part of this study consisted of identifying quality of care deficits in the participating hospitals. As mentioned previously, quality of care was assessed for 369 individuals who presented themselves to the emergency department for a potential suicide attempt between January 2009 and April 2010. Descriptive statistics using standard deviations (SD) and proportions as appropriate were conducted by an independent statistical analyst. Rates of the identified quality of care deficits were calculated. Ethics approval from the Ethics Boards of the study hospitals and permission from the Director of Professional Services (DPS) were obtained for the triage assessment and chart review. Patient informed consent is not required for retrospective chart reviews and was not sought.

RESULTS

The final version of the "quality of care management for suicide attempters" grid includes a total of 11 criteria. 369 suicide attempts were identified and fully reviewed. Socio-demographic and clinical characteristics are presented in Table 2. Results from the "quality of care management for suicide attempters" grid are presented in Table 1. First, of the 369 individuals who attempted suicide, half were below 37 years of age and 47% were males. Poisoning (54%) followed by injury (laceration, collision, jump, fire, firearms) (22%) were responsible for most attempts. Among attempters, 70% were born in Canada, 46% were unemployed, 52% were single, 39% did not finish their high school, 36% had children and 36% lived alone. Most (74%) had a mental disorder diagnosis in their case notes (46% depression).

TABLE 1. Final quality of care grid adapted for an adult population and quality of care assessment of 369 consecutive suicide attempters in 2 Montreal university hospitals, January 2009–April 2010.

Criteria	Total ED only 158 (%)	Total ED & hospitalized 211(%)	Total 369 (%)
1. Same psychiatrist saw the patient for different interviews	109/154 (71)	83/210 (40)	192/364 (53)
2. Same psychiatric team coordinated all interventions	103/155 (66)	157 /210(75)	260/365 (71)
3. Suicide risk assessment present and documented	82/158 (52)	149/210 (71)	231/368 (63)
4. At least one interview with a relative was conducted during hospitalization regarding the patient's suicide attempt	45/158 (28)	107/210 (51)	152/368 (41)
5. Family history present in medical file	133/158 (84)	200/210 (95)	333/368 (90)
6. Initial contact was established with external resources in psychiatry for a follow-up and documented in medical file	88/158 (56)	157/210 (75)	245/368 (67)
7. Patient left with a planned appointment with a psychiatrist or psychologist (date and name of the professional written in medical file)	75/158 (47)	149/209 (71)	224 /367(61)
8. At discharge, patient had written information of a resource reachable 24/7 in case of need	25/158 (16)	49/209 (23)	74/367 (20)
9. Patient's relatives received written contact information of resource reachable 24/7 in case of need	11/158 (7)	30/210 (14)	41/368 (11)
10. The resource used in case of emergency knows about the existence of the patient and a contact has been established with the patient	52/158 (33)	122/210 (58)	174/368 (47)
11. A professional was informed about the attendance of the patient to the planned appointment and took necessary initiative in case of no-show	47/158 (30)	113/210 (54)	160/368 (43)

Second, the descriptive statistic of each criterion is indicated in the "Total" column of Table 1. Quality was found in the systematic evaluation and coordination of inpatient care by mental health professionals (items 1–11). Results show that suicide risk was only assessed in 63% of all individuals who attempted suicide (item 3). Also, interviews with relatives were only conducted in 41% of the cases (item 4). However, family history was documented in the medical files (item 5) of 90% of the cases. The deficits were mostly found in the coordination of outpatient appointment. More precisely, items 8 and 9 show that only 20% of patients and 11% of relatives received written contact information of resources reachable 24/7 in case of emergency, according to the case records. Also, less than half (47%) of suicide attempters seen left with a planned appointment noted in the medical record with a psychiatrist or a psychologist (item 10). In addition, for 43% of suicide attempters, a professional was informed about their attendance to their next planned appointment, according to the medical records.

DISCUSSION

The current study aimed to review and adapt a quality of care grid to an adult population of suicide attempters in the context of Montreal hospitals and to identify quality of

TABLE 2. Socio-demographic and clinical characteristics of 369 consecutive suicide attempters in 2 Montreal university hospitals, January 2009–April 2010.

	Total ED only: 158 (%)	Total ED & hospitalized: 211 (%)	Total: 369 (%)
Males	66 (42)	106 (50)	172 (47)
Age	32	41	37
Median age (IQR) years	28	40	33
Method used (%)			
Poisoning	98 (62)	103 (49)	201 (54)
Injury	20 (13)	62 (29)	82 (22)
Hanging/strangulation	8 (5)	17 (8)	25 (7)
Other	8 (5)	18 (9)	26 (7)
Sociodemographic factors			
Canadian born	106 (67)	152 (72)	258 (70)
Unemployed	68 (43)	99 (47)	167/366 (46)
Single	74 (52)	103 (52)	177/338 (52)
High school graduate	60 (40)	79 (39)	139/356 (39)
With children	44 (31)	75 (39)	119/334 (36)
Living alone	41 (27)	91 (44)	132 (36)
Any mental disorder	108 (68)	166 (79)	274 (74)
Depression	66 (42)	105 (50)	171 (46)
Substance abuse	40 (25)	49 (23)	89 (24)
Schizophrenia	9 (6)	25 (12)	34 (9)
Bipolar	5 (3)	14 (7)	19 (5)
Axis II	34 (22)	45 (21)	79 (21)
Attempt in prior year	31 (20)	52 (25)	83 (23)
Died during hospitalization	0	6 (3)	6 (2)
Family physician	62 (48)	98 (56)	160/305(53)
Comorbidity			
Cardiovascular	57 (36)	97 (46)	154 (42)
Cancer	6 (4)	16 (8)	22 (6)
Respiratory	15 (9)	8 (4)	23 (6)
Chronic pain	8 (5)	11 (5)	19 (5)
Other	49 (31)	86 (42)	135 (37)
Presence of support system	42 (27)	58 (27)	100 (27)
Mental illness			
In family	45 (28)	69 (33)	114 (31)
Father or mother	40 (25)	56 (27)	96 (26)
Depression			
Family	27 (17)	38 (18)	65 (18)
Mother	23 (15)	28 (13)	51 (14)
Suicide in family	10 (6)	15 (7)	25 (7)

care deficits in two different Montreal university hospitals. The newly revised grid included 11 criteria that were selected by an expert focus group. This new version of the grid was then applied to 369 individuals who attempted suicide for quality of care assessment (158 treated in the ED following ED visit). Results of this study helped identify many deficits in the quality of care of suicide attempters in the ED of the study hospitals. First, suicide risk assessment was only documented in 63% of individuals who attempted suicide (criteria 3), and only 52% of the ED cases. These results were much lower than what was identified in Renaud et al.'s (2004) study with 97.5% of adolescents being assessed in a Children's university hospital. This difference may result from differences between adult and pediatric care. Second, interviews with relatives were conducted in only 41% of the cases (criteria 4) which was less than the 50% proportion found from the ANAES in adults and the 100% proportion found by Renaud et al. (2004) in adolescents admitted to hospital for suicide attempt where their parents would be present most of the time. This difference may be attributed to the fact that parents of children and adolescents must be contacted and implicated if their children are at-risk of

danger to themselves. However, for adults, this raises concern for relatives and reflects the confusion in regard to the patient's right to confidentiality and the level of information that can be provided to close relatives. This being said, even if the individual's loved ones are present, health professional might be less inclined to interview them if the individual is against sharing any information with them. However, to conduct a thorough and complete suicide risk assessment, it is strongly recommended that loved ones be implicated as well. Finally, the hospitalization of more than half of the patients as well as a potential lack of ED service coordination and continuity of services can possibly explain why only 20% of the patients and 11% of the patients' relatives received written contact information for available resources in case of need (criteria 8 and 9). These results are similar to previous audits where only 20% of patients received this information in France and are lower than the 41% found among adolescents in Renaud et al.'s (2004) Quebec audit. As for the low percent of relatives that received contact information in our study, this criterion was adapted for the new version of the grid that we created and was not assessed in previous studies. This information might be verbal and clinicians may have failed to document it in their files, but would still indicate a low priority attached to these suicide prevention actions, whilst others, like contacting a discharge outpatient clinician was better recorded and completed. This illustrates a clear need for better service coordination and continuity with patients and their relatives.

The current study does present some limitations and strengths. First, we assessed all patients who presented to the ED whether or not they were subsequently admitted to hospital. This does cause some limitations as to the deficits in quality of care identified in the case notes but may inflate some criteria completion. For example, some patients were eventually hospitalized, giving more time for criteria to be enacted, like family interviews. Second of all, there is the possibility of missing data in this study; however, this missing information only accounts for less than 5% of all important variables. Also, although extractors followed a rigorous process to extract data for analysis from all multidisciplinary notes, interviews with staff and patients would have allowed a better understanding of each criterion and if they are recorded in the medical files. It would have been interesting to know how criteria were interpreted and how they were assessed in each hospital considering it was assumed by extractors that criteria not documented in file was not assessed. Certain tasks may therefore have been performed without being documented in the person's file. Also, although extractors participated in monthly discussions during the data collection, it is also possible that they did not all identify criteria the same way. However, deficits identified in this study do coincide with larger and more exhaustive studies (While et al., 2012). Further research should focus on exploring these aspects in a more in-depth way and validation studies should also be conducted. At the time of the study, our expert group was less aware of our recent audits of suicide cases, echoing previous audits in the Canadian context (Lesage et al., 2008) that substance-related disorders (SRD) were associated with half the suicide cases, were associated with half the suicide cases, were not in contact with specialist addictions services and there was a lack of liaison between ED, specialist mental health and specialist SRD (Fortin et al., 2019). Furthermore, one of the hospitals included in the study did not have an intervention unit for addictions which explains why this original item was dropped. We would therefore suggest a new item stating "a systematic evaluation of

presence of SRD was conducted, reported, and if positive, a liaison staff from specialist SRD conducted evaluation in the ED or hospital setting before discharge."

As for strengths, this study had access to individuals that attempted suicide that are difficult to capture otherwise. Individuals that attempted suicide identified by only nurses triage notes were included. Similar findings showed that more than half of attempted suicide presentations remained "silent" (went undetected) if nurses' notes were ignored (Daneau, 2016; Rahme et al., 2016). Another strength is that our study can be reproduced in all Quebec's hospital and probably any Canadian hospital since the medical records systems respond to provincial and even Canadian accreditation standards. It can be tested in US and European countries, certainly France where the original grid captured similar deficits than our Canadian study. Although improvements in the criteria and wording of the grid are still necessary, this newly revised quality of care grid for an adult population of suicide attempters represents a simple, as well as time and cost-effective method to assess quality of care without having to conduct an extensive and thorough audit process. Other studies in Canada and in the UK have also demonstrated that improving quality of care after recommendations following audits of medical care contributes to a reduction in suicide rates (While et al., 2012). The newly revised quality of care grid therefore provides a promising avenue for suicide prevention in the ED.

Further research into the validity of the grid could associate specific criteria with suicidal death. The introduction of a systematic national suicide prevention protocol for all patients that present themselves to the ED, as suggested by previous audits, containing the 11 elements of the grid, in addition to a new item on Substance Related Disorders systematic evaluation and reference, might be a solution to better improve quality of care for adult suicide attempters (Lesage et al., 2008; Lesage & Fortin, 2018; NICE, 2004; While et al., 2012).

ACKNOWLEDGMENTS

Jessica Rassy received a postdoctoral grant from the Quebec Network on Nursing Intervention Research (RRISIQ) and the project from the Réseau Québécois sur le suicide, les troubles de l'humeur et les troubles associés (RQSHA).

DISCLOSURE STATEMENT

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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